ETSI EN 300 440 V2.2.1 (2018-07)

TEST REPORT

For

Renesas Design Korea Inc.

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Tested Model: RRQ61001-009
Multiple Models: RRQ61001-010

Report Type:	**Product Type:**
Original Report	RRQ61001 Module

Report Number:	2602P42655E-22B
Report Date:	2026/3/11
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Approved By:	Rocky Xiao RF Supervisor
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DOCUMENT REVISION HISTORY

Revision Number	Report Number	Description of Revision	Date of Revision
1.0	2602P42655E-22B	Original Report	2026/3/11

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product Name:	RRQ61001 Module
EUT Model:	RRQ61001-009
Multiple Models:	RRQ61001-010
Model Difference:	Refer to Dos
Rated Input Voltage:	1.8~3.6Vdc (Typical:3.3Vdc)
Serial Number:	3GD9-1 (For Radiated Test) 3GD9-2 (For RF Conducted Test)
EUT Received Date:	2026/1/20
EUT Received Status:	Good

Technical Specification

Operation Frequency Range (MHz):		802.11 a/n20/ac20/ax20: 5745-5825
RF Output Power (EIRP) (dBm):		13.971
Number of Chains	**Transmit:**	1
	Receive:	1
Antenna Gain (dBi)▲:		4.4
Modulation Type:		OFDM, OFDMA
Note: The manufacturer declares that the 802.11 ax HE mode only supports full RU and doesn't support partial RU.		

Objective

This report is prepared on behalf of ***Renesas Design Korea Inc.*** in accordance with ETSI EN 300 440 V2.2.1 (2018-07) Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard for access to radio spectrum.

The objective is to determine the EUT complies with: ETSI EN 300 440 V2.2.1 (2018-07).

Test Methodology

All measurements contained in this report were conducted with ETSI EN 300 440 V2.2.1 (2018-07) Short Range Devices (SRD); Radio equipment to be used in the 1 GHz to 40 GHz frequency range; Harmonised Standard for access to radio spectrum.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.12, Pulong East 1st Road, Tangxia Town, Dongguan, Guangdong, China.

Measurement Uncertainty

Parameter	F_{lab}	Maximum allow uncertainty
Radio Frequency	$\pm 0.076\times10^{-6}$	$\pm 1\times10^{-7}$
RF Power (Conducted)	±0.55dB	±2,5dB
Radiated emission of transmitter, valid to 26,5 GHz	±5.61dB	±6dB
Radiated emission of transmitter, valid between 26,5 GHz and 66 GHz	±5.65dB	±8dB
Radiated emission of receiver, valid to 26,5 GHz	±5.61dB	±6dB
Radiated emission of receiver, valid between 26,5 GHz and 66 GHz	±5.65dB	±8dB
Humidity	±5%	±5%
Temperature	±1℃	±1℃
Voltage(DC)	±0.4%	±1%
Voltage(AC,<10kHz)	±1%	±2%

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

Declarations

The information marked ▲ is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

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Each test item follows the test standard(s) without deviation.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The EUT was configured for testing in an engineering mode, which is provided by manufacture.
The device supports 802.11a/n ht20/ac vht20/ax he20.

For 802.11a, 802.11n ht20, 802.11ac vht20, 802.11 ax he20, Channel 149, 157 and 165 were tested.

Channel	Frequency (MHz)	Channel	Frequency (MHz)
149	5745	161	5805
153	5765	165	5825
157	5785	/	/

The extreme temperature test conditions which were declared by the manufacturer and the normal conditions are as below:

Extreme test Temperature(℃)		Extreme test Voltage(Vdc)	
NT, Normal Temperature:	25	NV, Normal Voltage:	3.3
LT, Low Temperature:	-40	LV, Low Voltage:	1.8
HT, High Temperature:	85	HV, High Voltage:	3.6

Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

Software: " Tera Term 5▲", and the maximum power level is configured as below setting, which was provided by manufacturer. The worst-case data rates are determined to be as follows for each mode based upon investigation by measuring the average power and PSD across all data rates bandwidths, and modulations.

Band	Mode	Frequency (MHz)	Data rate	Power level
5725-5850	802.11 a	5745	6 Mbps	6
		5785	6 Mbps	6
		5825	6 Mbps	6
	802.11 n20	5745	HT MCS0	6
		5785	HT MCS0	6
		5825	HT MCS0	6
	802.11 ac20	5745	VHT MCS0	6
		5785	VHT MCS0	6
		5825	VHT MCS0	6
	802.11 ax20	5745	HE MCS0	6
		5785	HE MCS0	6
		5825	HE MCS0	6

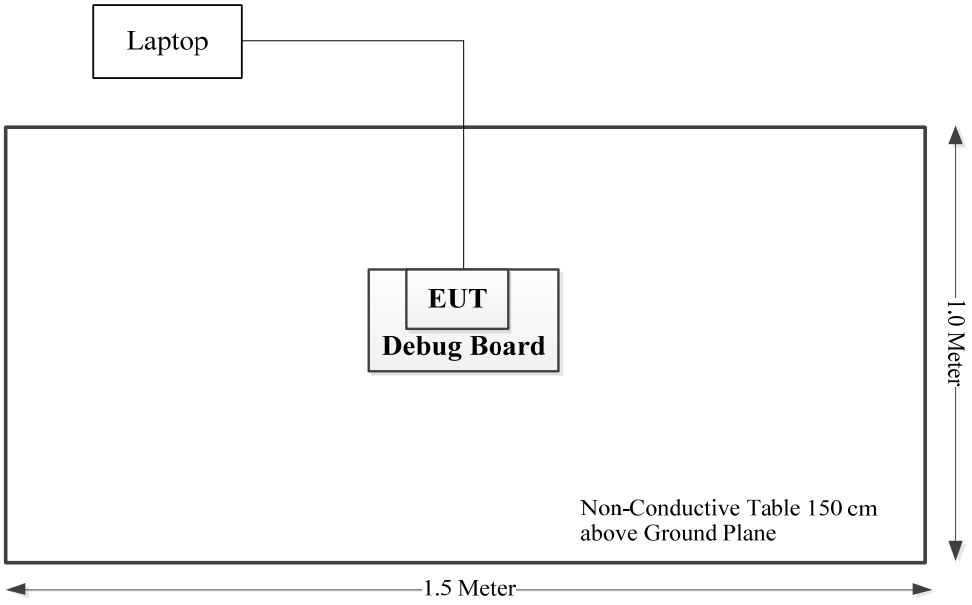
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
unknown	Debug Board	unknown	2YVE-8
Azeyoo	Laptop	AL141U	unknown

Support Cable List and Details

Cable Description	Shielding Cable	Ferrite Core-	Length (m)	From Port	To
USB Cable	NO	NO	1.1	Debug Board	Laptop

Block Diagram of Test Setup



Test Equipment List

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Radiated emissions below 1GHz					
Sunol Sciences	Hybrid Antenna	JB3	A060611-2	2024/4/16	2027/4/15
Narda	Coaxial Attenuator	757C-6dB	34010	2024/4/16	2027/4/15
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2025/7/1	2026/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2025/7/1	2026/6/30
Unknown	Coaxial Cable	C-NJNJ-50	C-1400-01	2025/7/1	2026/6/30
Sonoma	Amplifier	310N	372193	2025/7/30	2026/7/29
R&S	EMI Test Receiver	ESCI	100035	2025/6/25	2026/6/24
EMCO	Adjustable Dipole Antenna	3121C	9109-753	N/A	N/A
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2025/9/4	2026/9/3
Agilent	Signal Generator	E8247C	MY43321350	2025/7/28	2026/7/27
Radiated emissions above 1GHz					
ETS-Lindgren	Horn Antenna	3115	000 527 35	2023/9/7	2026/9/6
AH	Horn Antenna	SAS-571	1177	2023/2/22	2026/2/21
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-02 1304	2023/2/22	2026/2/21
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-03 1304	2023/2/22	2026/2/21
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-01 1302	2023/2/22	2026/2/21
Ducommun Technologies	Horn Antenna	ARH-2823-02	1007726-02 1302	2023/2/22	2026/2/21
Xinhang Macrowave	Coaxial Cable	XH750A-N/J-SMA/J-10M	20231117004 #0001	2025/11/17	2026/11/16
Xinhang Macrowave	Coaxial Cable	XH360A-2.92/J-2.92/J-6M-A	20231208001 #0001	2025/11/14	2026/11/13
Micro-Coax	Coaxial Cable	UFA210B	99G1448	2025/9/4	2026/9/3
Agilent	Signal Generator	E8247C	MY43321350	2025/7/28	2026/7/27
AH	Preamplifier	PAM-0118P	469	2025/4/11	2026/4/10
AH	Preamplifier	PAM-1840VH	191	2025/7/31	2026/7/30
R&S	Spectrum Analyzer	FSV40	101944	2025/8/8	2026/8/7
Decentest	Multiplex Switch Test Control Set & Filter Switch Unit	DT7220SCU & DT7220FSU	DS79902 & DS79905	2025/8/25	2026/8/24
RF conducted					
R&S	Spectrum Analyzer	FSV40	101589	2025/7/28	2026/7/27
JD	Test Software	JD Auto Test System	V1.0	N/A	N/A
JD	Broadband Wireless Access Device Test Control box	DT2400MCU	DS78804	2025/5/23	2026/5/22
R&S	Wideband Radio Communication Tester	CMW500	149216	2025/7/28	2026/7/27
R&S	Spectrum Analyzer	FSV40	101589	2025/07/28	2026/07/27
Agilent	MXG Vector Signal Generator	N5182B	MY51350142	2026/1/14	2027/1/13
JD	MPS Multi-channel Power Acquisition Device	DT2400MPS	DS78730	2025/05/23	2026/05/22
GLOBAL	TEMP&HUMI Test Chamber	BTH-150-40	30173	2025/08/01	2026/07/31

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
All-sun	Multimeter	EM305A	8348897	2025/08/18	2026/08/17
JD	Test Software	JD Auto Test System	V1.0	N/A	N/A
TDK-Lambda	DC Power Supply	Z+60-14	F-08-EM038-1	N/A	N/A

** Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).*

Environmental Conditions

Test Item:	Radiated emissions below 1GHz	Radiated emissions above 1GHz	RF conducted
Temperature:	23.8 ℃	21.8 ℃	24.9~25.1℃
Relative Humidity:	42.0 %	42.0 %	40~67%
ATM Pressure:	101.9 kPa	101.5 kPa	100.5~101.6kPa
Tester:	Lancer Zhang	Willem Qiu, Leo Xiao	Cooper Zhou
Test Date:	2026/2/2	2026/2/10	2026/1/28~2026/3/3

SUMMARY OF TEST RESULTS

SN	ETSI EN 300 440 V2.2.1 Rule and Clause	Description of Test	Test Result
1	4.2.2	Equivalent isotropically radiated power	Compliant
2	4.2.3	Permitted range of operating frequencies	Compliant
3	4.2.4	Unwanted emission in the spurious emissions domain	Compliant
4	4.2.5	Duty cycle	Not Applicable
5	4.2.6	Additional requirements for FHSS equipment	Not applicable*
6	4.3.3	Adjacent channel selectivity	Not applicable**
7	4.3.4	Blocking or desensitization	Compliant
8	4.3.5	Spurious emission	Compliant
9	4.4	Spectrum access techniques	Not applicable***
10	4.6.4	GBSAR antenna pattern	Not applicable****
11	Annex I	Limits for GBSAR	Not applicable****

Note:
The manufacturer declared that the equipment belongs to category 2 receiver.
Not Applicable: Testing has no required for 5725-5875MHz.
Not Applicable: The device is not FHSS equipment.*
*Not Applicable**: Testing is not required for equipment category 2 receiver.*
*Not Applicable***: Testing is only required for media access equipment.*
*Not Applicable****: Testing is only required for GBSAR systems.*

1 - EQUIVALENT ISOTROPICALLY RADIATED POWER

Applicable Standard

According to ETSI EN 300 440 section 4.2.2, the equivalent isotropically radiated power requirement shall apply to all transmitters.

The transmitter maximum e.i.r.p. under normal and extreme test conditions is provided in table 2.

Table 2: Maximum radiated peak power (e.i.r.p.)

