





FCC PART 15.247

TEST REPORT

For

Fujian LANDI Commercial Equipment Co., Ltd.

Building 17, Section A, Software Park, No. 89 Software Road, Gulou District, Fuzhou Municipality, Fujian Province, China

FCC ID: 2AG6N-SNM927WF4MG

Report Type: Class II Permissive		Product Name:		
Change Report		Smart Module		
Report Number:	2407W89602E-	RF-02		
Report Date:	2024-09-20			
Reviewed By:	Stein Peng	Stein Peng		
Approves By:	Miles Chen	mileselen		
Prepared By:	Unit 102, No. 9			

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REPORT REVISION HISTORY

Number of Revisions	Report No.	Version	Issue Date	Description
0	2407W89602E-RF-02	R1V1	2024-09-20	Class II Permission Change

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Product Name:	Smart Module
Tested Model:	SNM927
★Power Supply:	DC 3.8V
Maximum Conducted Output Power:	BLE: 2.35dBm WIFI:18.92dBm
Frequency Range:	BLE: 2402-2480MHz Wi-Fi: 2412-2462MHz
Modulation Technique:	BLE: GFSK WIFI: DSSS, OFDM
Antenna Type:	FPC Antenna
★Maximum Antenna Gain:	0.84dBi
EUT Received Status:	Good

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Note:

- 1. The Maximum Antenna Gain was declared by manufacturer.
- 2. The power supply by user manual.
- 3. All measurement and test data in this report was gathered from production sample serial number:
- 2M7D-1 (Assigned by the BACL (Xiamen). The EUT supplied by the applicant was received on 2024-08-09)

Objective

This report is prepared on behalf of *Fujian LANDI Commercial Equipment Co., Ltd* in accordance with Part 2-Subpart J, Part 15-Subparts A and C of the Federal Communication Commission's rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2020, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

And KDB 558074 D01 15.247 Meas Guidance v05r02.

All emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Xiamen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

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Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Xiamen) to collect test data is located on the Unit 102, No. 902 Meifeng South Road, Binhai West Avenue, Science and Technology Innovation Park, Torch High tech Zone XiaMen.

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Bay Area Compliance Laboratories Corp. (Xiamen) Lab is accredited to ISO/IEC 17025 by A2LA (Certificate Number: 7134.01) and the lab has been recognized as the FCC accredited lab under the KDB 974614 D01, the FCC Designation No.: CN1384.

Measurement Uncertainty

Item	$U_{ m lab}$	
Conducted Emission	150kHz-30MHz	2.33 dB
	9kHz-30MHz	2.59 dB
	30MHz~1GHz	4.79 dB
Radiated Emission	1GHz~6GHz	4.6 dB
	6GHz-18GHz	5.43 dB
	18GHz~26.5GHz	5.47 dB
Transmitter Conducted Power(Conducted R	0.624 dB	
Temperature		1℃
Humidity		5%
Supply voltages		0.4%

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

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SYSTEM TEST CONFIGURATION

Test Mode and Voltage

The system was configured for testing in a typical mode (as normally used by a typical user).		
Test mode:	Test mode 1: Transmitting	
Test voltage:	Test mode 1: AC 120V/60Hz	
Remark:	During all emission tests, the EUT was configured to measure its highest possible emission level and the worst case's test data was presented in this test report.	

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Description of Test Configuration

For BLE mode, 40 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
0	2402	20	2442
1	2404	21	2444
2	2406	22	2446
3	2408	23	2448
4	2410	24	2450
5	2412	25	2452
6	2414	26	2454
7	2416	27	2456
8	2418	28	2458
9	2420	29	2460
10	2422	30	2462
11	2424	31	2464
12	2426	32	2466
13	2428	33	2468
14	2430	34	2470
15	2432	35	2472
16	2434	36	2474
17	2436	37	2476
18	2438	38	2478
19	2440	39	2480

EUT was tested with Channel 0, 19 and 39.

