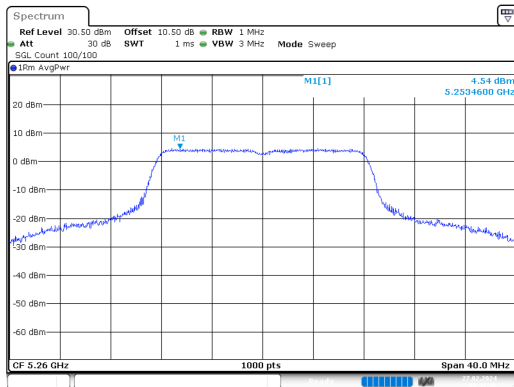


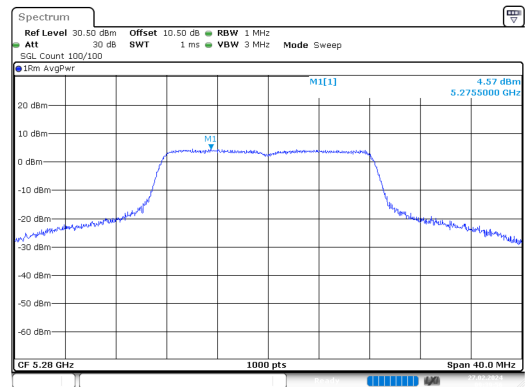
5250-5350 MHz:

a_5260MHz_Chain 0



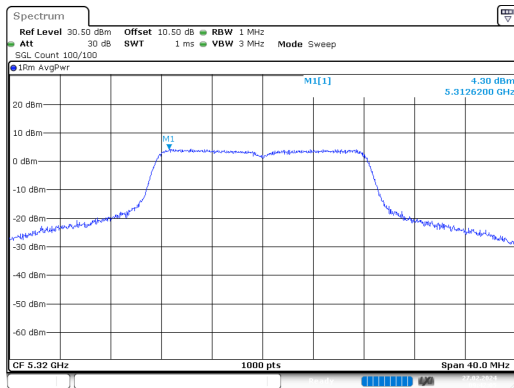
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:37:46

a_5280MHz_Chain 0



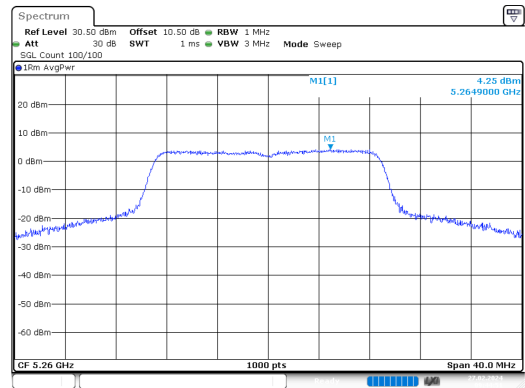
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:19:57

a_5320MHz_Chain 0



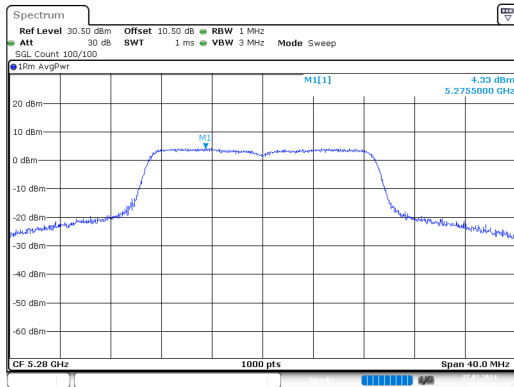
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:42:06

n20_5260MHz_Chain 0



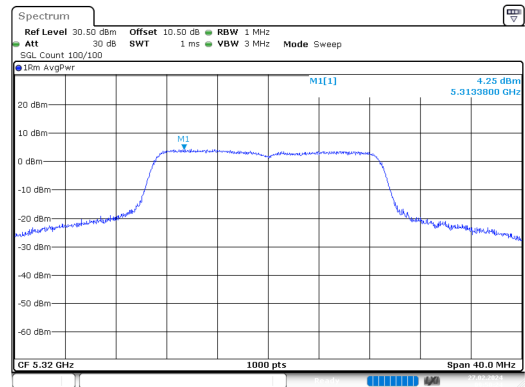
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:44:52