Frequency Bands	Power	Application	Notes
2 400 MHz to 2 483,5 MHz	10 mW e.i.r.p.	Non-specific short range devices	
2 400 MHz to 2 483,5 MHz	25 mW e.i.r.p.	Radio determination devices	
(a) 2 446 MHz to 2 454 MHz	500 mW e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and annex D
(b) 2 446 MHz to 2 454 MHz	4 W e.i.r.p.	Radio Frequency Identification (RFID) devices	See also table 4 and annex D
5 725 MHz to 5 875 MHz	25 mW e.i.r.p.	Non-specific short range devices	
9 200 MHz to 9 500 MHz	25 mW e.i.r.p.	Radio determination devices	
9 500 MHz to 9 975 MHz	25 mW e.i.r.p.	Radio determination devices	
10,5 GHz to 10,6 GHz	500 mW e.i.r.p.	Radio determination devices	
13,4 GHz to 14,0 GHz	25 mW e.i.r.p.	Radio determination devices	
17,1 GHz to 17,3 GHz	400 mW e.i.r.p.	Radio determination devices	See annex F
24,00 GHz to 24,25 GHz	100 mW e.i.r.p.	Non-specific short range devices and Radio determination devices	

Test Procedure

According to ETSI EN 300 440 V2.2.1 (2018-07) §4.2.2.3

Test Data

Test Result: Compliant. *Please refer to following table:*

Test Condition: NT/NV

Test Mode	Antenna	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
802.11a	Chain 0	5745	13.617	13.98	Pass
		5785	13.515	13.98	Pass
		5825	13.423	13.98	Pass
802.11n20	Chain 0	5745	13.531	13.98	Pass
		5785	13.640	13.98	Pass
		5825	13.554	13.98	Pass
802.11ac20	Chain 0	5745	13.417	13.98	Pass
		5785	13.319	13.98	Pass
		5825	13.269	13.98	Pass
802.11ax20	Chain 0	5745	13.444	13.98	Pass
		5785	13.411	13.98	Pass
		5825	13.344	13.98	Pass

Test Condition: LT/LV

Test Mode	Antenna	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
802.11a	Chain 0	5745	13.745	13.98	Pass
		5785	13.654	13.98	Pass
		5825	13.560	13.98	Pass
802.11n20	Chain 0	5745	13.772	13.98	Pass
		5785	13.844	13.98	Pass
		5825	13.785	13.98	Pass
802.11ac20	Chain 0	5745	13.618	13.98	Pass
		5785	13.555	13.98	Pass
		5825	13.488	13.98	Pass
802.11ax20	Chain 0	5745	13.653	13.98	Pass
		5785	13.546	13.98	Pass
		5825	13.490	13.98	Pass

Test Condition: LT/HV

Test Mode	Antenna	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
802.11a	Chain 0	5745	13.916	13.98	Pass
		5785	13.788	13.98	Pass
		5825	13.827	13.98	Pass
802.11n20	Chain 0	5745	13.971	13.98	Pass
		5785	13.921	13.98	Pass
		5825	13.936	13.98	Pass
802.11ac20	Chain 0	5745	13.864	13.98	Pass
		5785	13.628	13.98	Pass
		5825	13.550	13.98	Pass
802.11ax20	Chain 0	5745	13.705	13.98	Pass
		5785	13.671	13.98	Pass
		5825	13.744	13.98	Pass

Test Condition: HT/LV

Test Mode	Antenna	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
802.11a	Chain 0	5745	13.349	13.98	Pass
		5785	13.135	13.98	Pass
		5825	13.075	13.98	Pass
802.11n20	Chain 0	5745	13.216	13.98	Pass
		5785	13.390	13.98	Pass
		5825	13.226	13.98	Pass
802.11ac20	Chain 0	5745	13.109	13.98	Pass
		5785	12.923	13.98	Pass
		5825	12.915	13.98	Pass
802.11ax20	Chain 0	5745	13.157	13.98	Pass
		5785	13.135	13.98	Pass
		5825	12.916	13.98	Pass

Test Condition: HT/HV

Test Mode	Antenna	Freq. (MHz)	EIRP (dBm)	EIRP Limit (dBm)	Verdict
802.11a	Chain 0	5745	13.470	13.98	Pass
		5785	13.270	13.98	Pass
		5825	13.173	13.98	Pass
802.11n20	Chain 0	5745	13.348	13.98	Pass
		5785	13.400	13.98	Pass
		5825	13.318	13.98	Pass
802.11ac20	Chain 0	5745	13.210	13.98	Pass
		5785	13.074	13.98	Pass
		5825	13.136	13.98	Pass
802.11ax20	Chain 0	5745	13.306	13.98	Pass
		5785	13.244	13.98	Pass
		5825	13.139	13.98	Pass

2 - PERMITTED RANGE OF OPERATING FREQUENCIES

Applicable Standard

Per EN 300 440 section 4.2.3, the permitted range of operating frequencies includes all frequencies on which the equipment may operate within an assigned frequency band. The operating frequency range shall be declared by the manufacturer.

The frequency range of the equipment is determined by the lowest and highest frequencies occupied by the power envelope in accordance with clause 4.2.2.4, table 2. FH is the highest frequency of the power envelope, it is the frequency furthest above the frequency of maximum power where the output power envelope drops below the level of -75 dBm/Hz spectral power density (e.g. -30 dBm if measured in a 30 kHz reference bandwidth) e.i.r.p.

FL is the lowest frequency of the power envelope; it is the frequency furthest below the frequency of maximum power where the output power drops below the level of -75 dBm/Hz spectral power density (e.g. -30 dBm if measured in a 30 kHz reference bandwidth) e.i.r.p.

The occupied bandwidths and OCW of the transmitter shall be declared. Where differing modes of emission are available, all modes and their associated bandwidths shall be stated.

Test Procedure

According to ETSI EN 300 440 V2.2.1 (2018-07) §4.2.3.3

Test Data

Test Result: Compliant. *Please refer to following table:*

OFR:

Test Condition	Test Mode	Frequency(MHz)			
		F_L at Low Channel	F_H at High Channel	F_L Limit	F_H Limit
NT/NV	802.11a	5736.1712	5833.9890	5725	5875
	802.11n20	5735.5305	5834.3894	5725	5875
	802.11ac20	5735.5706	5834.4294	5725	5875
	802.11ax20	5735.2903	5834.6697	5725	5875

Test Condition	Test Mode	Frequency(MHz)			
		F_L at Low Channel	F_H at High Channel	F_L Limit	F_H Limit
LT/LV	802.11a	5736.3222	5834.1100	5725	5875
	802.11n20	5735.7425	5834.5514	5725	5875
	802.11ac20	5735.7286	5834.5824	5725	5875
	802.11ax20	5735.4653	5834.8637	5725	5875

Test Condition	Test Mode	Frequency(MHz)			
		F_L at Low Channel	F_H at High Channel	F_L Limit	F_H Limit
LT/HV	802.11a	5736.4822	5834.3800	5725	5875
	802.11n20	5735.8785	5834.7144	5725	5875
	802.11ac20	5735.8986	5834.7634	5725	5875
	802.11ax20	5735.6143	5834.9877	5725	5875

Test Condition	Test Mode	Frequency(MHz)			
		F_L at Low Channel	F_H at High Channel	F_L Limit	F_H Limit
HT/LV	802.11a	5735.9262	5833.6180	5725	5875
	802.11n20	5735.1975	5834.0914	5725	5875
	802.11ac20	5735.2556	5834.1354	5725	5875
	802.11ax20	5734.9623	5834.3587	5725	5875

Test Condition	Test Mode	Frequency(MHz)			
		F_L at Low Channel	F_H at High Channel	F_L Limit	F_H Limit
HT/HV	802.11a	5736.0592	5833.8340	5725	5875
	802.11n20	5735.3685	5834.2214	5725	5875
	802.11ac20	5735.3756	5834.2544	5725	5875
	802.11ax20	5735.1053	5834.4817	5725	5875

Occupied Channel Bandwidth:

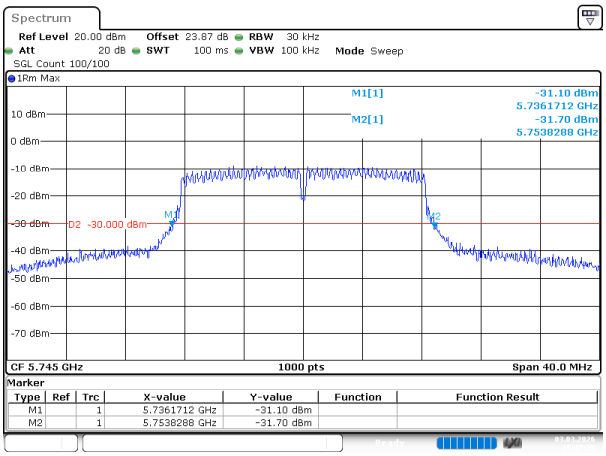
Test Mode	Antenna	Freq. (MHz)	OCB (MHz)	F_L (MHz)	F_H (MHz)	Limit (MHz)	Verdict
802.11a	Chain 0	5745	16.36	5736.82	5753.18	The whole OBW fall full within 5725~5875MHz range	Pass
		5825	16.40	5816.78	5833.18		Pass
802.11n20	Chain 0	5745	17.56	5736.22	5753.78		Pass
		5825	17.56	5816.22	5833.78		Pass
802.11ac20	Chain 0	5745	17.60	5736.18	5753.78		Pass
		5825	17.60	5816.18	5833.78		Pass
802.11ax20	Chain 0	5745	18.76	5735.62	5754.38		Pass
		5825	18.76	5815.62	5834.38		Pass

Please refer to following plots:

OFR:

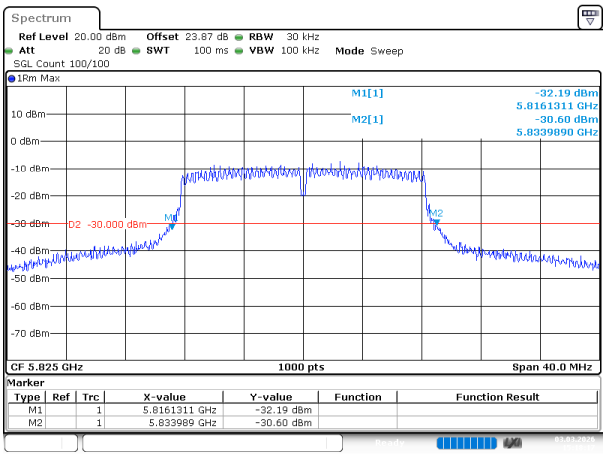
5725-5850MHz, Test Condition: NT/NV

802.11a_5745MHz



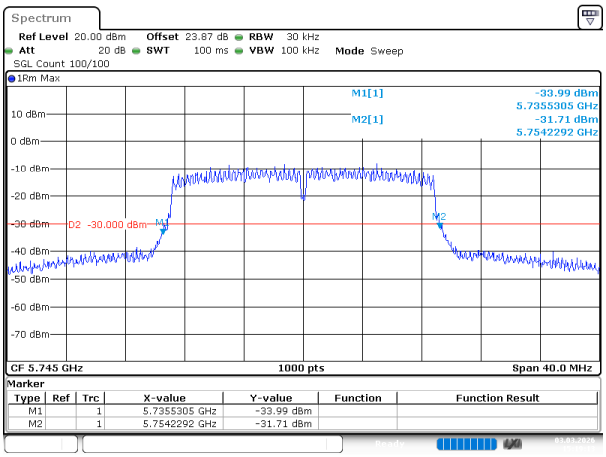
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802.11a_5825MHz



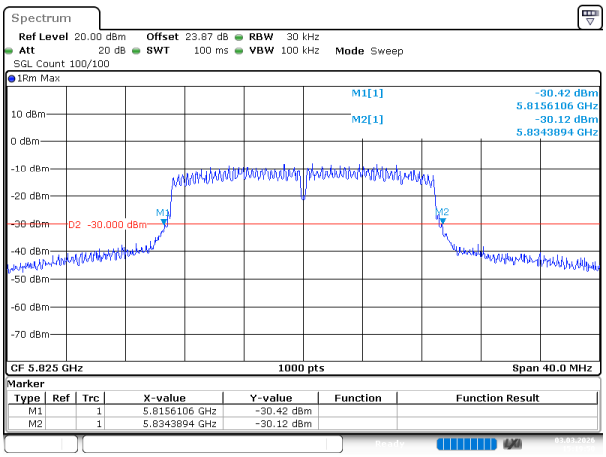
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Date: 3.MAR.2026 15:18:17

802.11n20_5745MHz



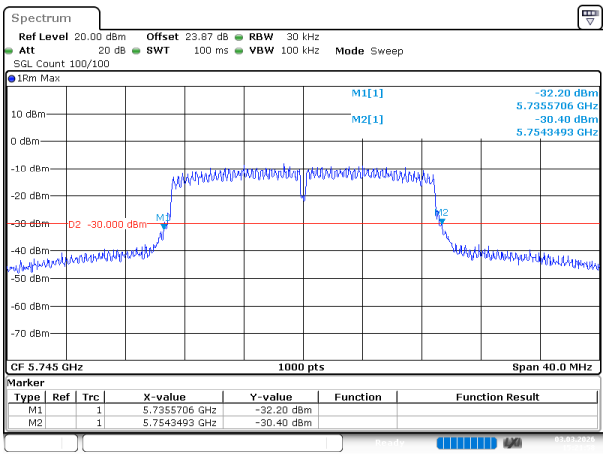
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Date: 3.MAR.2026 15:19:13