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For 802.11b, 802.11g, 802.11n-HT20, 802.11n-HT40 mode, 11 channels are provided to testing:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
1	2412	8	2447
2	2417	9	2452
3	2422	10	2457
4	2427	11	2462
5	2432	/	/
6	2437	/	/
7	2442	/	/

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For 802.11b, 802.11g, 802.11n-HT20 mode, EUT was tested with Channel 1, 6 and 11. For 802.11n-HT40 mode, EUT was tested with Channel 3, 6 and 9.

Equipment Modifications

No modification was made to the EUT tested.

★EUT Exercise Software

BLE & Wi-Fi test in the engineer mode.

RF Test Tool: QRCT4

The device was tested with the worst case was performed as below:

Test Modes	Test Channels	Test Frequency	Data rate	Power Level Setting
	1	2412	1Mbps	18
802.11b	6	2437	1Mbps	18
	11	2462	1Mbps	18
	1	2412	6Mbps	15
802.11g	6	2437	6Mbps	15
	11	2462	6Mbps	15
	1	2412	MCS0	14
802.11n20	6	2437	MCS0	14
	11	2462	MCS0	14
	3	2422	MCS0	13
802.11n40	6	2437	MCS0	13
	9	2452	MCS0	13

Tost Modes	Power Level Setting		
Test Modes	Lowest Channel	Middle Channel	Highest Channel
1Mbps	Default	Default	Default
2Mbps	Default	Default	Default

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Pre-scan with all the data rates, the above data rate is the worst case for Wi-Fi and BLE test.

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
LITEON	AC ADAPTER	PA-1650-90	NSW26604

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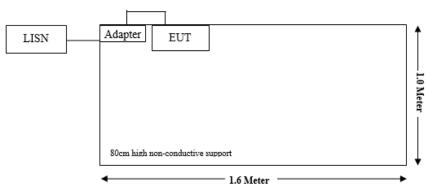
External I/O Cable

Cable Description	Length (m)	From Port	То
POWER CABLE	1.2	EUT	ADAPTER
POWER CABLE	1.0	ADPTER	SOCKET

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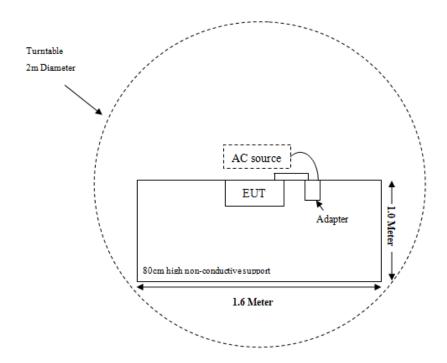
Block Diagram of Test Setup

Conducted Emission:



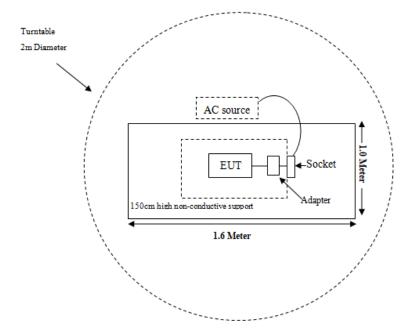
Radiated Emission:

Below 1GHz



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Above 1GHz



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SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result	Remark
§15.203	Antenna Requirement	Compliance	
§15.207 (a)	AC Line Conducted Emissions	Compliance	
\$15.205, \$15.209, \$15.247(d)	Spurious Emissions	Compliance	
§15.247 (a)(2)	6 dB Emission Bandwidth	-	See Note 2
§15.247(b)(3)	Maximum Conducted Output Power	Reporting	
§15.247(d)	100 kHz Bandwidth of Frequency Band Edge	-	See Note 2
§15.247(e)	Power Spectral Density	-	See Note 2

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Note 1:

This is Class II permissive change application based on the Change ID device, model: SNM927, FCC ID: 2AG6N-SNM927WF4MG. The Change ID device based on the original device, model: SNM927, FCC ID: 2APJ4-SNM927, which was tested by Sporton International Inc. (Kunshan). The change between the original equipment and the current equipment is stated and guaranteed by the applicant, as following:

1. Change the antenna.

Per Spot check with RF output power, the RF parameters are identical with the original device. Therefore, Radiated Spurious Emissions was tested based on the change.