n20_5280MHz_Chain 0



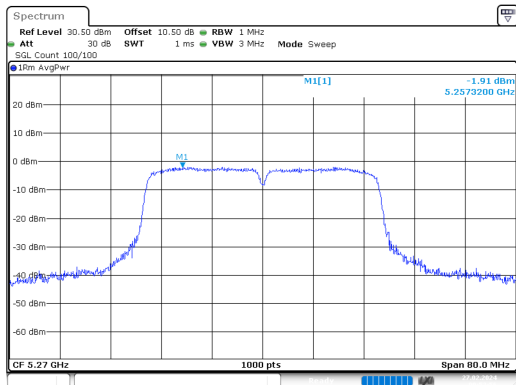
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:48:01

n20_5320MHz_Chain 0



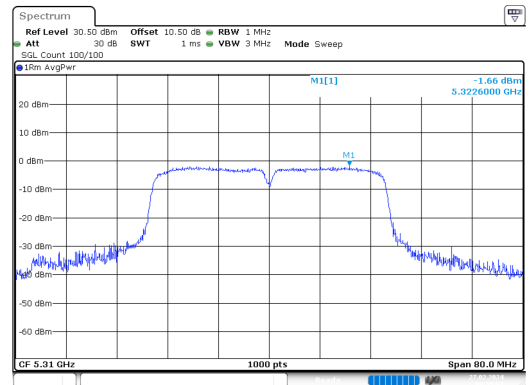
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:50:25

n40_5270MHz_Chain 0



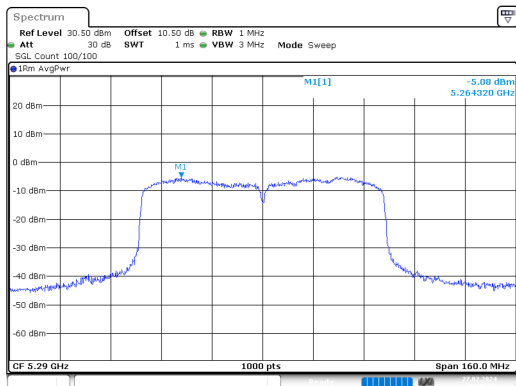
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:52:57

n40_5310MHz_Chain 0



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:55:08

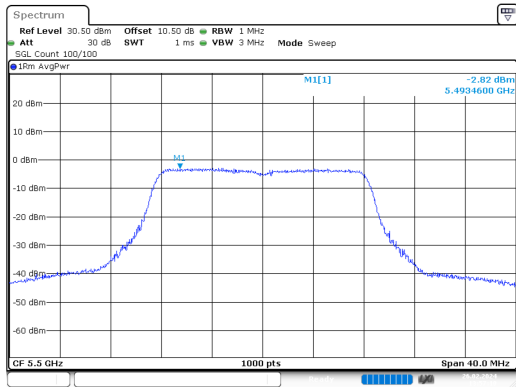
ac80_5290MHz_Chain 0



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 27.FEB.2024 09:58:54

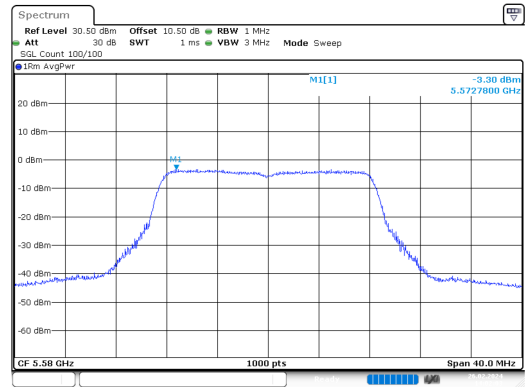
5470-5725 MHz:

a_5500MHz_Chain 0



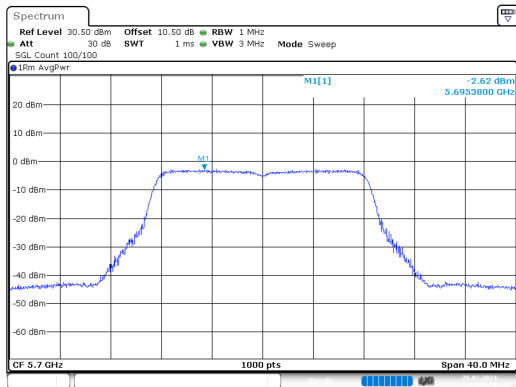
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 13:57:11