802.11n20_5825MHz



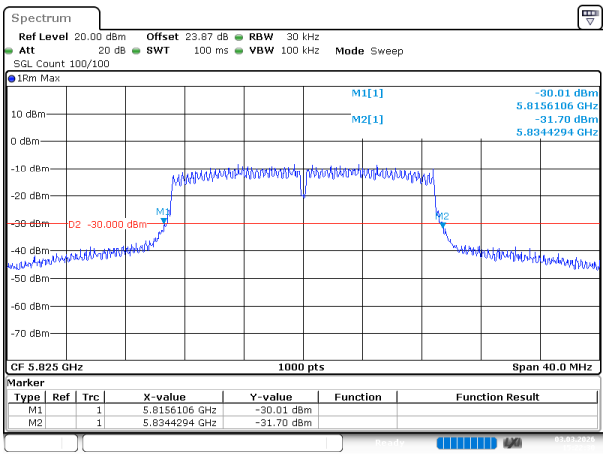
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802.11ac20_5745MHz



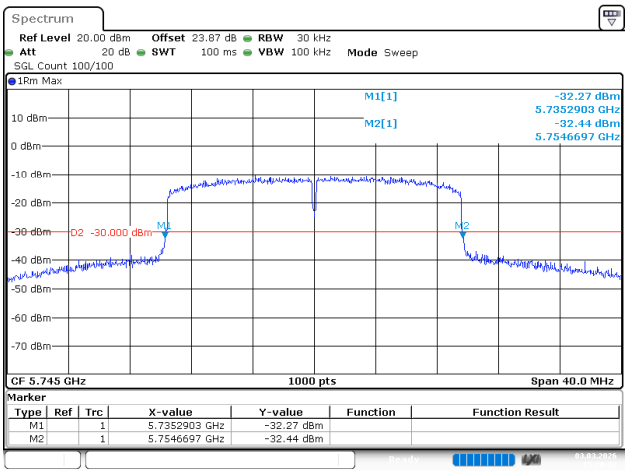
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Date: 3.MAR.2026 15:21:58

802.11ac20_5825MHz



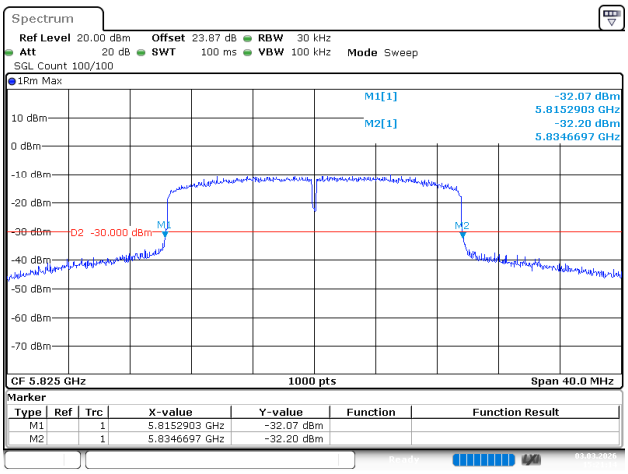
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802.11ax20_5745MHz_RU_Full



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Date: 3.MAR.2026 15:20:32

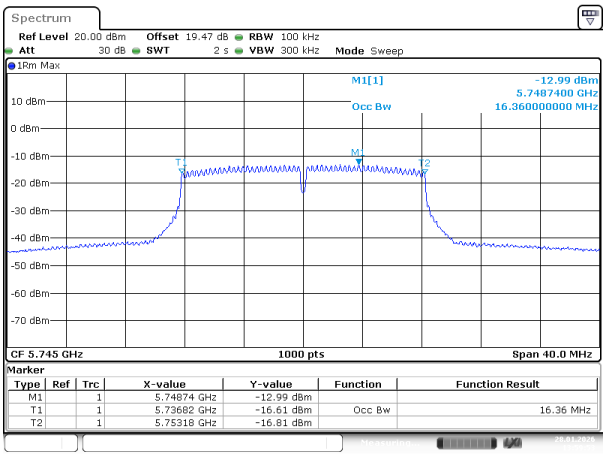
802.11ax20_5825MHz_RU_Full



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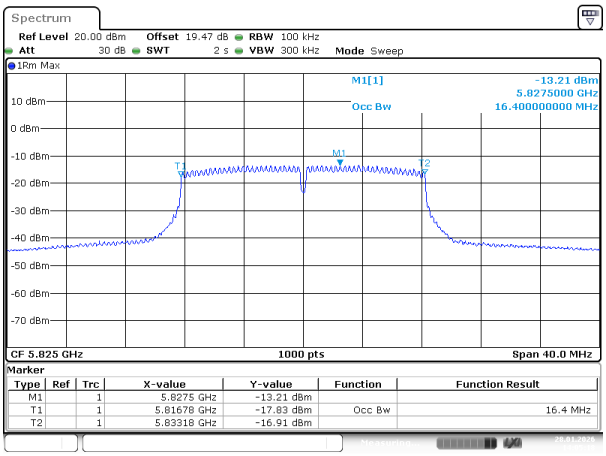
Occupied Channel Bandwidth:
5725-5850MHz, Test Condition: NT/NV

802.11a_5745MHz



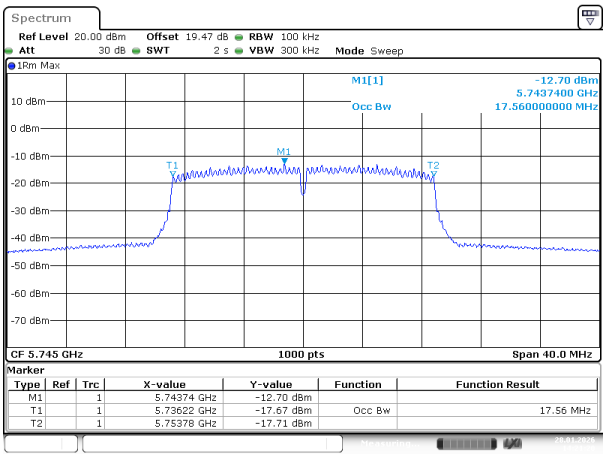
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802.11a_5825MHz



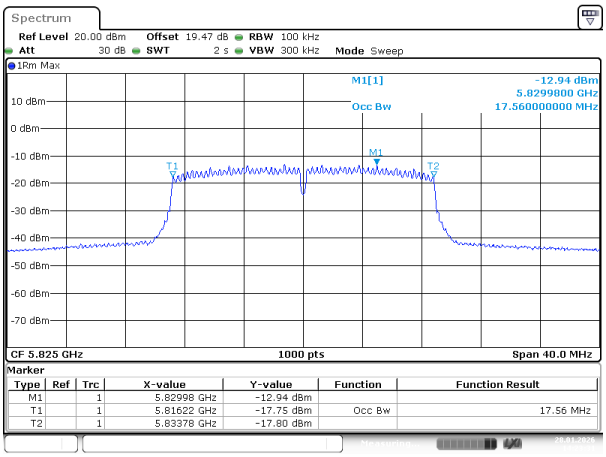
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802.11n20_5745MHz



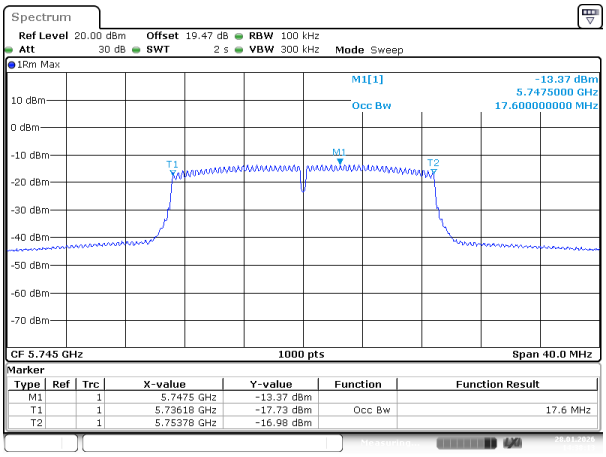
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802.11n20_5825MHz



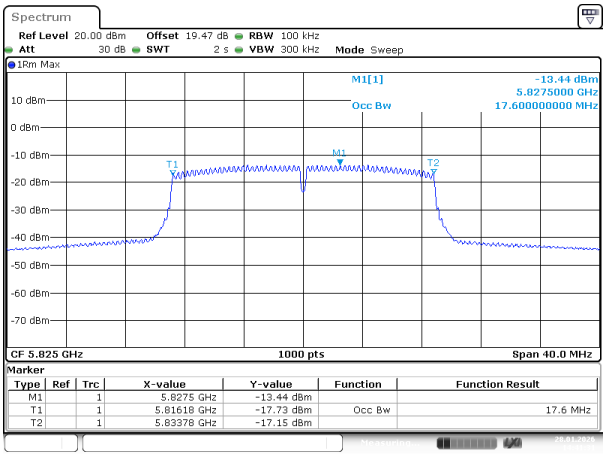
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802.11ac20_5745MHz



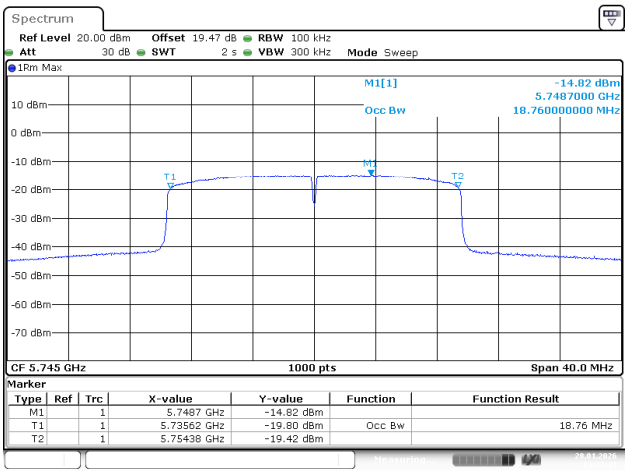
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802.11ac20_5825MHz



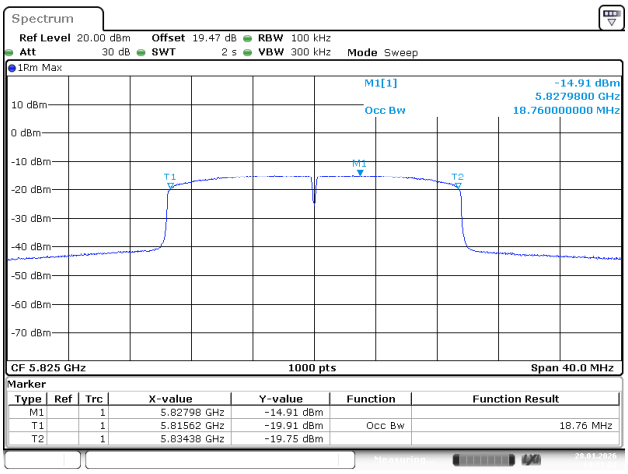
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802.11ax20_5745MHz_RU_Full



ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 28.JAN.2026 14:27:41

802.11ax20_5825MHz_RU_Full



ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 28.JAN.2026 14:31:23

3 - UNWANTED EMISSION IN THE SPURIOUS EMISSIONS DOMAIN

Applicable Standard

Per EN 300 440 section 4.2.4, the maximum power limits of any unwanted emissions in the spurious domain are given in following table.

Frequency Ranges / State	47 to 74 MHz 87.5 to 108 MHz 174 to 230 MHz 470 to 862 MHz	Other frequencies ≤ 1000 MHz	Frequencies > 1000 MHz
Operating	4 nW	250 nW	1 µW
Standby	2 nW	2 nW	20 nW

EUT Setup

The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with ETSI EN 300 440. The specifications used were the ETSI EN 300 440 limits.