Note 2:

Please refer to Report No: FR462035B (BLE) and FR462035C (2.4G WIFI)

The Bay Area Compliance Laboratories Corp. (Xiamen) is responsible for all the information provided in this report, except when information is provided by the customer as identified in this report.

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TEST EQUIPMENT LIST

Test Equipment	Manufacturer	Model	Serial	Calibration	Calibration				
		Conducted Emissi	Number	Date	Due Date				
EMI Test Receiver	Rohde & Schwarz	ESR	103105	2024/03/29	2025/03/28				
LISN	Rohde & Schwarz	ENV216	100129	2024/03/29	2025/03/28				
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	0357.8810.54	2024/03/29	2025/03/28				
Coaxial Cable									
	XINHANGWEIBO	XH400T-N-4M	CC001	2024/03/29	2025/03/28				
Test Software	Audix	E3	18621a	N/A	N/A				
Radiated Emissions Below 1GHz EMI Test Receiver Rohde & Schwarz ESR 103103 2024/03/29 2025/03/28									
Loop Antenna	Rohde & Schwarz	HFH2-Z2	830749/001	2023/07/27	2026/07/26				
Antenna	Sunol Sciences	JB6	A122022-5	2023/07/27	2026/07/26				
Amplifier	Sonoma	310B	120903	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH400T-N-4M	CC002	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH460B-N-2M	CC006	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH460B-N-12M	CC007	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	HFH2-CC	335.3609	2024/03/29	2025/03/28				
Test Software	Audix	E3	18621a	N/A	N/A				
	Rac	liated Emissions Abo	ve 1 GHz						
Spectrum Analyzer	Rohde & Schwarz	FSV40-N	102051	2024/03/29	2025/03/28				
Filter Switch Unit	Decentest	DT7220FSU	DS79904	2024/02/23	2025/02/22				
Multiplex Switch Test Control Set	Decentest	DT7220SCU	DS79901	2024/02/23	2025/02/22				
Double Ridge Guide Horn Antenna	A.H.Systems	SAS-571	1980	2023/07/28	2026/07/27				
Preamplifier	A.H.Systems	PAM-0118P	489	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH800A-N-6M	CC003	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH800A-N-1M	CC005	2024/03/29	2025/03/28				
Horn Antenna	EMCO	3116	9407-2232	2023/07/31	2026/07/30				
Preamplifier	A.H.Systems	PAM-1840	200	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-3M	CC008	2024/03/29	2025/03/28				
Coaxial Cable	XINHANGWEIBO	XH360A-2.92-1M	CC009	2024/03/29	2025/03/28				
Test Software	Audix	E3	18621a	N/A	N/A				
RF Conducted Test									
Spectrum Analyzer	Rohde & Schwarz	FSU	100405	2024/03/29	2025/03/28				
Coaxial Cable	N/A	N/A	N/A	2024/03/29	2025/03/28				
Power Sensor	HP	8481A	PS20240325	2024/03/29	2025/03/28				

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^{*} Statement of Traceability: Bay Area Compliance Laboratories Corp. (Xiamen) attests that all calibrations have been performed in accordance to requirements that traceable to National Primary Standards and International System of Units (SI).

FCC §15.203 - ANTENNA REQUIREMENT

Applicable Standard

According to § 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the user of a standard antenna jack or electrical connector is prohibited. The structure and application of the EUT were analyzed to determine compliance with section §15.203 of the rules. §15.203 state that the subject device must meet the following criteria:

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- a. Antenna must be permanently attached to the unit.
- b. Antenna must use a unique type of connector to attach to the EUT.
- c. Unit must be professionally installed, and installer shall be responsible for verifying that the correct antenna is employed with the unit.