a_5580MHz_Chain 0



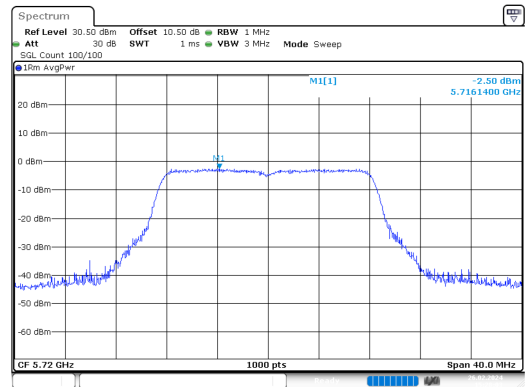
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 14:02:04

a_5700MHz_Chain 0



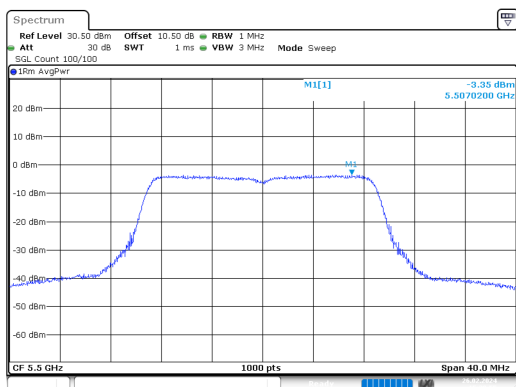
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 14:05:50

a_5720MHz_Chain 0



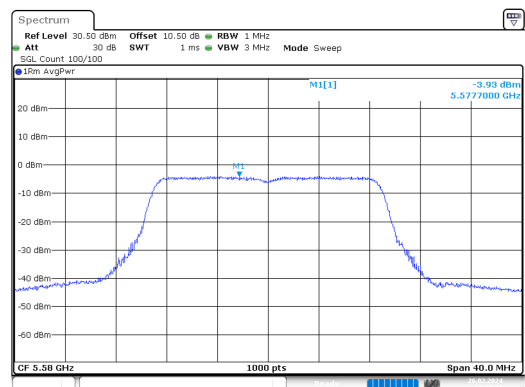
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 15:28:04

n20_5500MHz_Chain 0



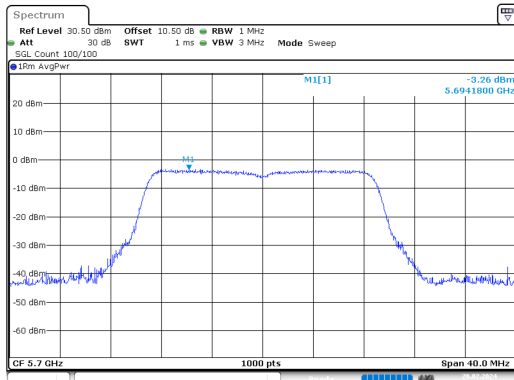
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 15:39:56