Test Procedure

According to ETSI EN 300 440 V2.2.1 (2018-07) §4.2.4.3

Test Data

Test Result: Compliant. *Pre-scan all test modes and the worst case as below:*

Radiated Emissions:

802.11 a_Low Channel

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
100.45	H	47.99	-64.25	0.00	0.26	-64.51	-54	10.51
106.47	V	48.95	-69.19	0.00	0.27	-69.46	-54	15.46
11490.00	H	47.02	-56.66	11.69	1.56	-46.53	-30.00	16.53
11490.00	V	46.65	-56.27	11.69	1.56	-46.14	-30.00	16.14
4666.80	H	51.20	-61.14	10.80	0.91	-51.25	-30.00	21.25
4667.80	V	60.10	-51.79	10.80	0.91	-41.90	-30.00	11.90

802.11 a_High Channel

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
103.65	H	46.85	-64.93	0.00	0.27	-65.20	-54	11.20
102.54	V	47.28	-71.34	0.00	0.27	-71.61	-54	17.61
11650.00	H	49.03	-54.68	11.55	1.58	-44.71	-30.00	14.71
11650.00	V	47.95	-55.11	11.55	1.58	-45.14	-30.00	15.14
4732.80	H	51.42	-60.69	10.72	0.91	-50.88	-30.00	20.88
4733.80	V	61.90	-49.82	10.72	0.91	-40.01	-30.00	10.01

Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

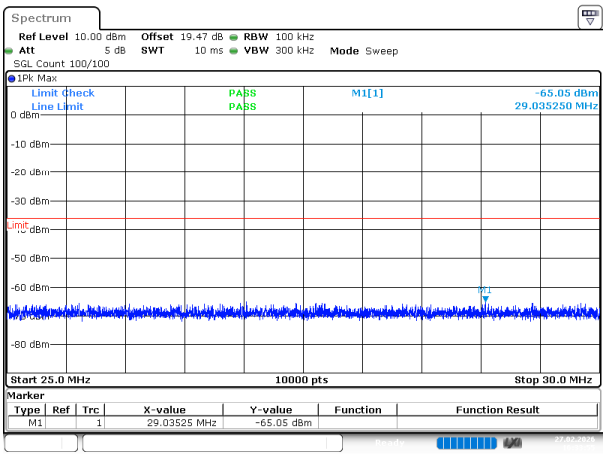
Conducted Emissions:

Mode	Freq.	Test Band (RBW)	Frequency (MHz)	Result (dBm)	Limit	Verdict
802.11a	5745	Band I (100kHz)	29.035	-65.05	See test graph	Pass
		Band II (100kHz)	914.883	-62.97	See test graph	Pass
		Band III (1MHz)	5385.160	-37.21	See test graph	Pass
	5825	Band I (100kHz)	27.523	-64.65	See test graph	Pass
		Band II (100kHz)	983.947	-62.11	See test graph	Pass
		Band III (1MHz)	5424.160	-36.99	See test graph	Pass
802.11n20	5745	Band I (100kHz)	28.525	-64.96	See test graph	Pass
		Band II (100kHz)	903.922	-62.43	See test graph	Pass
		Band III (1MHz)	5385.160	-37.75	See test graph	Pass
	5825	Band I (100kHz)	29.266	-65.28	See test graph	Pass
		Band II (100kHz)	926.135	-62.33	See test graph	Pass
		Band III (1MHz)	5460.040	-37.40	See test graph	Pass
802.11ac20	5745	Band I (100kHz)	25.587	-64.77	See test graph	Pass
		Band II (100kHz)	882.291	-62.96	See test graph	Pass
		Band III (1MHz)	5385.160	-36.46	See test graph	Pass
	5825	Band I (100kHz)	28.867	-64.77	See test graph	Pass
		Band II (100kHz)	946.408	-62.31	See test graph	Pass
		Band III (1MHz)	5460.040	-37.58	See test graph	Pass
802.11ax20	5745	Band I (100kHz)	29.691	-64.04	See test graph	Pass
		Band II (100kHz)	810.705	-61.99	See test graph	Pass
		Band III (1MHz)	5385.160	-37.70	See test graph	Pass
	5825	Band I (100kHz)	28.227	-64.27	See test graph	Pass
		Band II (100kHz)	833.694	-62.34	See test graph	Pass
		Band III (1MHz)	5460.040	-37.16	See test graph	Pass

Note:
Band I (100kHz): 25MHz~30MHz
Band II (100kHz): 30MHz~1GHz
Band III (1MHz): 1GHz~40GHz

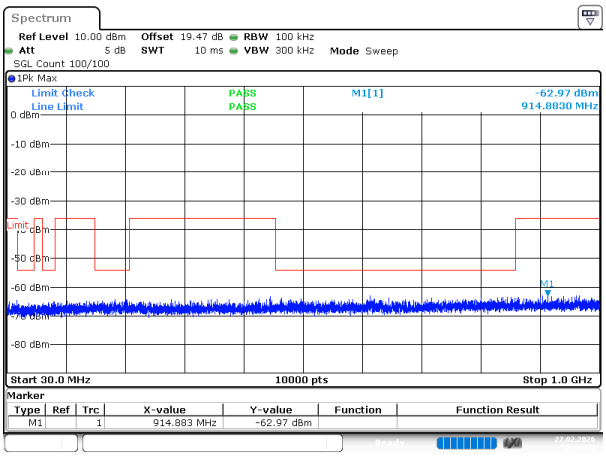
5725-5850MHz, Test Condition: NT/NV

802.11a_5745MHz(25MHz~30MHz)



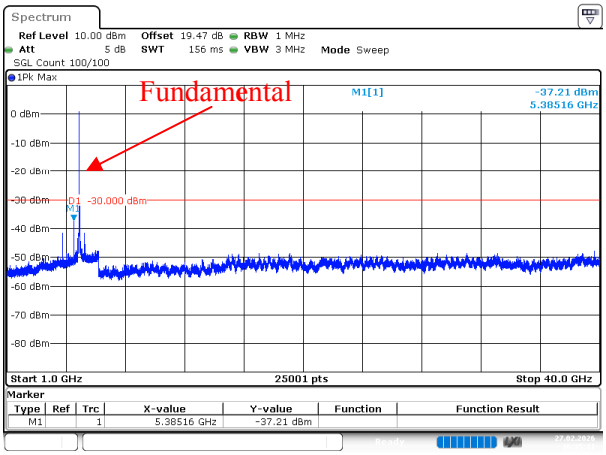
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802.11a_5745MHz(30MHz~1GHz)



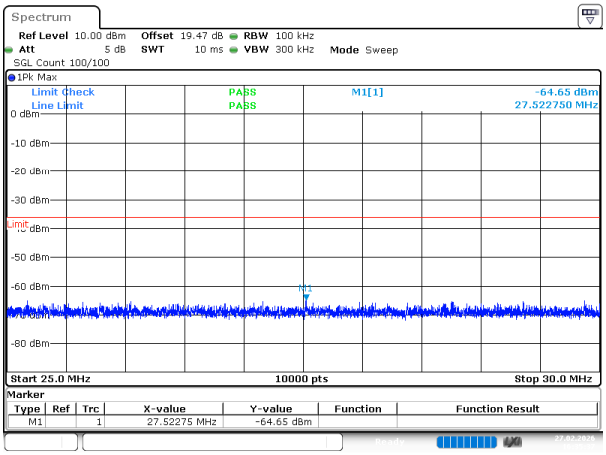
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802.11a_5745MHz(1GHz~40GHz)



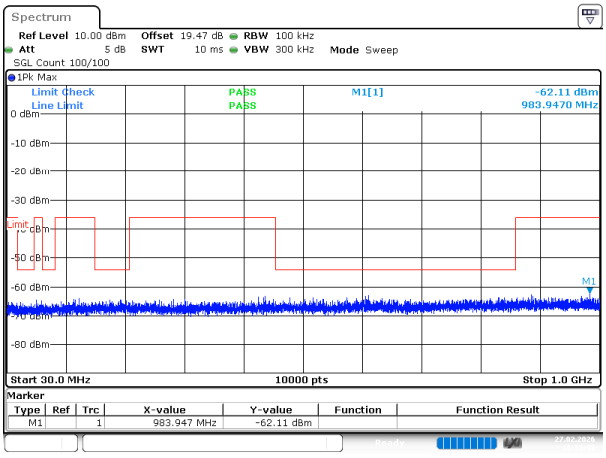
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802.11a_5825MHz(25MHz~30MHz)



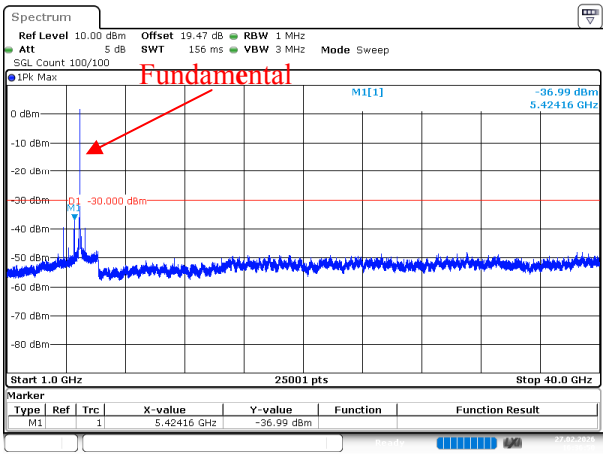
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802.11a_5825MHz(30MHz~1GHz)



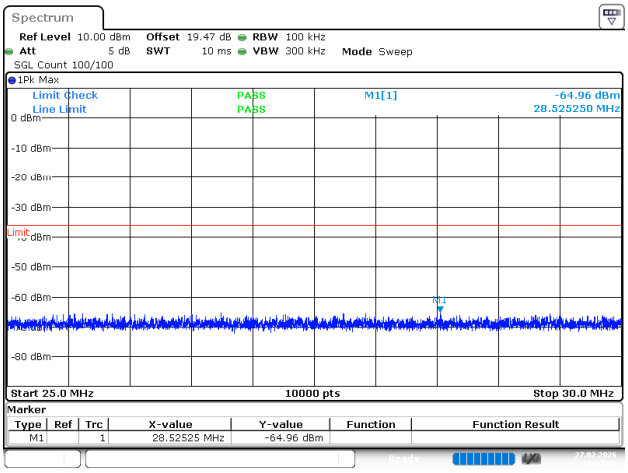
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802.11a_5825MHz(1GHz~40GHz)



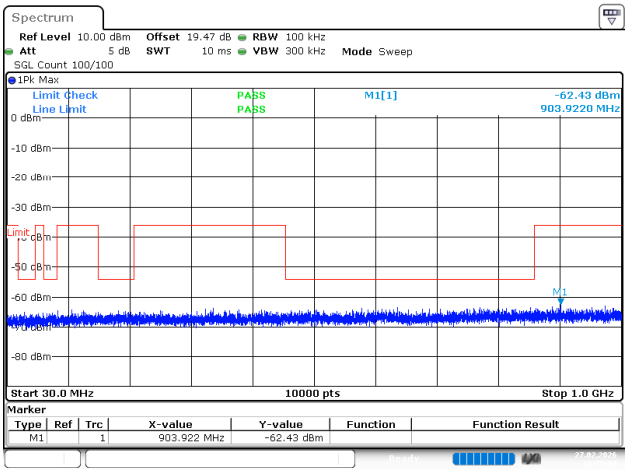
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802.11n20_5745MHz(25MHz~30MHz)



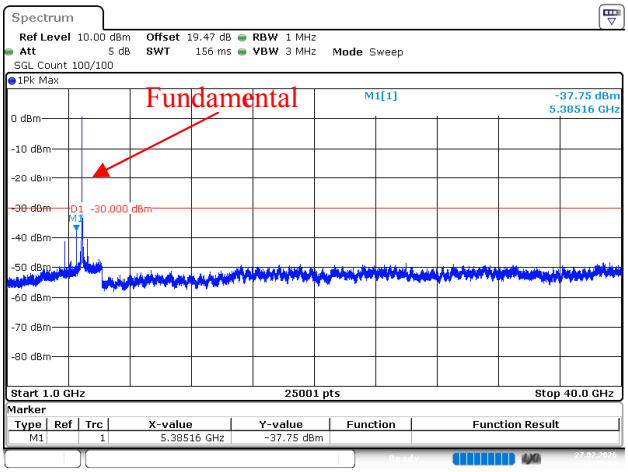
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802.11n20_5745MHz(30MHz~1GHz)



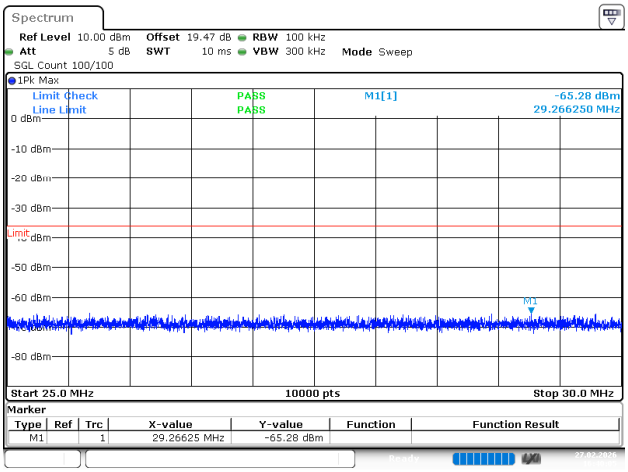
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802.11n20_5745MHz(1GHz~40GHz)



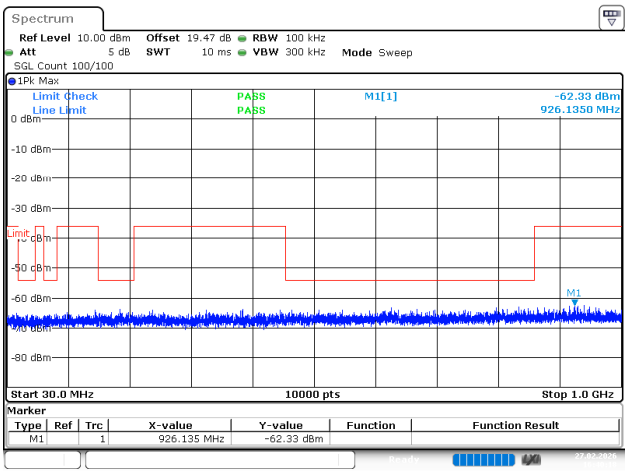
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802.11n20_5825MHz(25MHz~30MHz)