And according to FCC 47 CFR section 15.247 (b), if the transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Antenna Connector Construction

The EUT has one FPC antenna arrangement for Bluetooth & WIFI, which was permanently attached and the antenna gain is 0.84 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance

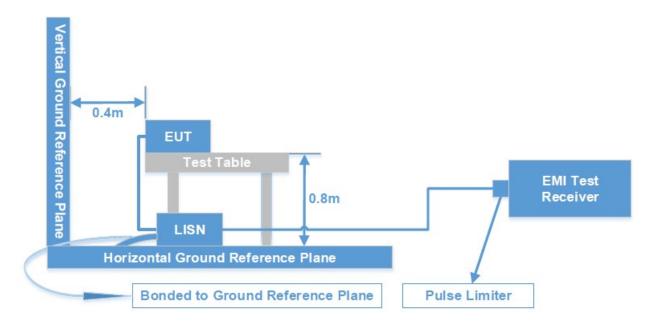
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FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



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The setup of EUT is according with per ANSI C63.10-2020 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	RBW	VBW	Detector
150 kHz – 30 MHz	9 kHz	30 kHz	QP/AV

Test Procedure

During the conducted emission test, the adapter was connected to the outlet of the LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All final data was recorded in the Quasi-peak and average detection mode.

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Level & Margin Calculation

The Level is calculated by adding LISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation from the Meter Reading. The basic equation is as follows:

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 $\begin{aligned} & Factor\left(dB\right) = LISN\ VDF\left(dB\right) + Cable\ Loss\left(dB\right) + Transient\ Limiter\ Attenuation\left(dB\right) \\ & Level\left(dB\mu V\right) = Reading\left(dB\mu V\right) + Factor\left(dB\right) \end{aligned}$

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dB μ V) – Level (dB μ V)

Test Data

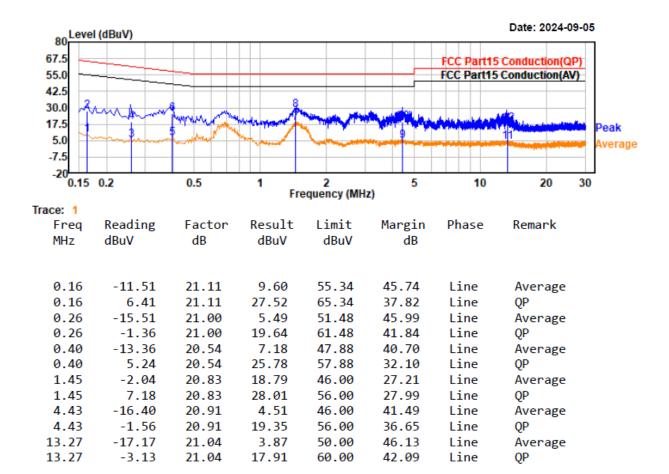
Temperature:	21.8°C
Relative Humidity:	56 %
ATM Pressure:	100.1kPa
Test Date:	2024-09-05
Test Engineer:	Toby Chen

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EUT operation mode: Transmitting in Wifi 802.11b low channel (worst case)

Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.8℃/56%/100.1kPa

Test Mode: 802.11b 2412 Tx Tested by: Toby Chen
EUT Model: SNM927 Power Source: AC 120V/60Hz

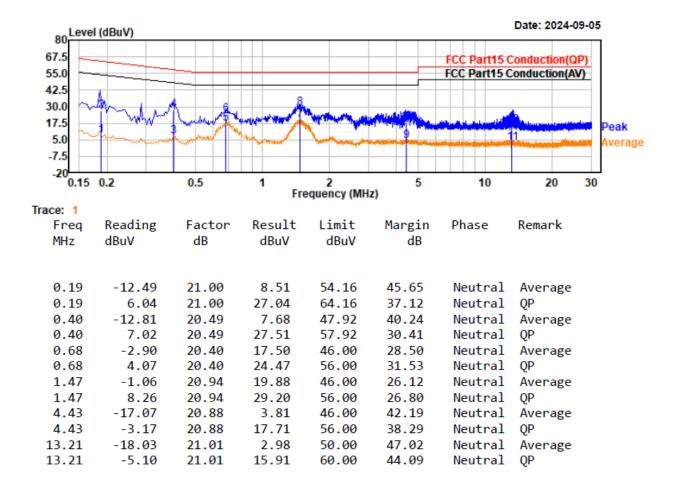


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Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.8℃/56%/100.1kPa

