RF Test Report

Applicant	:	Getac Technology Corporation
Product Name	:	Wireless Module
Trade Name	:	Getac
Model Number	:	EM9190U
Applicable Standard	:	FCC 47 CFR PART 22H FCC 47 CFR PART 24E FCC 47 CFR PART 27 FCC 47 CFR PART 90S ANSI C63.26 2015
Received Date	:	May. 22, 2023
Test Period	:	Jun. 14 ~ Jun. 20, 2023
Issued Date	:	Jul. 19, 2023

Issued by

Eurofins E&E Wireless Taiwan Co., Ltd.
No. 140-1, Changan Street, Bade District,
Taoyuan City 334025, Taiwan (R.O.C.)
Tel：+886-3-2710188 / Fax：+886-3-2710190

Taiwan Accreditation Foundation accreditation number: 1330
Frequency Range : 9 kHz to 40 GHz
Test Firm MRA designation number: TW0010 (Bade test site)
Test Firm MRA designation number: TW0034 (Wugu test site)

Note:
1.The test results are valid only for samples provided by customers and under the test conditions described in this report.
2.This report shall not be reproduced except in full, without the written approval of Eurofins E&E Wireless Taiwan Co., Ltd.
3.The relevant information is provided by customers in this test report. According to the correctness, appropriateness or completeness of the information provided by the customer, if there is any doubt or error in the information which affects the validity of the test results, the laboratory does not take the responsibility.

Revision History

Version	Issued Date	Revisions	Revised By
00	Jul. 19, 2023	Initial Issue	Snow Wang

Verification of Compliance

Applicant	:	Getac Technology Corporation
Product Name	:	Wireless Module
Trade Name	:	Getac
Model Number	:	EM9190U
FCC ID	:	QYLEM9190U
Applicable Standard	:	FCC 47 CFR PART 22H FCC 47 CFR PART 24E FCC 47 CFR PART 27 FCC 47 CFR PART 90S ANSI C63.26 2015
Test Result	:	Complied
Performing Lab.	:	Eurofins E&E Wireless Taiwan Co., Ltd. No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.) Tel：+886-3-2710188 / Fax：+886-3-2710190 Taiwan Accreditation Foundation accreditation number: 1330

Testing Laboratory 1330

Eurofins E&E Wireless Taiwan Co., Ltd. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by Eurofins E&E Wireless Taiwan Co., Ltd. based on interpretations and/or observations of test results. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : Kai Yu Yang

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1 General Information

1.1. EUT Description

Applicant	Getac Technology Corporation 5F.,Building A,No.209,Sec.1 Nangang.,Rd., Taipei City, 11568, Taiwan			
Product Name	Wireless Module			
Trade Name	Getac			
Model Number	EM9190U			
FCC ID	QYLEM9190U			
Host Information	Product Name: Tablet Trade Name: Getac Model Name: UX10, UX10G3, UX10-301, UX10-321, UX10-Ex, UX10Y(Y= 10 characters, Y can be 0 to 9, A to Z, a to z, "/", "\", "-", "_" or blank for marketing purpose) (All models are electrically identical, different model names are for marketing purpose.)			
IMEI No.	351891305000595			
Operate Band	Frequency Range (MHz)		Modulation	Channel Bandwidth
LTE Band 2	UL:	1850.7 ~ 1909.3	QPSK, 16QAM, 64QAM, 256QAM	1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	1930.7 ~ 1989.3		
LTE Band 4	UL:	1710.7 ~ 1754.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	2110.7 ~ 2154.3		
LTE Band 5	UL:	824.7 ~ 848.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	DL:	869.7 ~ 893.3		
LTE Band 7	UL:	2502.5 ~ 2567.5		5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	2622.5 ~ 2687.5		
LTE Band 12	UL:	699.7 ~ 715.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz
	DL:	729.7 ~ 745.3		
LTE Band 13	UL:	779.5 ~ 784.5		5 MHz, 10 MHz
	DL:	748.5 ~ 753.5		
LTE Band 14	UL:	790.5 ~ 795.5		5 MHz, 10 MHz
	DL:	760.5 ~ 765.5		
LTE Band 17	UL:	706.5 ~ 713.5		5 MHz, 10 MHz
	DL:	736.5 ~ 743.5		
LTE Band 25	UL:	1850.7 ~ 1914.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	1930.7 ~ 1994.3		
LTE Band 26(Part 22)	UL:	824.7 ~ 848.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
	DL:	869.7 ~ 893.3		
LTE Band 26(Part 90)	UL:	814.7 ~ 823.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz
	DL:	859.7 ~ 868.3		