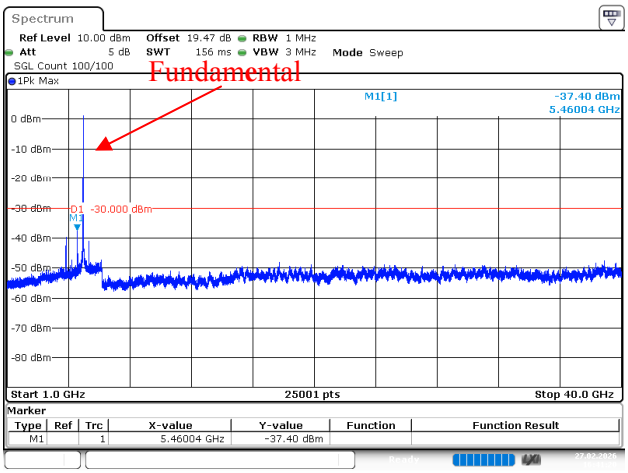
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802.11n20_5825MHz(30MHz~1GHz)



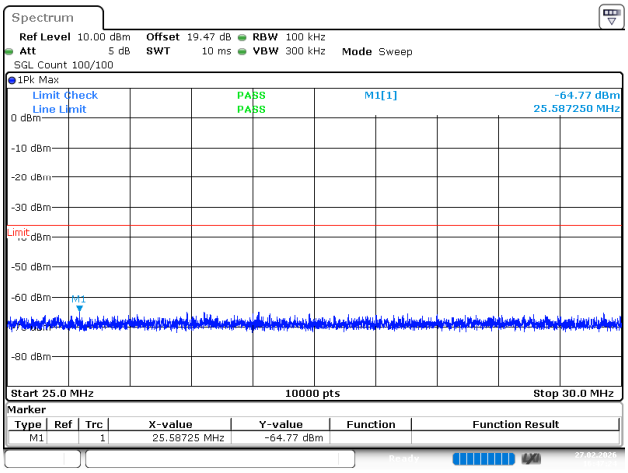
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802.11n20_5825MHz(1GHz~40GHz)



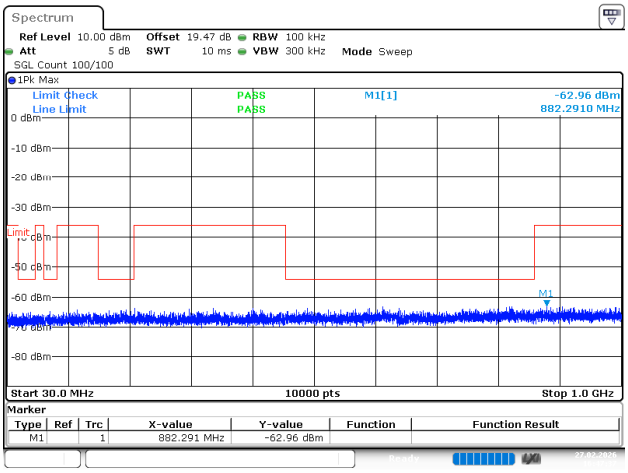
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802.11ac20_5745MHz(25MHz~30MHz)



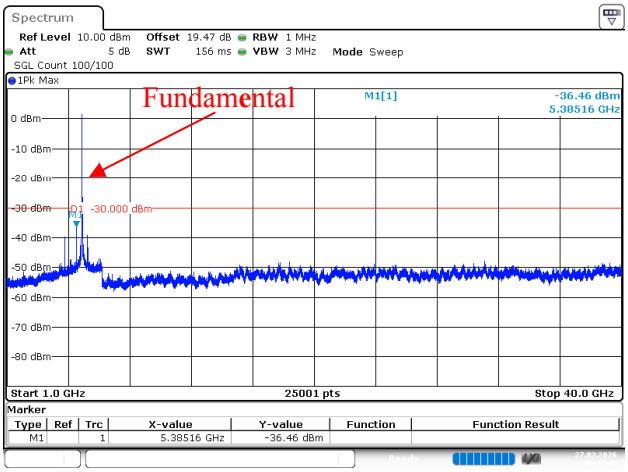
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802.11ac20_5745MHz(30MHz~1GHz)



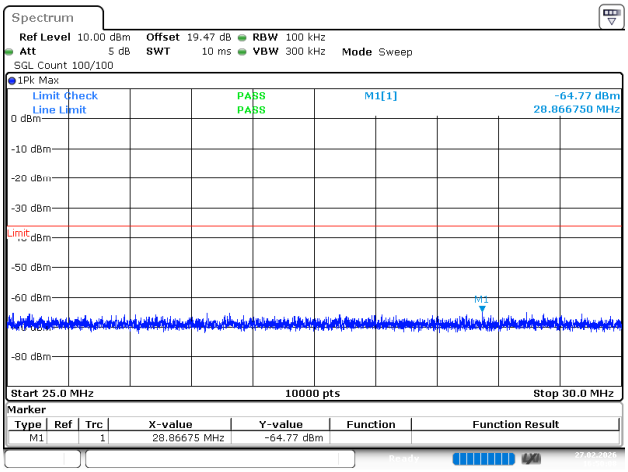
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802.11ac20_5745MHz(1GHz~40GHz)



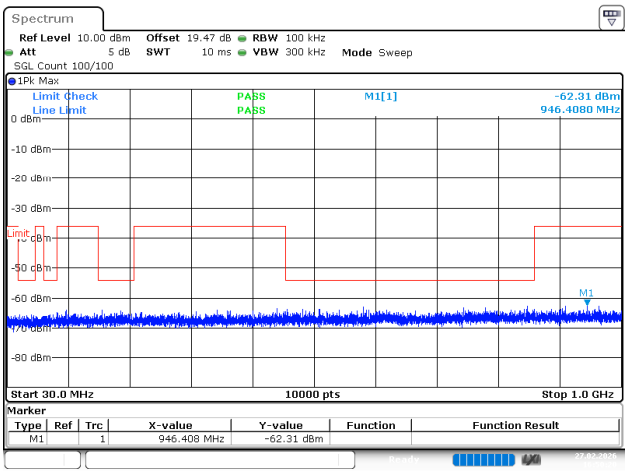
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802.11ac20_5825MHz(25MHz~30MHz)



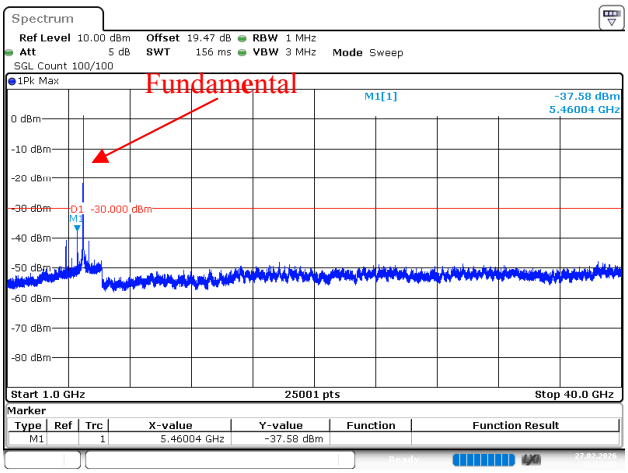
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802.11ac20_5825MHz(30MHz~1GHz)



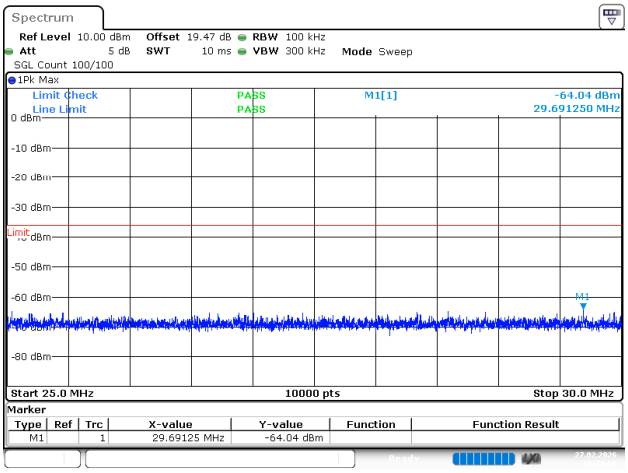
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802.11ac20_5825MHz(1GHz~40GHz)



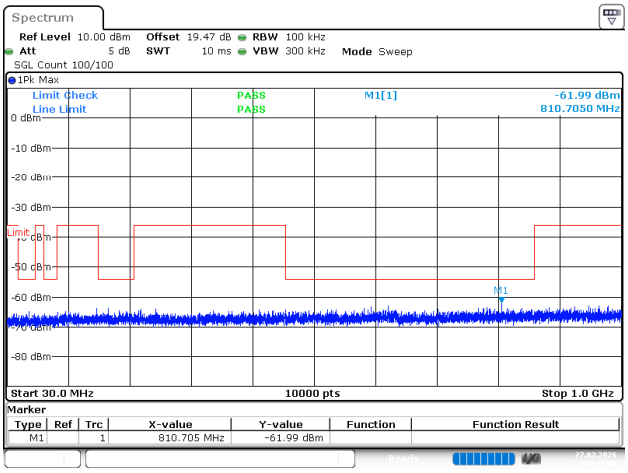
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802.11ax20_5745MHz_RU_Full(25MHz~30MHz)



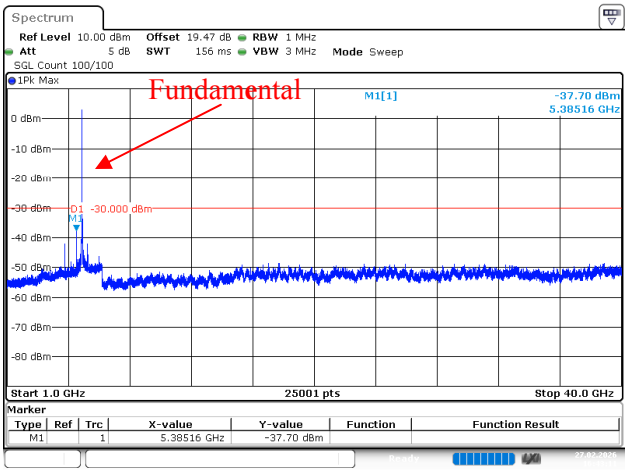
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802.11ax20_5745MHz_RU_Full(30MHz~1GHz)



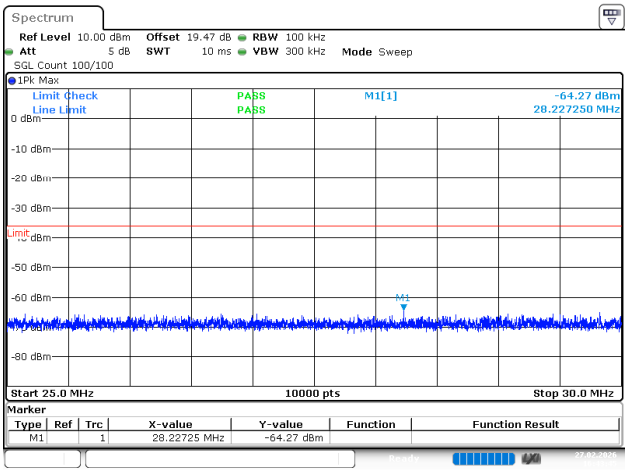
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802.11ax20_5745MHz_RU_Full(1GHz~40GHz)



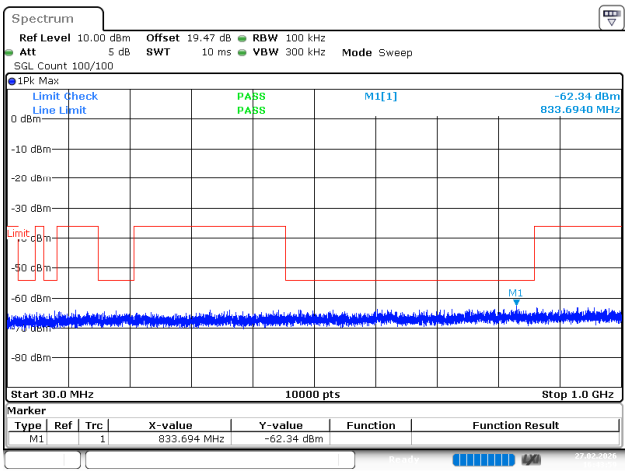
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802.11ax20_5825MHz_RU_Full(25MHz~30MHz)



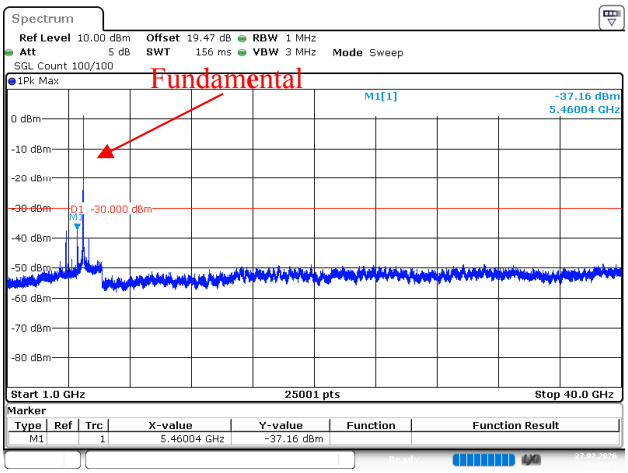
ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 27.FEB.2026 16:43:46

802.11ax20_5825MHz_RU_Full(30MHz~1GHz)



ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 27.FEB.2026 16:44:00

802.11ax20_5825MHz_RU_Full(1GHz~40GHz)



ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 27.FEB.2026 16:45:04

7 -BLOCKING OR DESENSITIZATION

Applicable Standard

According to EN 300 440§4.3.4, blocking is a measure of the capability of the receiver to receive a wanted modulated signal without exceeding a given degradation due to the presence of an unwanted input signal at any frequencies other than those of the spurious responses or the occupied bandwidth.