n20_5580MHz_Chain 0

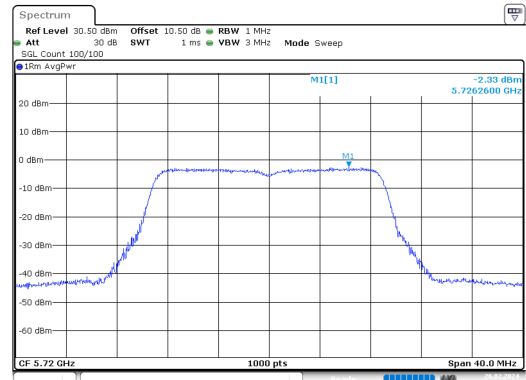


ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 14:29:42

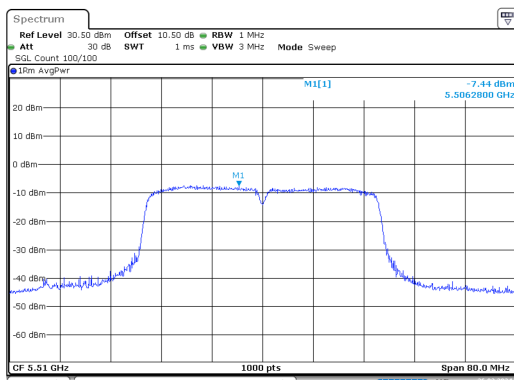
n20_5700MHz_Chain 0



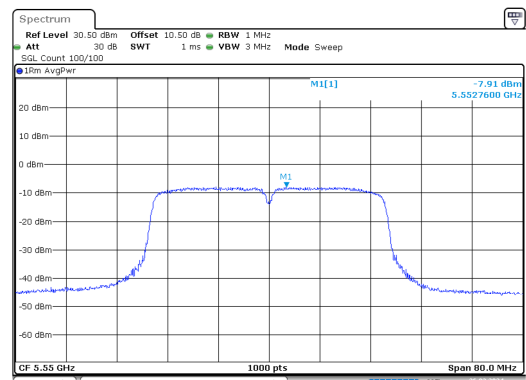
n20_5720MHz_Chain 0



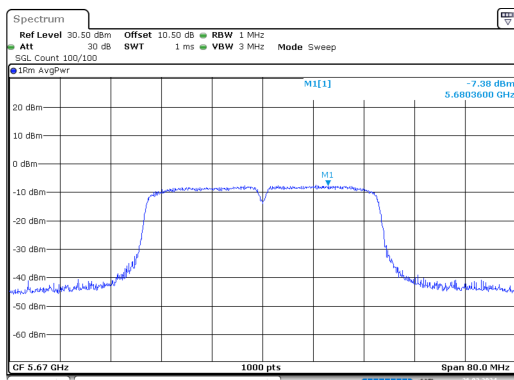
n40_5510MHz_Chain 0



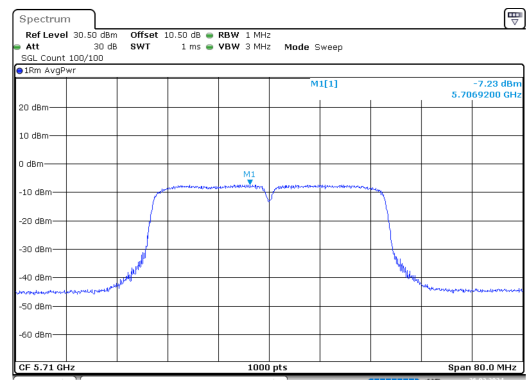
n40_5550MHz_Chain 0



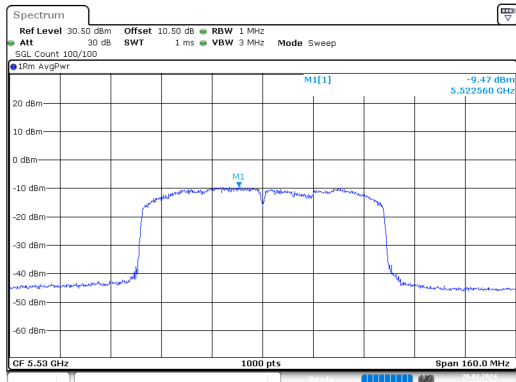
n40_5670MHz_Chain 0



n40_5710MHz_Chain 0

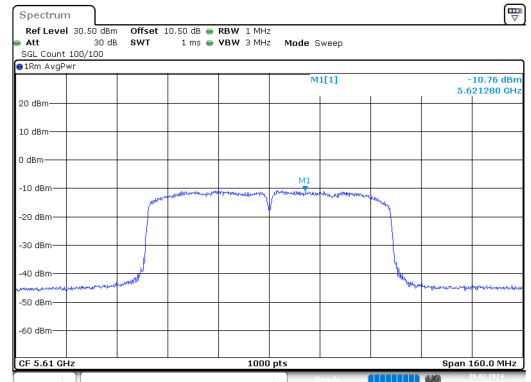


ac80_5530MHz_Chain 0



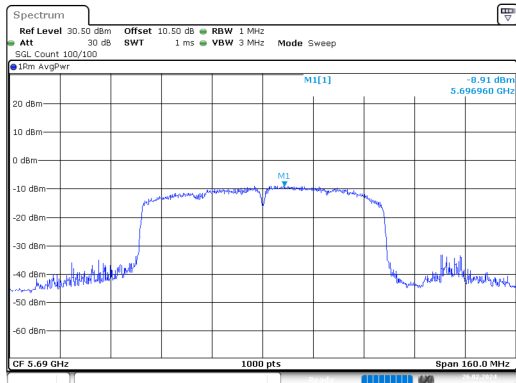
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 17:14:29