LTE Band 38	UL:	2572.5 ~ 2617.5	QPSK, 16QAM, 64QAM, 256QAM	5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	2572.5 ~ 2617.5		
LTE Band 41	UL:	2498.5 ~ 2687.5		5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	2498.5 ~ 2687.5		
LTE Band 42	UL:	3450 ~ 3550		5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	3450 ~ 3550		
LTE Band 66	UL:	1710.7 ~ 1779.3		1.4 MHz, 3 MHz, 5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	2110.7 ~ 2199.3		
LTE Band 71	UL:	665.5 ~ 695.5		5 MHz, 10 MHz, 15 MHz, 20 MHz
	DL:	619.5 ~ 649.5		

Antenna information	Type	Max. Gain (dBi)	
	PIFA Antenan	LTE Band 2	2.5
		LTE Band 4	3.0
		LTE Band 5	0.8
		LTE Band 7	2.8
		LTE Band 12	1.8
		LTE Band 13	1.1
		LTE Band 14	1.1
		LTE Band 17	1.7
		LTE Band 25	2.4
		LTE Band 26	1.0
		LTE Band 38	2.8
		LTE Band 41	2.8
		LTE Band 42	2.1
		LTE Band 66	2.7
		LTE Band 71	-2.5
Operate Temp. Range	-40 ~ +85 ℃		
EUT Power Rating	DC 3.3V		

EUT Modify Description：

Modify Description: Add host model: UX10, UX10G3, UX10-301, UX10-321, UX10-Ex, UX10Y(Y= 10 characters, Y can be 0 to 9, A to Z, a to z, “/”, “\”, “-”, “_” or blank for marketing purpose). After our evaluation, the retest of Simultaneous Transmitter of Spurious Radiated is required. The other test data refer to the original report.

1.2. Testing Location

Lab Name: Eurofins E&E Wireless Taiwan Co., Ltd.

Site Address: ■ No. 140-1, Changan Street, Bade District, Taoyuan City 334025, Taiwan (R.O.C.)

Site Address: ☐ No. 2, Wuquan 5th Rd. Wugu Dist., New Taipei City, Taiwan (R.O.C.)

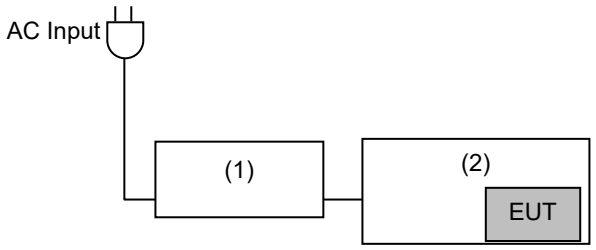
1.3. Mode of Operation

Test Mode
LTE Band 38

1.4. EUT Test Step

1	Setup the EUT shown on “Configuration of Test System Details”.
2	Turn on the power of all equipment.
3	EUT run test program test.

1.5. Configuration of Test System Details



Devices Description					
Product		Manufacturer	Model Number	Serial Number	Power Cord
(1)	Adapter	FSP	FSP065-RBBN3	---	---
(2)	Tablet	Getac	UX10G3	---	---

1.6. Test Instruments

For Radiated Emissions
Test Period: Jun. 14 ~ Jun. 20, 2023
Testing Engineer:Marin Lee

Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	LOOP Antenna (9 kHz~30 MHz)	Schwarzbeck Mess-Elektronik	FMZB 1513-60	00031	Feb. 21, 2023	1 year
☒	Trilog Broadband Antenna (30 MHz~1 GHz)	Schwarzbeck Mess-Elektronik	VULB9168	01276	Feb. 09, 2023	1 year
☒	Broadband Horn Antenna (1 GHz~18 GHz)	RF SPIN	DRH18-E	210305A18ES	Feb. 21, 2023	1 year
☒	Broadband Horn Antenna (15 GHz~40 GHz)	Schwarzbeck Mess-Elektronik	BBHA9170	01133	Feb. 13, 2023	1 year
☒	Spectrum Analyzer (10 Hz~44 GHz)	KEYSIGHT	N9020B	MY60112362	Feb. 16, 2023	1 year
☒	UXM 5G Wireless Test Platform	KEYSIGHT	E7515B	MY59020225	Mar. 1, 2023	1 year
☒	Radio Communication Analyzer	Anritsu	MT821C	6272459653	Oct. 4, 2022	1 year
☒	Pre-Amplifier	Agilent	8447D	2944A10961	Jul. 07, 2022	1 year
☒	Pre-Amplifier	EMCI	EMC118A45SE	980822	Nov. 22, 2022	1 year
☒	Coaxial Cable (10 kHz~3000 MHz)	EMCI	EMCCFD400-NM-NM-2000	211006	Nov. 14, 2022	1 year
☒	Coaxial Cable (10 kHz~3000 MHz)	EMCI	EMCCFD400-NM-NM-2000	211007	Nov. 14, 2022	1 year
☒	Coaxial Cable (10 kHz~3000 MHz)	EMCI	EMCCFD400-NM-NM-6000	211015	Nov. 14, 2022	1 year
☒	Coaxial Cable (1 GHz~18 GHz)	EMCI	EMC104-SM-SM-1000	211026	Nov. 14, 2022	1 year
☒	Coaxial Cable (1 GHz~18 GHz)	EMCI	EMC104-SM-SM-2000	211035	Nov. 14, 2022	1 year
☒	Coaxial Cable (1 GHz~18 GHz)	EMCI	EMC104-SM-SM-8000	211036	Nov. 14, 2022	1 year