Limits:

The blocking level, for any frequency within the specified ranges, shall not be less than the values given in table 6, except at frequencies on which spurious responses are found.

Table 6: Limits for blocking or desensitization

Receiver category	Limit
1	-30 dBm + k
2	-45 dBm + k
3	-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

Where:

- f is the frequency in GHz;
- BW is the occupied bandwidth in MHz.

The factor k is limited within the following:

- -40 dB < k < 0 dB.

The measured blocking level shall be stated in the test report.

Test Procedure

According to ETSI EN 300 440 V2.2.1 (2018-07) §4.3.4.3

Test Data

Test Result: Compliant. *EUT operation mode: Receiving (802.11a was the worst). Please refer to following table:*

Frequency (MHz)	BW (MHz)	Blocking Signal Frequency (MHz)		Blocking Signal (dBm)		Limit (dBm)
5745	16.36	5573.22	5916.78	-65	-68	-72.32
		5409.62	6080.38	-63	-69	-72.32
		4918.82	6571.18	-66	-67	-72.32
5825	16.40	5652.8	5997.2	-67	-63	-72.45
		5488.8	6161.2	-62	-61	-72.45
		4996.8	6653.2	-60	-63	-72.45

Note: CMW500 was used to monitor PER

8 - SPURIOUS EMISSION

Applicable Standard

According to EN 300 440§4.3.5, the power of any spurious emission shall not exceed 2 nW in the range 25 MHz to 1 GHz and shall not exceed 20 nW on frequencies above 1 GHz.

EUT Setup

The radiated emission tests were performed in the 3-meter Chamber, using the setup accordance with ETSI EN 300 440. The specifications used were the ETSI EN 300 440 limits.

Test Procedure

According to ETSI EN 300 440 V2.2.1 (2018-07) §4.3.5.3

Test Data

Test Result: Compliant. *Pre-scan all test modes and the worst case as below:*

Radiated Emissions:

802.11 a_Low Channel

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
107.46	H	39.66	-71.57	0.00	0.28	-71.85	-57.00	14.85
90.28	V	40.40	-78.51	0.00	0.36	-78.87	-57.00	21.87
1680.97	H	49.89	-66.16	9.49	0.45	-57.12	-47.00	10.12
1597.78	V	51.78	-65.82	9.36	0.42	-56.88	-47.00	9.88

802.11 a_High Channel

Frequency (MHz)	Polar (H/V)	Receiver Reading (dBµV)	Substituted Method			Absolute Level (dBm)	Limit (dBm)	Margin (dB)
			Substituted Level (dBm)	Antenna Gain (dBd/dBi)	Cable Loss (dB)			
91.64	H	41.65	-74.19	0.00	0.34	-74.53	-57.00	17.53
99.74	V	40.47	-78.46	0.00	0.26	-78.72	-57.00	21.72
1689.85	H	50.27	-65.75	9.50	0.45	-56.70	-47.00	9.70
1595.98	V	51.76	-65.81	9.35	0.42	-56.88	-47.00	9.88

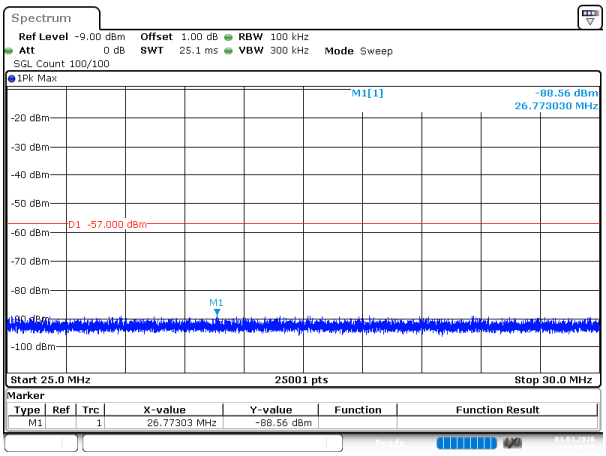
Note 1: The unit of antenna gain is dBd for frequency below 1GHz and is dBi for frequency above 1GHz.
Note 2:
Absolute Level = Substituted Level - Cable loss + Antenna Gain
Margin = Limit- Absolute Level

Conducted Emissions:

Mode	Freq.	Test Band (RBW)	Frequency Range		Result (dBm)	Result (nW)	Limit (nW)	Verdict
			Start(MHz)	Stop(MHz)				
802.11a	5745	Band I (100kHz)	25	30	-88.56	0.001	2	Pass
		Band III (100kHz)	30	1000	-85.94	0.003	2	Pass
		Band IV (1MHz)	1000	40000	-68.45	0.143	20	Pass
	5825	Band I (100kHz)	25	30	-88.38	0.001	2	Pass
		Band II (100kHz)	30	1000	-85.50	0.003	2	Pass
		Band III (1MHz)	1000	40000	-68.83	0.131	20	Pass
802.11n20	5745	Band I (100kHz)	25	30	-87.65	0.002	2	Pass
		Band II (100kHz)	30	1000	-82.63	0.005	2	Pass
		Band III (1MHz)	1000	40000	-67.77	0.167	20	Pass
	5825	Band I (100kHz)	25	30	-88.24	0.001	2	Pass
		Band II (100kHz)	30	1000	-86.13	0.002	2	Pass
		Band III (1MHz)	1000	40000	-68.35	0.146	20	Pass
802.11ac20	5745	Band I (100kHz)	25	30	-88.10	0.002	2	Pass
		Band II (100kHz)	30	1000	-79.47	0.011	2	Pass
		Band III (1MHz)	1000	40000	-68.40	0.145	20	Pass
	5825	Band I (100kHz)	25	30	-88.35	0.001	2	Pass
		Band II (100kHz)	30	1000	-83.57	0.004	2	Pass
		Band III (1MHz)	1000	40000	-68.44	0.143	20	Pass
802.11ax20	5745	Band I (100kHz)	25	30	-88.31	0.001	2	Pass
		Band II (100kHz)	30	1000	-86.60	0.002	2	Pass
		Band III (1MHz)	1000	40000	-68.04	0.157	20	Pass
	5825	Band I (100kHz)	25	30	-87.67	0.002	2	Pass
		Band II (100kHz)	30	1000	-85.13	0.003	2	Pass
		Band III (1MHz)	1000	40000	-68.22	0.151	20	Pass

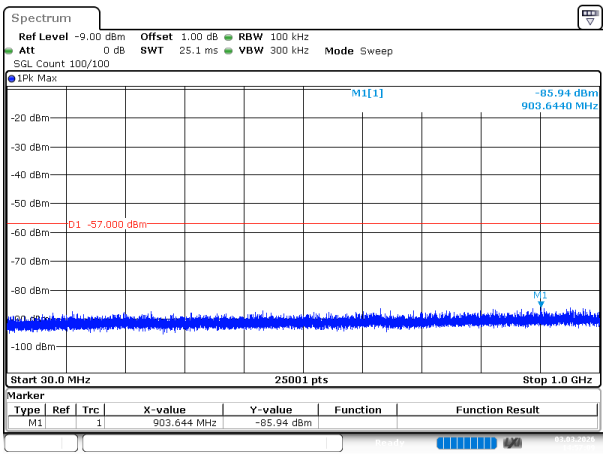
5725-5850MHz, Test Condition: NT/NV

802.11a_5745MHz(25MHz~30MHz)



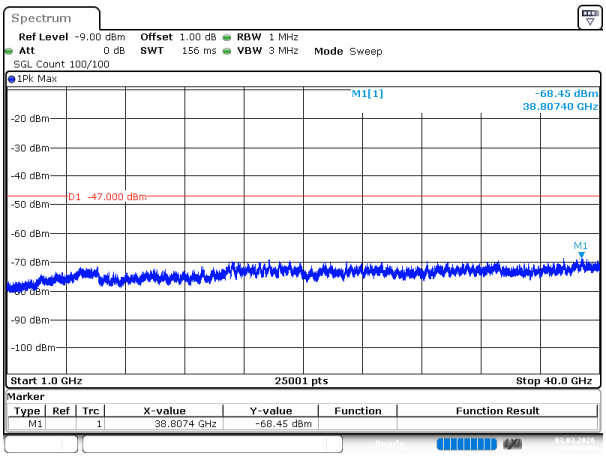
ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 3.MAR.2026 14:56:57

802.11a_5745MHz(30MHz~1GHz)



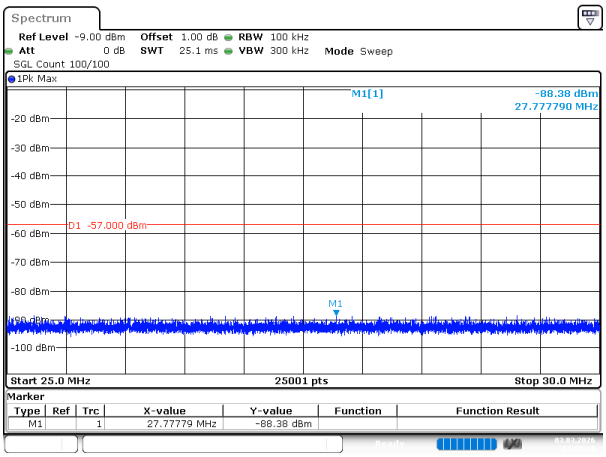
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802.11a_5745MHz(1GHz~40GHz)



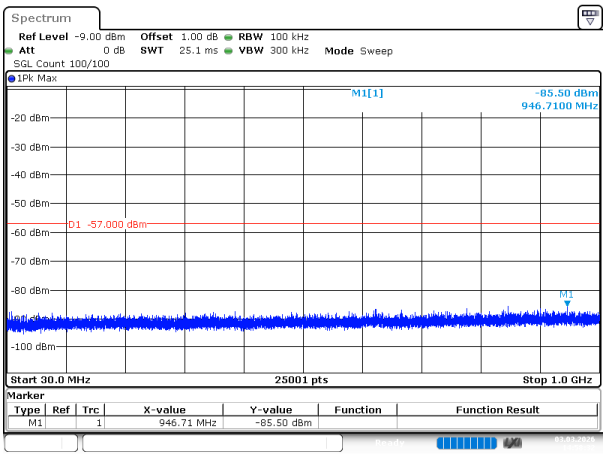
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802.11a_5825MHz(25MHz~30MHz)



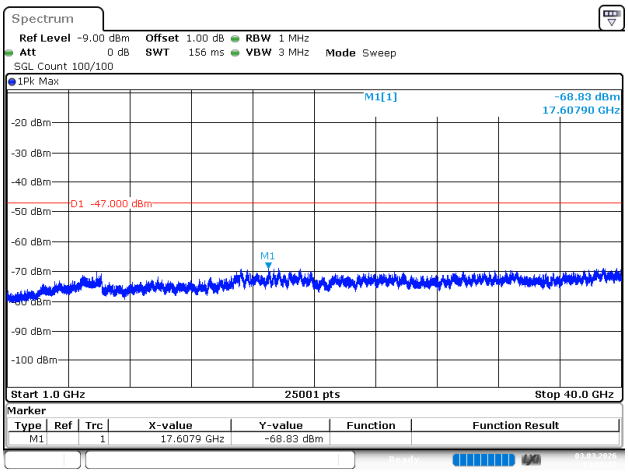
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802.11a_5825MHz(30MHz~1GHz)



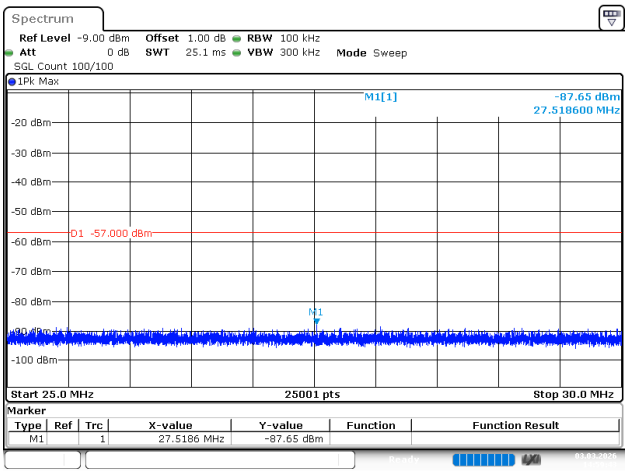
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802.11a_5825MHz(1GHz~40GHz)