ac80_5610MHz_Chain 0



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 17:19:38

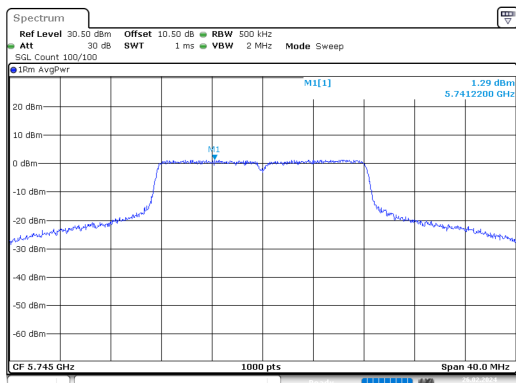
ac80_5690MHz_Chain 0



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 17:23:18

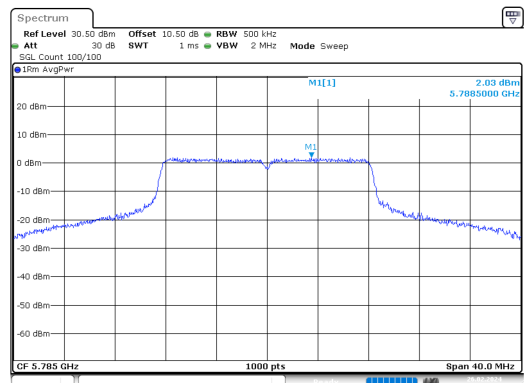
5725-5850 MHz:

a_5745 MHz_Chain 0



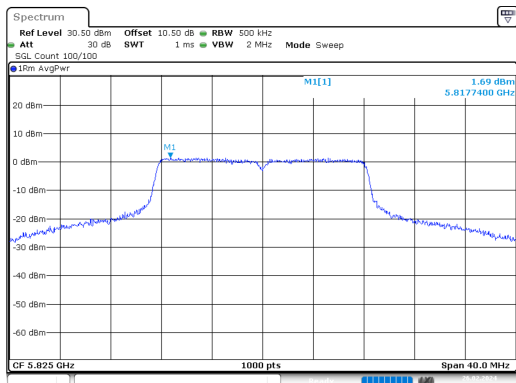
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 11:14:25

a_5785MHz_Chain 0



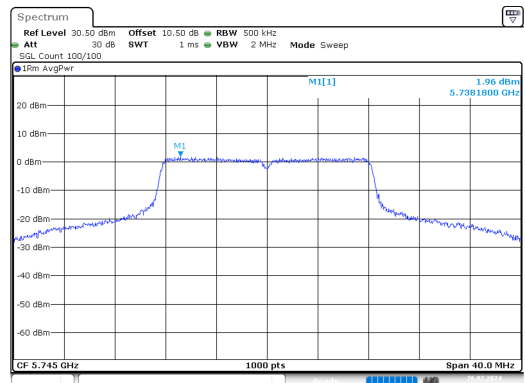
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 11:10:16

a_5825MHz_Chain 0



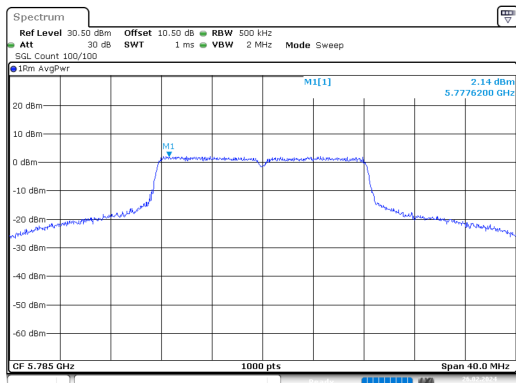
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 11:03:58

n20_5745MHz_Chain 0



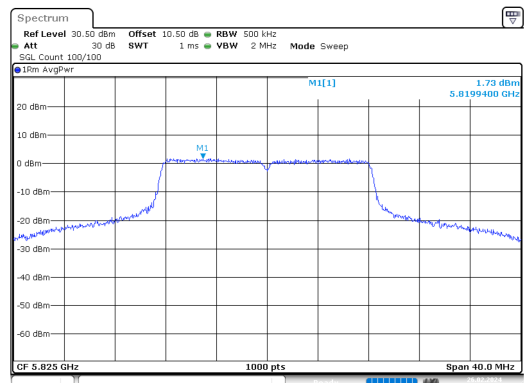
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 10:42:55