Note: N.C.R. = No Calibration Request

For Radiated Emissions
Test Period: Jun. 14 ~ Jun. 20, 2023
Testing Engineer:Marin Lee

Radiation test sites		Semi Anechoic Room				
Use	Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
☒	Coaxial Cable (18 GHz~40 GHz)	EMCI	EMC101G-KM-KM-600	211211	Jan. 19, 2023	1 year
☒	Coaxial Cable (18 GHz~40 GHz)	EMCI	EMC101G-KM-KM-2000	211210	Jan. 19, 2023	1 year
☒	Coaxial Cable (18 GHz~40 GHz)	EMCI	EMC101G-KM-KM-6000	211209	Jan. 19, 2023	1 year
☒	Highpass Filter	Warison	WFIL-H3000-20000F	WR4BBFWC2B1	Nov. 14, 2022	1 year
☒	Highpass Filter	Warison	WFIL-H8000-26000F	001	Nov. 14, 2022	1 year
☒	Software	R_RAM	V1.3	N/A	N.C.R.	---

Note: N.C.R. = No Calibration Request

1.7. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-30
Humidity (%RH)	25-75	45-75

1.8. Measurement Uncertainty

Parameter	Uncertainty
Radiated Emission	5.0 dB

1.9. Summary of Test Result

FCC Rule	Description	Result
§2.1046	Conducted Output Average Power	N/A (Note 1)
§22.913 §24.232 §27. 50 §90.635	Equivalent Isotropic Radiated Power / Equivalent Radiated Power	N/A (Note 1)
§2.1055 §22.355 §24.235 §27. 54	Frequency Stability	N/A (Note 1)
§2.1049	Emission Bandwidth & Occupied Bandwidth	N/A (Note 1)
§24.232 §27.50	Peak to average ratio	N/A (Note 1)
§2.1051 §22.917 §24.238 §27.53	Band Edge	N/A (Note 1)
§2.1051 §22.917 §24.238 §27.53	Conducted Spurious Emissions	N/A (Note 1)
§2.1053 §22.917 §24.238 §27.53 §90.691	Radiated Spurious Emissions	Pass (Note 2)

Note 1: No need for verification.

Note 2: Only verify the Simultaneous Transmission.

Decision Rule

■ Uncertainty is not included.

□ Uncertainty is included.