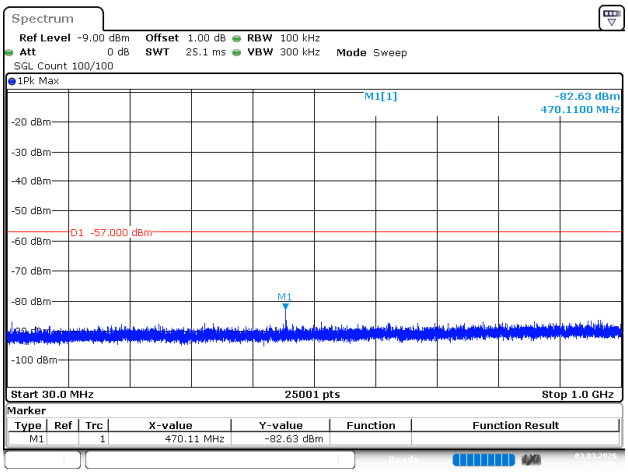
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Date: 3.MAR.2026 14:59:31

802.11n20_5745MHz(25MHz~30MHz)



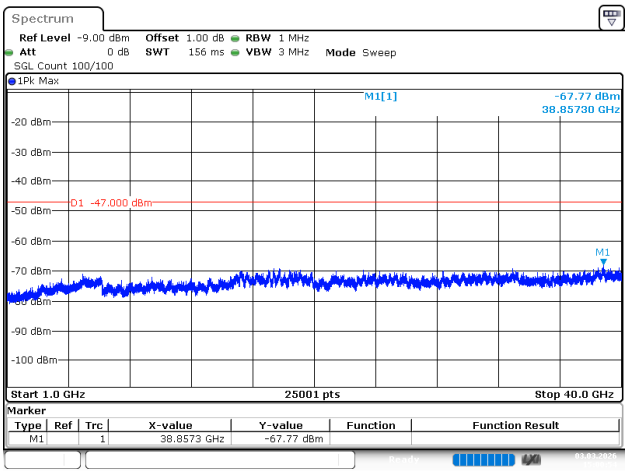
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Date: 3.MAR.2026 14:59:43

802.11n20_5745MHz(30MHz~1GHz)



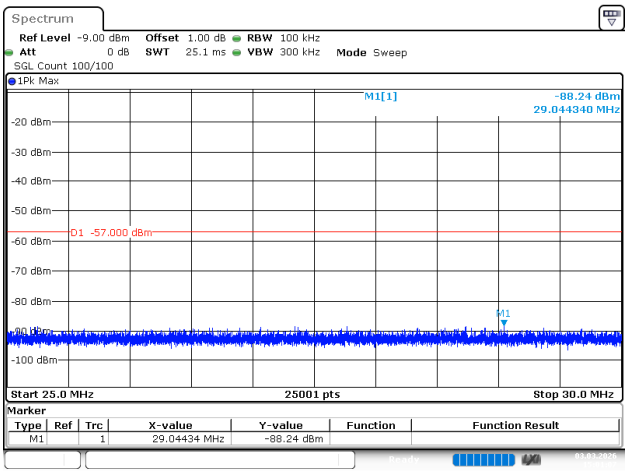
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802.11n20_5745MHz(1GHz~40GHz)



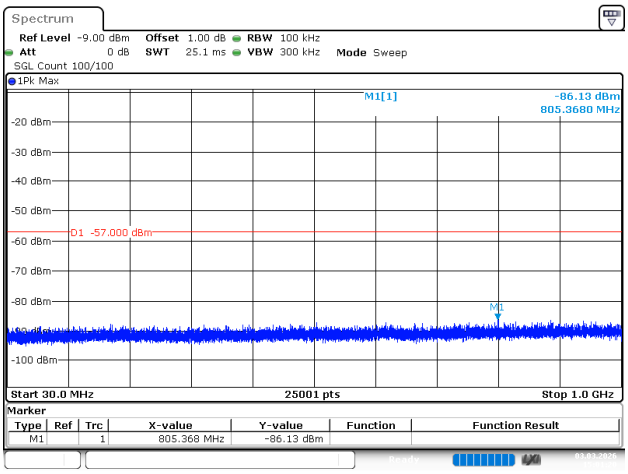
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802.11n20_5825MHz(25MHz~30MHz)



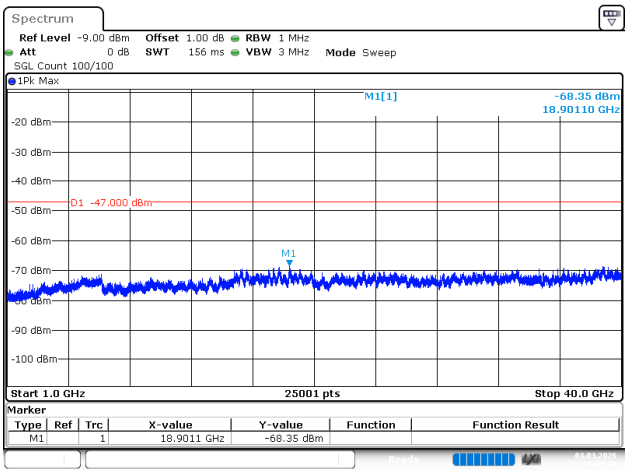
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802.11n20_5825MHz(30MHz~1GHz)



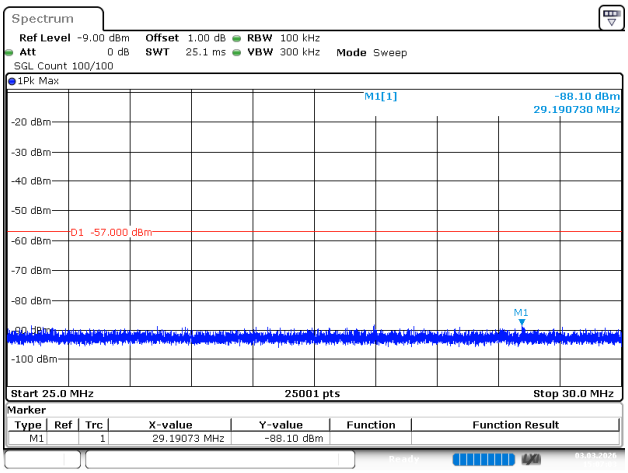
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802.11n20_5825MHz(1GHz~40GHz)



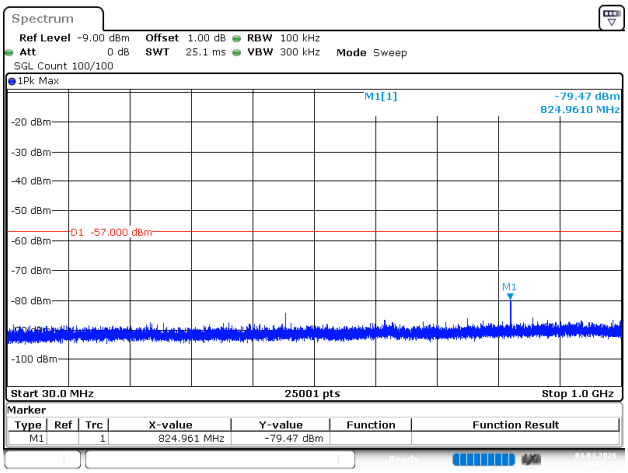
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Date: 3.MAR.2026 15:02:20

802.11ac20_5745MHz(25MHz~30MHz)



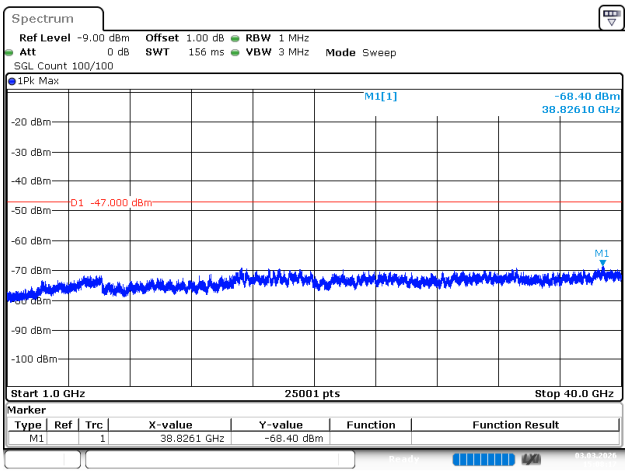
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Date: 3.MAR.2026 15:07:03

802.11ac20_5745MHz(30MHz~1GHz)



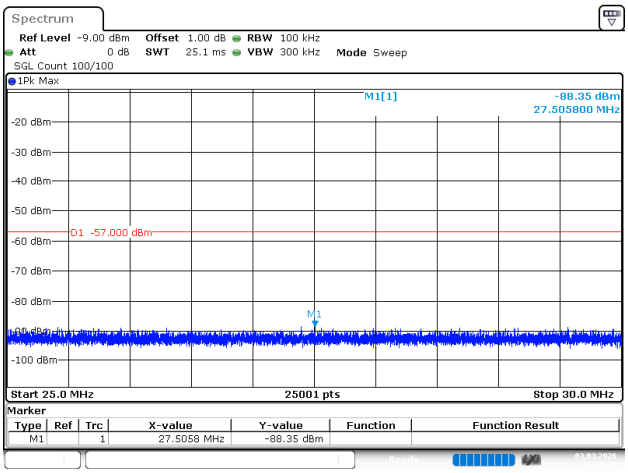
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Date: 3.MAR.2026 15:07:17

802.11ac20_5745MHz(1GHz~40GHz)



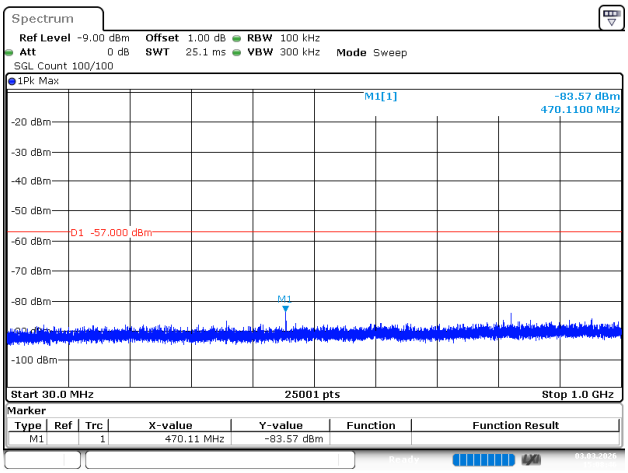
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802.11ac20_5825MHz(25MHz~30MHz)



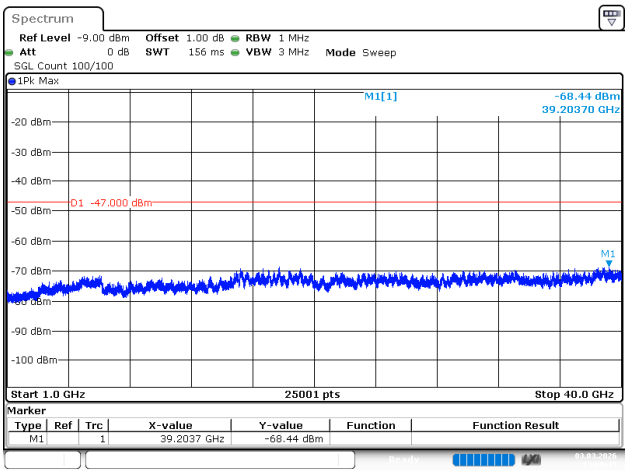
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802.11ac20_5825MHz(30MHz~1GHz)



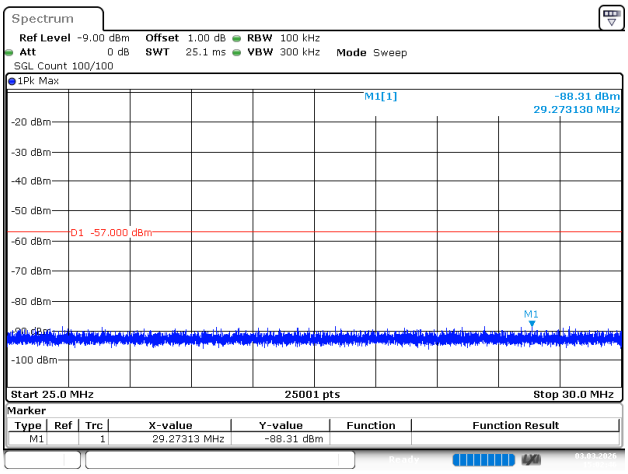
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802.11ac20_5825MHz(1GHz~40GHz)