Test Mode: 802.11b 2412 Tx Tested by: Toby Chen

EUT Model: SNM927 Power Source: AC 120V/60Hz



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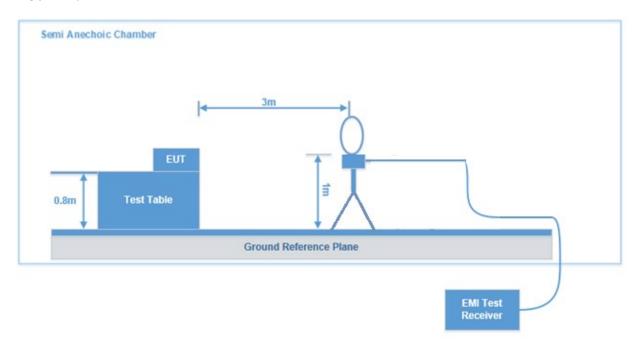
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

FCC §15.247 (d); §15.209; §15.205;

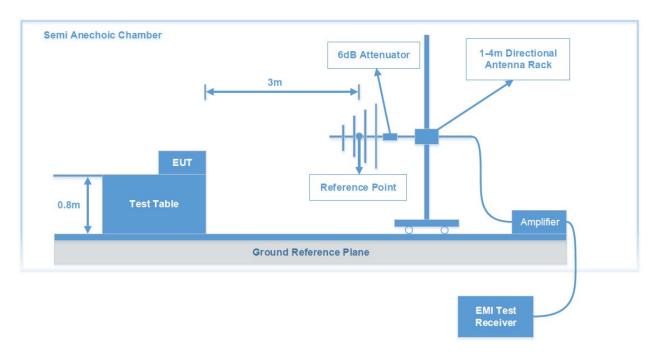
EUT Setup

9 kHz-30MHz:



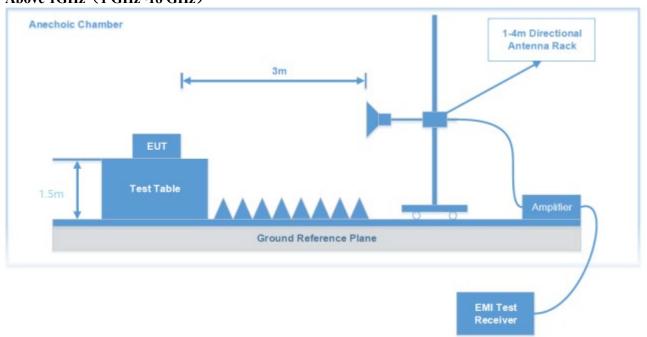
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30MHz -1 GHz:



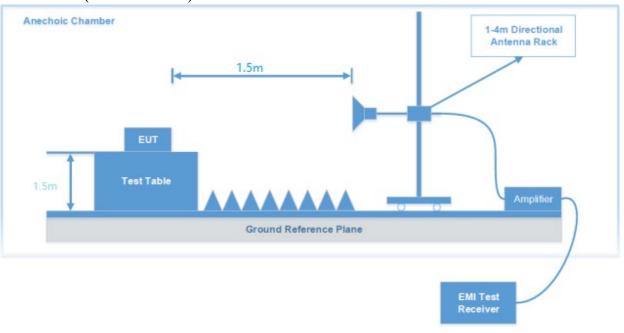
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Above 1GHz (1 GHz~18 GHz)



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Above 1GHz (18 GHz~25GHz)



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2020. The specification used was the FCC 15.209, and FCC 15.247 limits.

Note: For Radiated test 18-25GHz, which was performed at 1.5 meters distance, according to C63.10, the test result shall be extrapolated to the specified distance using an extrapolation Factor of 20dB/decade from 3 meters to 1.5 meters.

Distance extrapolation Factor =20 log (specific distance [3m]/test distance [1.5m]) dB= 6.0 dB.