2 Measurement Procedure

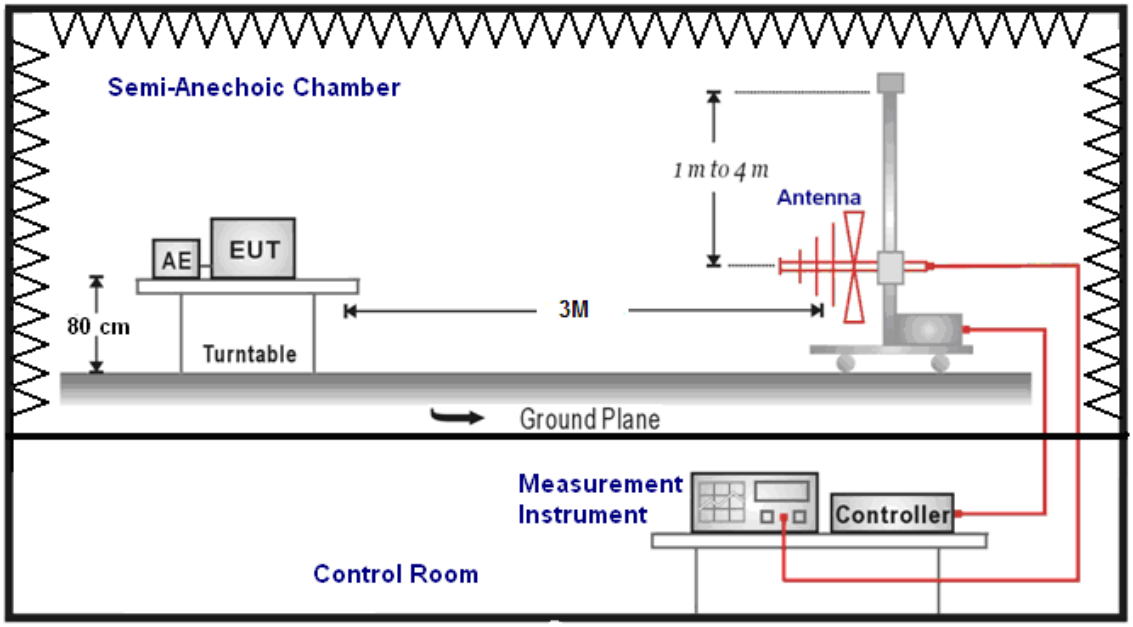
2.1. Radiated Emission Test

■ Limit

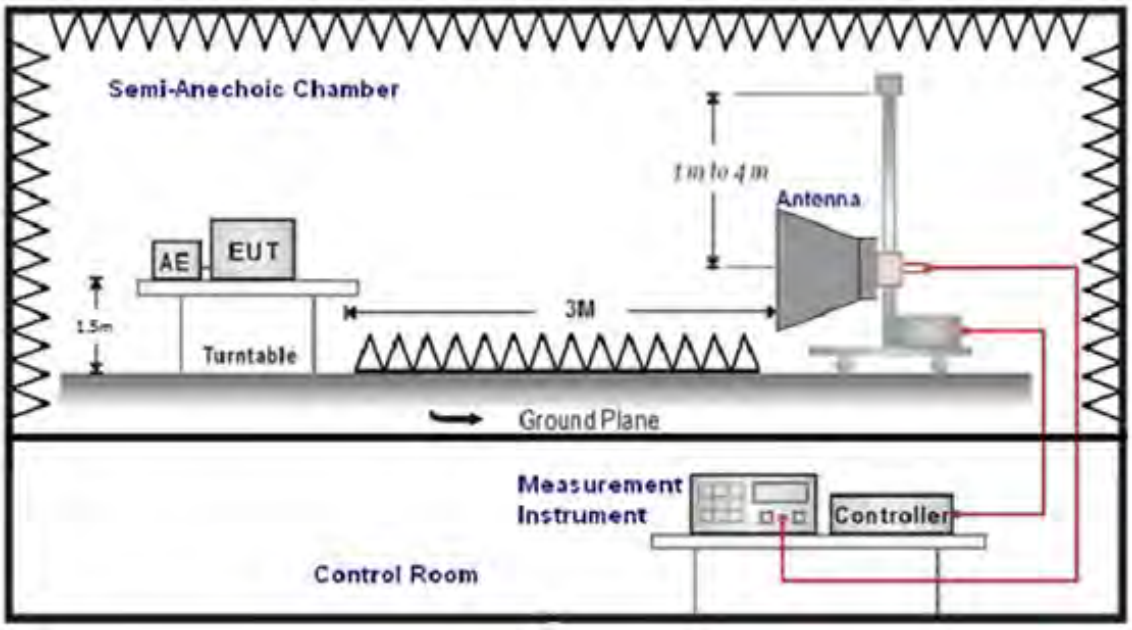
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 +10 $\log_{10}$(P) dB. The limit of emission equal to -13 dBm

■ Setup

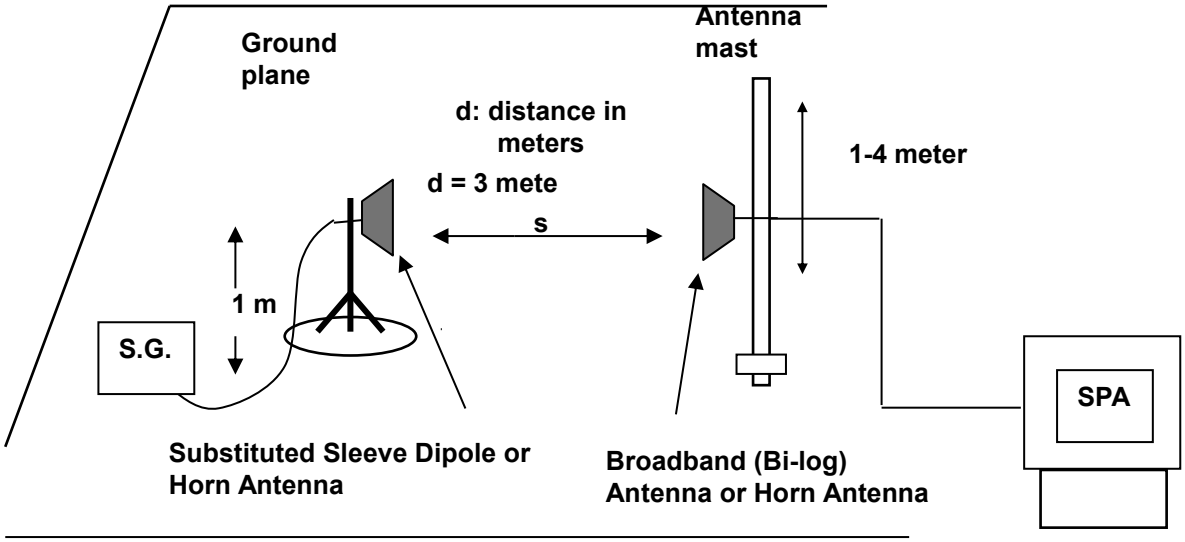
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



■ **Test Procedure**

a. The EUT was set up for the maximum power with WWAN link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range).