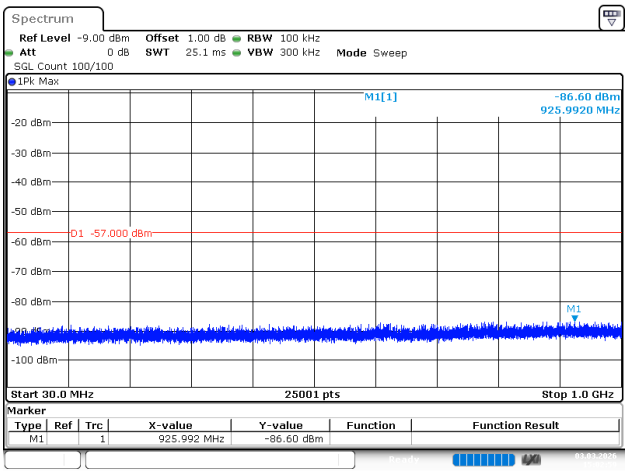
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802.11ax20_5745MHz_RU_Full(25MHz~30MHz)



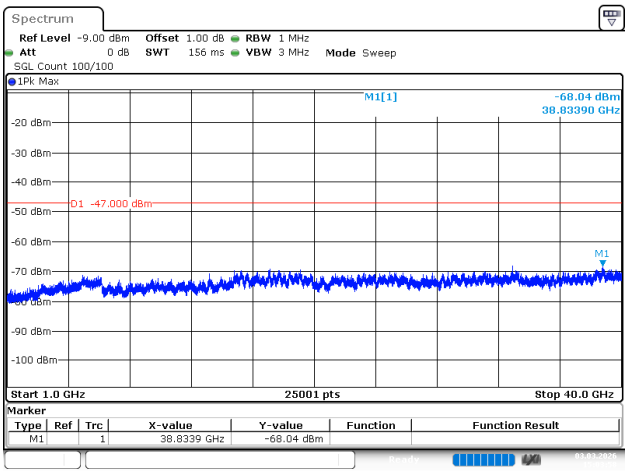
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Date: 3.MAR.2026 15:02:46

802.11ax20_5745MHz_RU_Full(30MHz~1GHz)



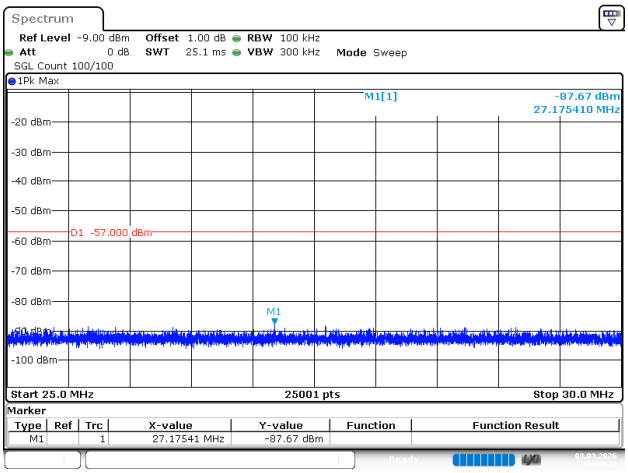
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802.11ax20_5745MHz_RU_Full(1GHz~40GHz)



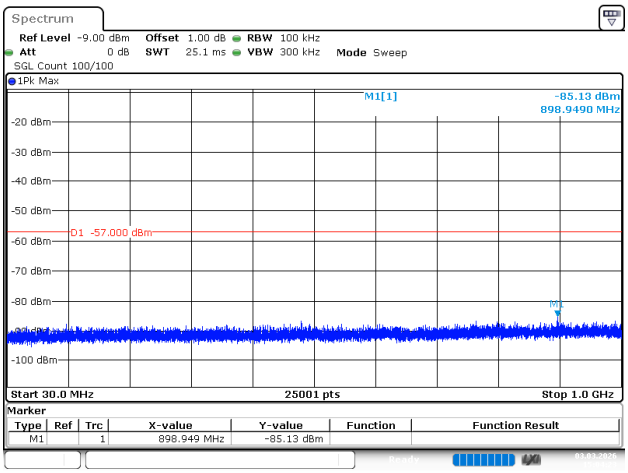
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802.11ax20_5825MHz_RU_Full(25MHz~30MHz)



ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 3.MAR.2026 15:04:11

802.11ax20_5825MHz_RU_Full(30MHz~1GHz)



ProjectNo.:2602P42655E-RF Tester:Cooper Zhou
Date: 3.MAR.2026 15:04:23

802.11ax20_5825MHz_RU_Full(1GHz~40GHz)

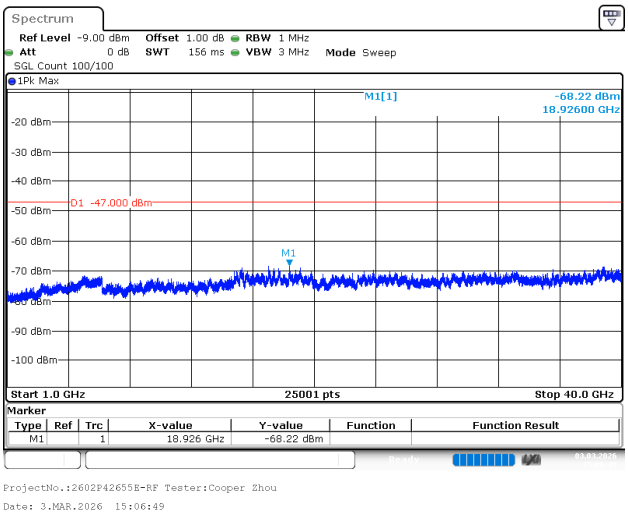
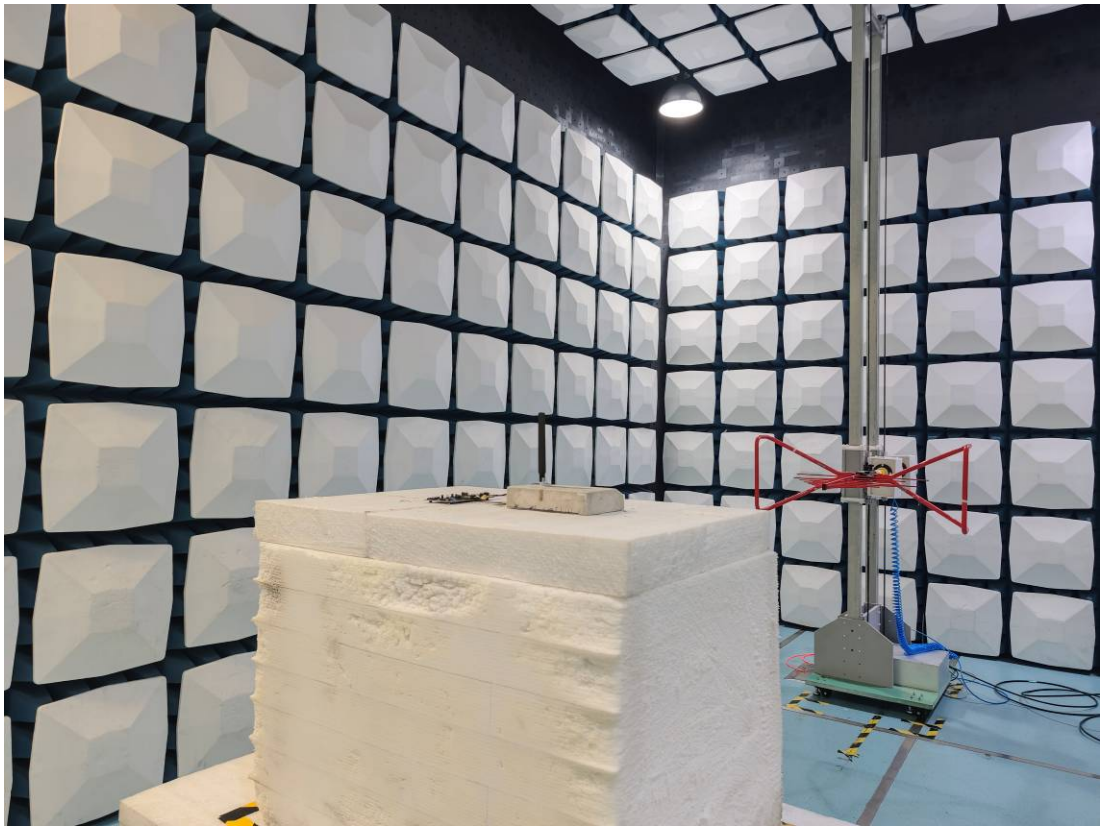


EXHIBIT A - EUT PHOTOGRAPHS

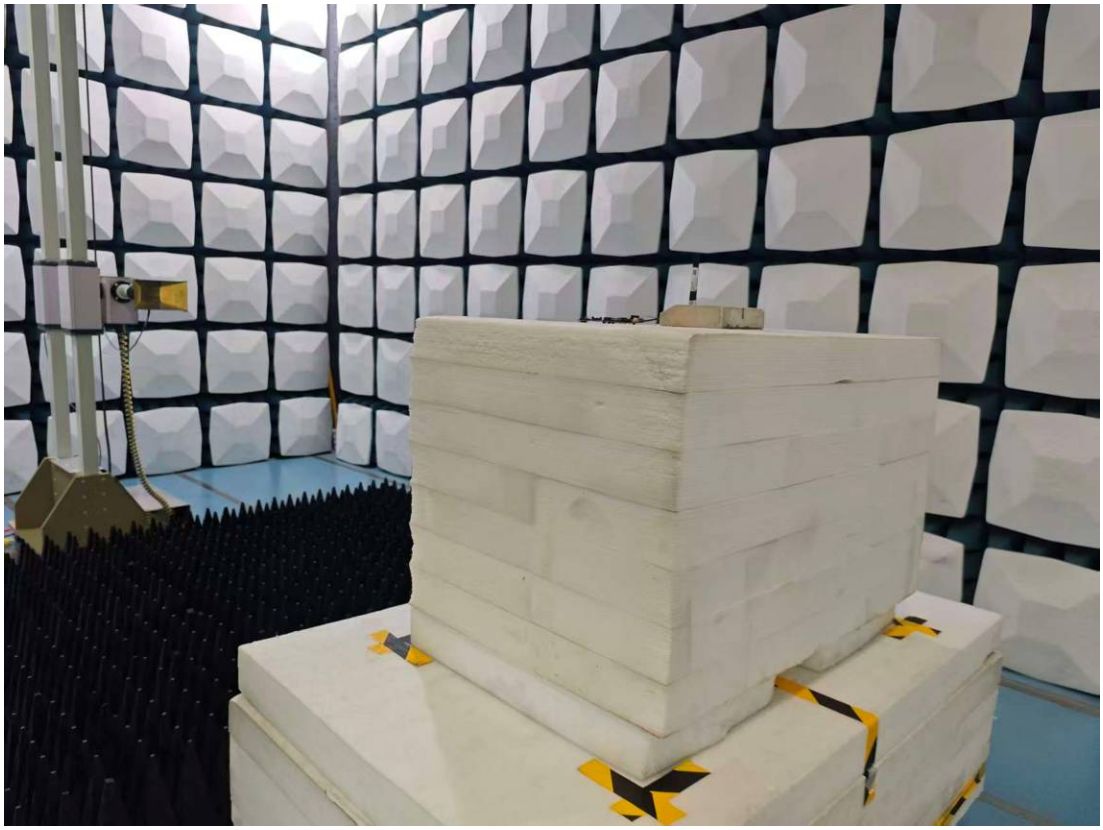
For photos in this section, please refer to report No.: 2602P42655E-22A EXHIBIT A.

EXHIBIT B - TEST SETUP PHOTOGRAPHS

Radiated Emissions Below 1GHz View



Radiated Emissions Above 1GHz View



DECLARATION OF SIMILARITY LETTER

Renesas Design Korea Inc.
Add: 7th SiliconPark, 35 Pangyo-ro 255 beon-gil Bundang-gu, Seongnam-si, Gyeonggi-do, 13486 Republic of Korea
Tel: + 82-2-567-1903
Email: kn.kim.pv@renesas.com

DECLARATION OF SIMILARITY

Date: 2026-01-19

To whom it may concern

Dear Sir or Madam:

We, Renesas Design Korea Inc., hereby declare that the product, named RRQ61001 Module, model RRQ61001-010 is electrically similar with the model RRQ61001-009 which was tested by Bay Area Compliance Laboratories Corp.(Dongguan).

The differences between those models and that are declared similar are as follows:

Model	Difference		Other
RRQ61001-009		With external antenna port	Only the different model name and with or without external antenna port. The software is same.
RRQ61001-010		Without external antenna port	

Please contact me should there be need for any additional clarification or information.

Best Regards,

Signature:
Printed Name: Kui Nam Kim
Title: Vice President

*******END OF REPORT*******