n20_5785MHz_Chain 0



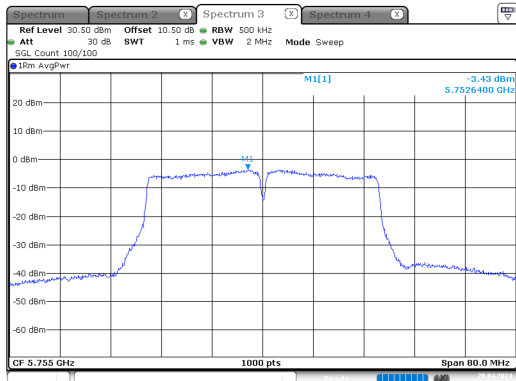
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 10:36:20

n20_5825MHz_Chain 0



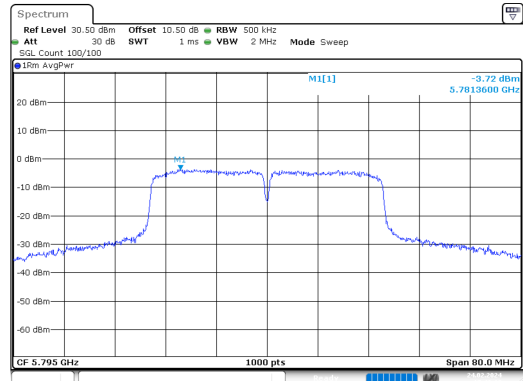
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 26.FEB.2024 10:29:08

n40_5755MHz_Chain 0



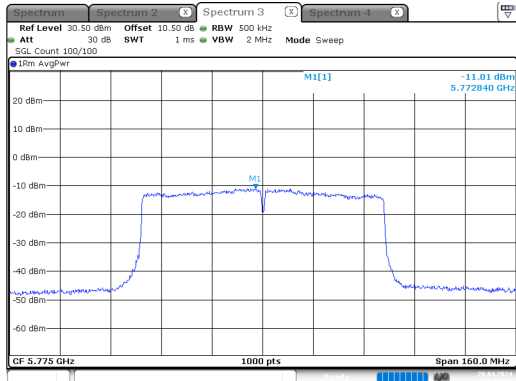
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 28.APR.2024 18:06:10

n40_5795MHz_Chain 0



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 24.FEB.2024 17:43:12

ac80_5775MHz_Chain 0



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 28.APR.2024 18:06:50

5.7 Duty Cycle

Serial No.:	2EB1-1	Test Date:	2024/02/22~2024/02/26
Test Site:	RF	Test Mode:	Transmitting
Tester:	Jojo Zhou	Test Result:	/

Environmental Conditions:

Temperature: (°C)	24.2	Relative Humidity: (%)	39	ATM Pressure: (kPa)	100.9
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Test Equipment List and Details:

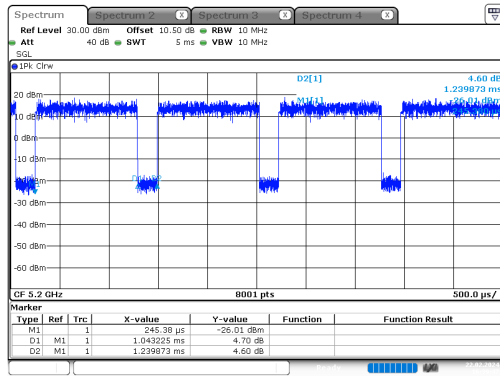
Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101947	2023/10/18	2024/10/17
E-Microwave	Coaxial Attenuators	EMCA10-5RN-6	OE01203239	2023/09/01	2024/08/31

* 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).

Test Data:

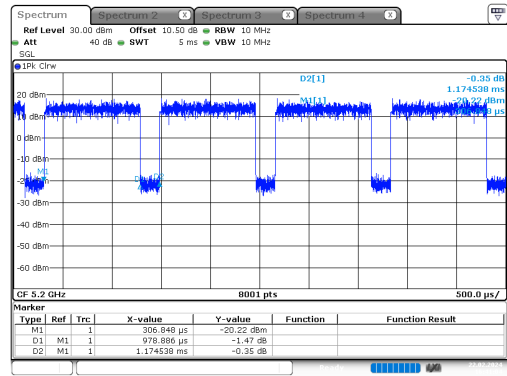
Test Modes	Ton (ms)	Ton+off (ms)	Duty cycle (%)	1/T (Hz)	Duty cycle Factor (dB)	VBW Setting (kHz)
a_Chain 0	1.043	1.240	84.11	959	0.75	1
n20_Chain 0	0.979	1.175	83.32	1021	0.79	2
n40_Chain 0	0.490	0.688	71.22	2041	1.47	3
ac80_Chain 0	0.249	0.447	55.70	4016	2.54	5