b. Radiation Emission measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (1.5 m for above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

c. The substitution antenna (Note:1 & 2) is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to “Read Value” of step a. Record the power level of S.G.

d. E.I.R.P. = Output power level of S.G - TX cable loss + Antenna gain of substitution horn

e. E.R.P. = E.I.R.P- 2.15 dB

f. Measurement range 9 kHz - 10 th Harmonic

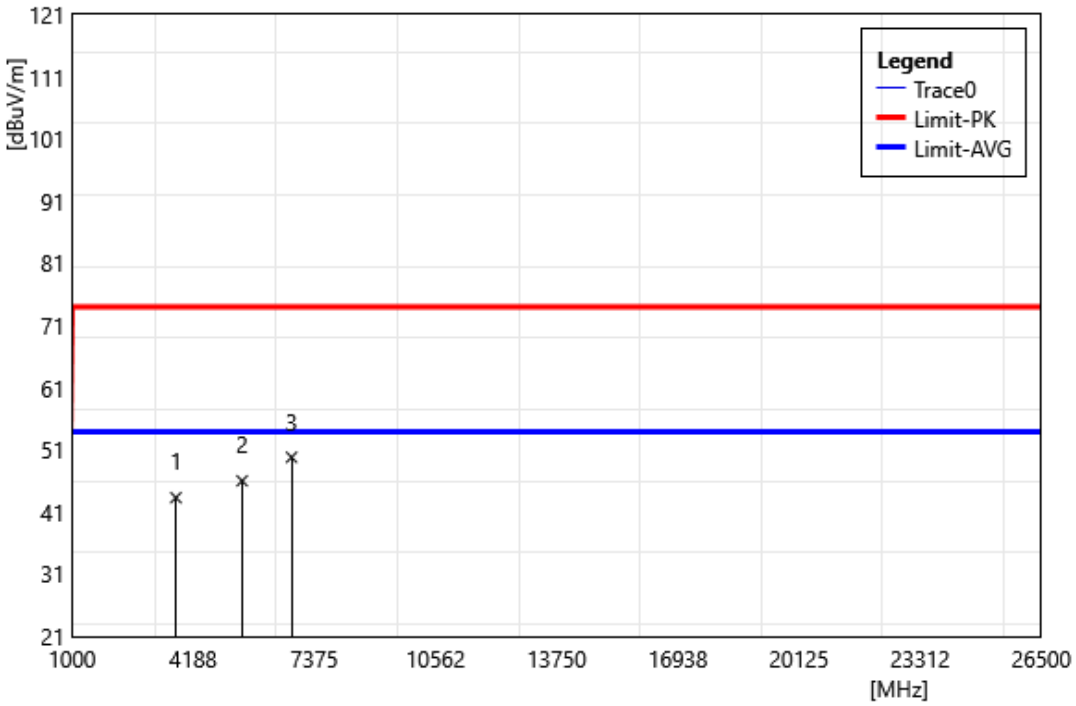
Note: 1. Below 1 GHz Substituted Method Test：Sleeve dipole antenna to Bi-Log Antenna

2. Above 1 GHz Substituted Method Test：Horn antenna to Horn Antenna

3 Test Results

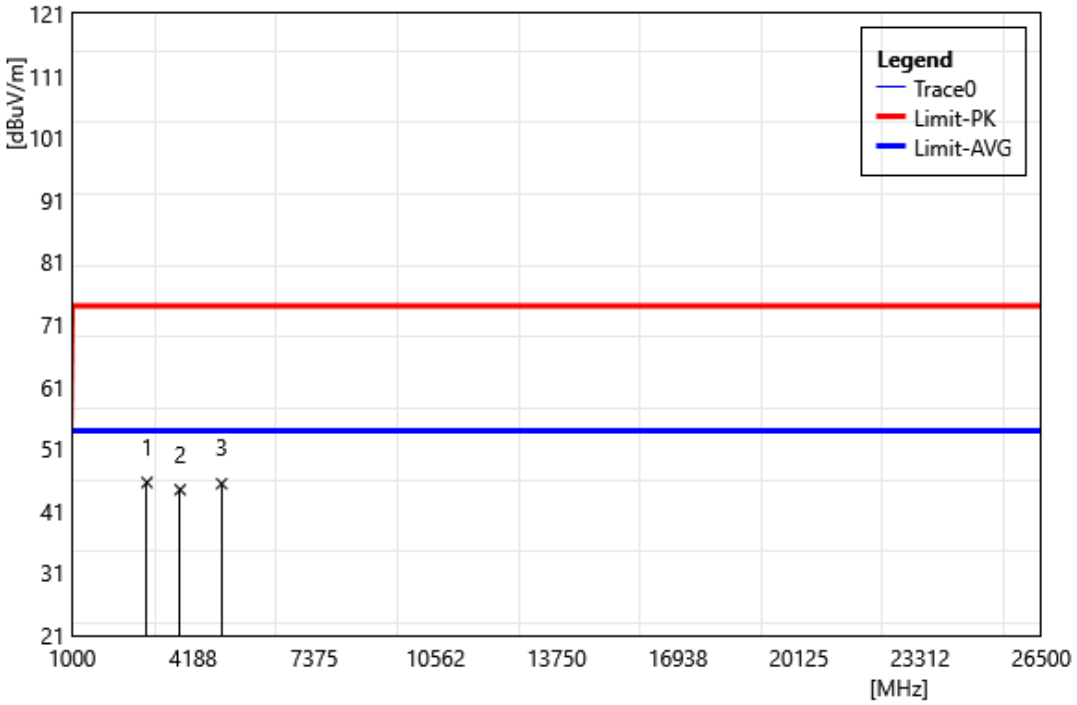
3.1. Radiated Emission

Test Site:	96602	Standard:	Part 22H/24/27/90
Test Mode:	4G + BT + wifi 2.4G		
Polarization:	Horizontal		
ReMark:			



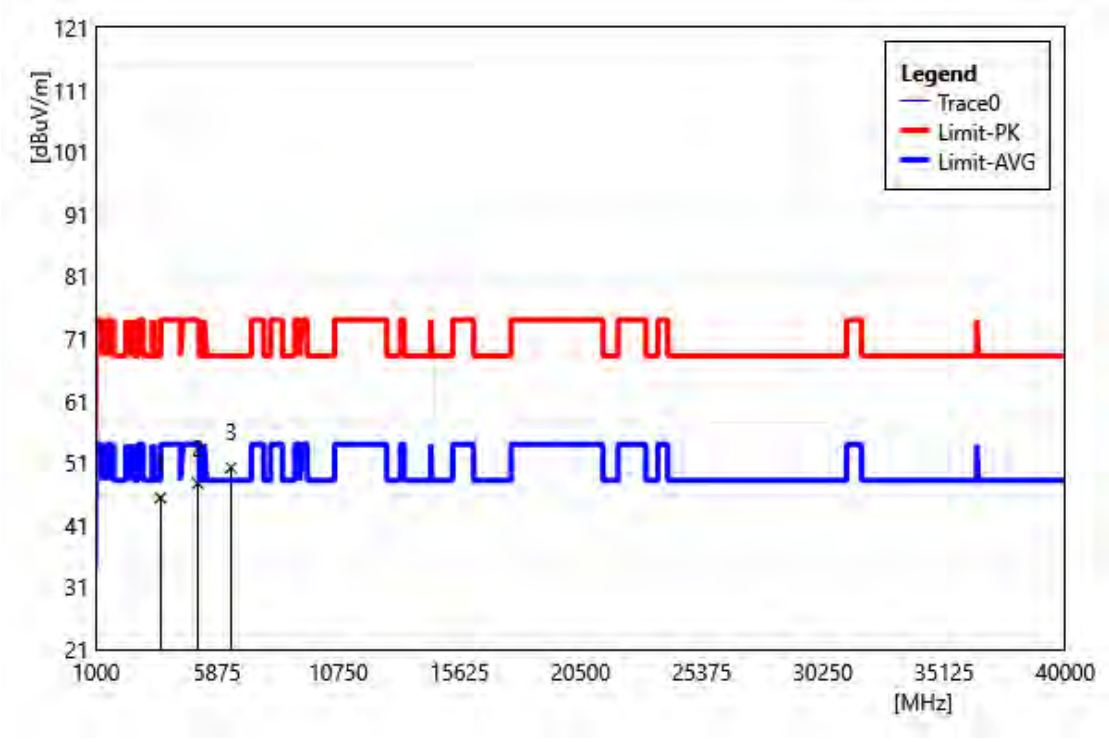
ID	Frequency MHz	Reading dBuV	Correct Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	ReMark
1	3734.27	79.67	-36.36	43.31	74.00	-30.69	PEAK
2	5475.52	111.71	-65.68	46.03	74.00	-27.97	PEAK
3	6776.22	135.73	-85.92	49.81	74.00	-24.19	PEAK

Test Site:	96602	Standard:	Part 22H/24/27/90
Test Mode:	4G + BT + wifi 2.4G		
Polarization:	Vertical		
ReMark:			