802.11a



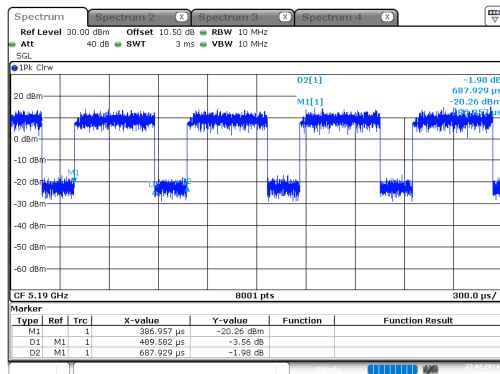
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 22.FEB.2024 16:39:47

802.11n20



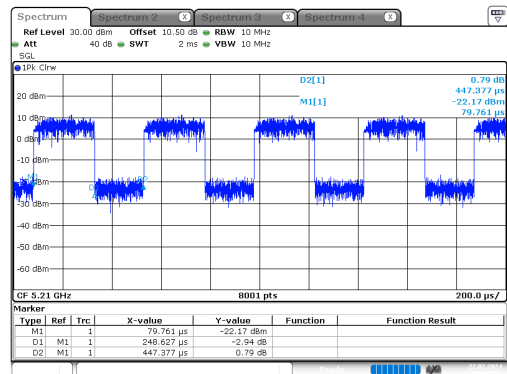
ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 22.FEB.2024 16:41:04

802.11n40



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 22.FEB.2024 16:42:58

802.11ac80



ProjectNo.:XMDN231122-69423E-RF Tester:Jojo Zhou
Date: 22.FEB.2024 16:45:25

APPENDIX A - EUT PHOTOGRAPHS

Please refer to the attachment XMDN231122-69423E-RF-EXP EUT EXTERNAL PHOTOGRAPHS and XMDN231122-69423E-RF-INP EUT INTERNAL PHOTOGRAPHS.

APPENDIX B - TEST SETUP PHOTOGRAPHS

Please refer to the attachment XMDN231122-69423E-RF-00C-TSP TEST SETUP PHOTOGRAPHS.

APPENDIX C - RF EXPOSURE EVALUATION

Maximum Permissible Exposure (MPE)

Applicable Standard

According to subpart §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy level in excess of the Commission’s guidelines.

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculation formula:

Prediction of power density at the distance of the applicable MPE limit

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

Radio	Operation Modes	Frequency (MHz)	Antenna Gain		Conducted output power including Tune-up Tolerance		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
			(dBi)	(numeric)	(dBm)	(mW)			
WiFi/BT Module	WiFi 2.4G	2412-2462	2.5	1.78	22	158.49	20.00	0.0561	1.0
	WiFi 5.2G	5150-5250	3.4	2.19	17	50.12	20.00	0.0218	1.0
	WiFi 5.3G	5250-5350	3.5	2.24	16	39.81	20.00	0.0177	1.0
	WiFi 5.6G	5470-5725	3.4	2.19	10	10.00	20.00	0.0044	1.0
	WiFi 5.8G	5725-5850	3.8	2.40	17	50.12	20.00	0.0239	1.0
	Bluetooth	2402-2480	2.5	1.78	7	5.01	20.00	0.0018	1.0
	BLE	2402-2480	2.5	1.78	1	1.26	20.00	0.0004	1.0
Zigbee Module	Zigbee	2405-2480	2.9	1.95	5	3.16	20.00	0.0012	1.0

The Conducted output power including Tune-up Tolerance provided by manufacturer

The WiFi/BT Module and Zigbee Module can transmit simultaneously, operation modes in WiFi/BT module can't transmit simultaneously:

$$\sum_i \frac{S_i}{S_{Limit,i}}$$

$$= S_{WiFi/BT} / S_{limit-WiFi/BT} + S_{Zigbee} / S_{limit-Zigbee}$$

$$= 0.0561/1 + 0.0012/1$$

$$= 0.0573$$

$$< 1.0$$

Result: The device meet FCC MPE at 20 cm distance

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