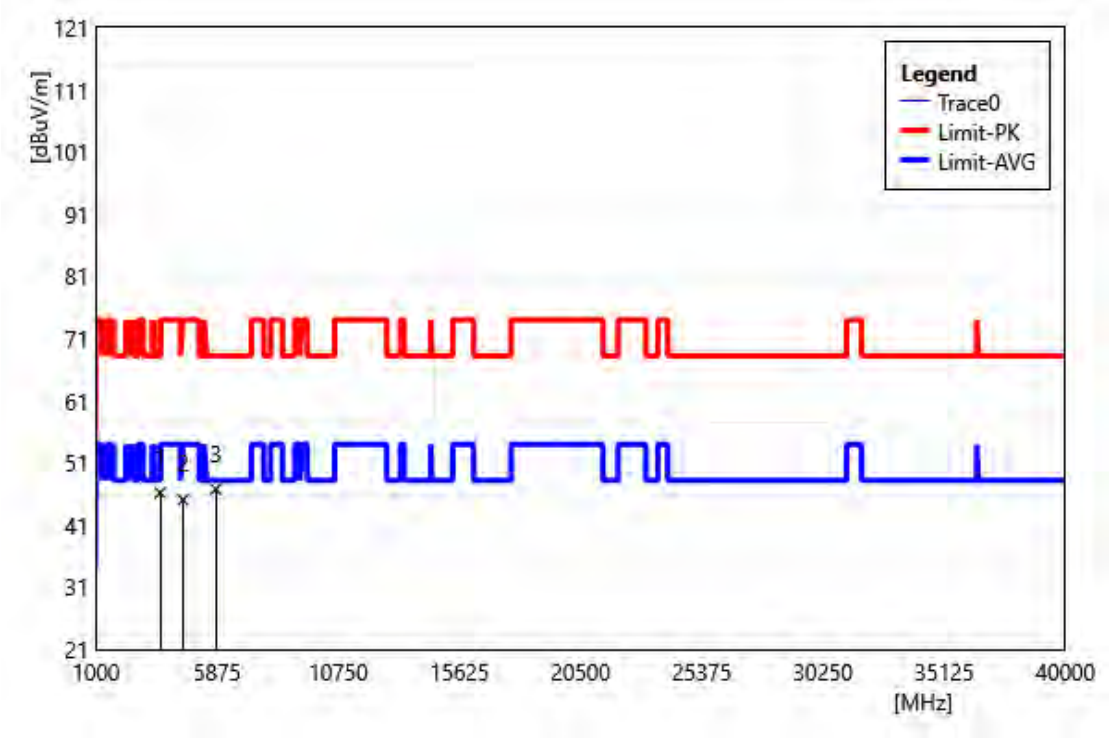
ID	Frequency MHz	Reading dBuV	Correct Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	ReMark
1	2972.03	70.55	-24.95	45.60	74.00	-28.40	PEAK
2	3846.15	82.47	-38.04	44.43	74.00	-29.57	PEAK
3	4937.06	101.24	-55.85	45.39	74.00	-28.61	PEAK

Test Site:	96602	Standard:	Part 22H/24/27/90
Test Mode:	4G + BT + wifi 5G		
Polarization:	Horizontal		
ReMark:			



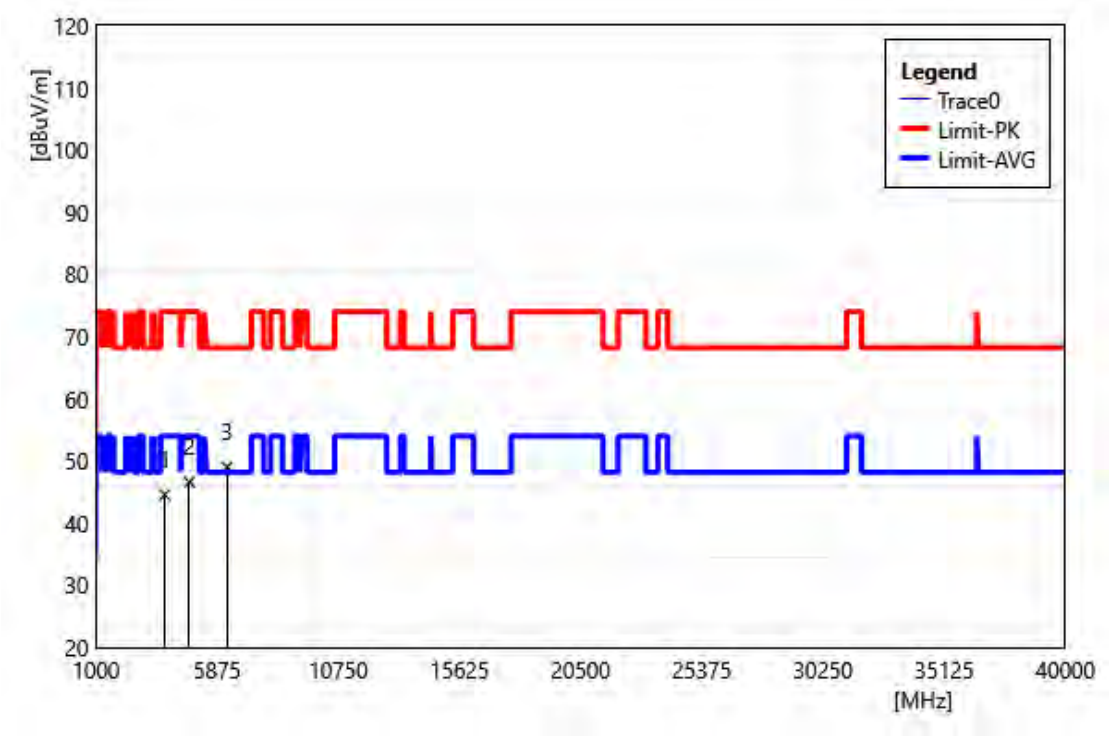
ID	Frequency MHz	Reading dBuV	Correct Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	ReMark
1	3594.41	46.67	-1.30	45.37	68.20	-22.83	PEAK
2	5097.90	44.98	2.73	47.71	74.00	-26.29	PEAK
3	6433.57	43.18	7.07	50.25	68.20	-17.95	PEAK

Test Site:	96602	Standard:	Part 22H/24/27/90
Test Mode:	4G + BT + wifi 5G		
Polarization:	Vertical		
ReMark:			



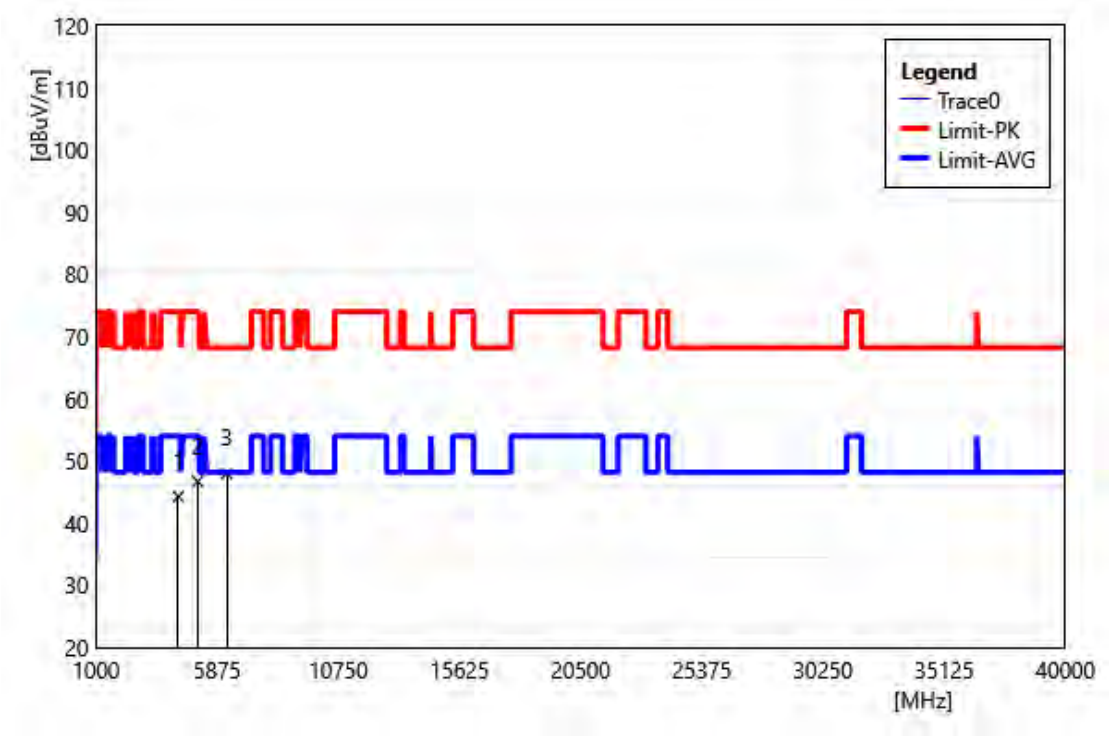
ID	Frequency MHz	Reading dBuV	Correct Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	ReMark
1	3580.42	47.71	-1.52	46.19	68.20	-22.01	PEAK
2	4503.50	43.83	1.25	45.08	74.00	-28.92	PEAK
3	5825.17	43.08	3.69	46.77	68.20	-21.43	PEAK

Test Site:	96602	Standard:	Part 22H/24/27/90
Test Mode:	4G + BT + wifi 6E		
Polarization:	Horizontal		
ReMark:			



ID	Frequency MHz	Reading dBuV	Correct Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	ReMark
1	3762.24	45.41	-0.84	44.57	74.00	-29.43	PEAK
2	4755.24	43.89	2.71	46.60	74.00	-27.40	PEAK
3	6265.73	42.68	6.34	49.02	68.20	-19.18	PEAK

Test Site:	96602	Standard:	Part 22H/24/27/90
Test Mode:	4G + BT + wifi 6E		
Polarization:	Vertical		
ReMark:			



ID	Frequency MHz	Reading dBuV	Correct Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	ReMark
1	4314.69	44.34	-0.08	44.26	74.00	-29.74	PEAK
2	5090.91	44.13	2.59	46.72	74.00	-27.28	PEAK
3	6258.74	41.65	6.31	47.96	68.20	-20.24	PEAK

--- END---