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EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 9 kHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

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Below 1GHz:

Frequency Range	RBW	VBW	IF B/W	Measurement
9 kHz – 150 kHz	200Hz	1 kHz	/	PK
9 KHZ – 130 KHZ	/	/	200Hz	QP/AV
150 kHz – 30 MHz	10 kHz	30 kHz	/	PK
130 KHZ – 30 MHZ	/	/	9kHz	QP/AV
30 MHz – 1000 MHz	100 kHz	300 kHz	/	PK
30 MHZ – 1000 MHZ	/	/	120kHz	QP

Above 1GHz:

Duty Cycle	RBW	VBW	Measurement
Any	1MHz	3MHz	PK
>98%	1MHz	10Hz	AV
<98%	1MHz	≥1/T	AV

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz, peak and Average detection modes for frequencies above 1 GHz.

For each measurement antenna alignment, the EUT shall be rotated through 0° to 360° on a turntable. The report shall list the six emissions with the smallest margin relative to the limit, for each of the three antenna orientations (parallel, perpendicular, and ground parallel) unless the margin is greater than 20 dB, then the following statement shall be made: "all emissions were greater than 20 dB below the limit."

Level & Margin Calculation

The Level is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB) Level (dB μ V/m) = Reading (dB μ V) + Factor (dB/m)

The "Margin" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin (dB) = Limit (dB μ V/m) –Level (dB μ V/m)

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Test Data

Please refer to the below table and plots.

After pre-scan in the X, Y and Z axes of orientation, the worst case is **Z** axes, test data is below:

Frequency Range:	Below 1 GHz	Above 1 GHz
Temperature:	21.3°C	21.3°C~23.9°C
Relative Humidity:	51 %	51 %~60 %
ATM Pressure:	101.1kPa	100.1kPa ~101.1kPa
Test Date:	2024-08-10	2024-08-06~2024-09-19
Test Engineer:	Wlif Wu	Wlif Wu

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1) 9 kHz~30MHz

EUT operation mode: Transmitting in 2.4G Wi-Fi 802.11b low channel (worst case)

Pre-scan in parallel, ground-parallel and perpendicular of orientation of loop antenna, the amplitude of spurious emissions attenuated is more than 20 dB below the permissible value, which is not required to be report.

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2)30 MHz-1GHz (worst case)

For Wi-Fi:

After pre-scan 802.11b 802.11g 802.11n20/n40 mode, the worst case is 802.11b.

For BLE:

After pre-scan BLE1M 2M mode, the test results are better than WiFi, so only WiFi results were recorded.

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Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

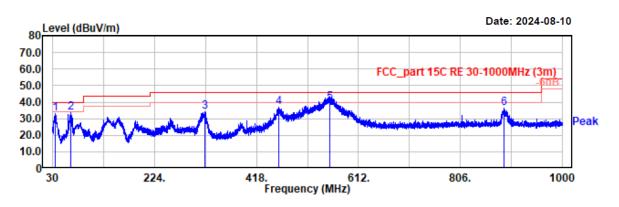
Date: 2024-08-10 80 Level (dBuV/m) 70.0 60.0 FCC_part 15C RE 30-1000MHz (3m) 50.0 40.0 30.0 Peak 20.0 10.0 30 224. 612. 806. 1000 Frequency (MHz) Freq Reading Factor Result Limit Margin Polarity Remark MHz dBuV dB/m dBuV/m dBuV/m dΒ 62.78 -17.37 40.27 22.90 40.00 17.10 Horizontal Peak 255.04 45.53 -11.36 34.17 46.00 11.83 Horizontal Peak -8.97 46.00 311.79 43.12 34.15 11.85 Horizontal Peak 529.74 44.86 -3.26 41.60 46.00 4.40 QP Horizontal 551.38 43.96 -2.71 41.25 46.00 4.75 Horizontal QP 39.56 2.37 46.00 6.44 883.12 37.19 Horizontal QP

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Power Source: AC 120V/60Hz

Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Test distance: 3m



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
35.43 64.34	41.69 51.13	-8.34 -17.32	33.35 33.81	40.00 40.00	6.65 6.19	Vertical Vertical	QP QP
319.64	42.82	-8.78	34.04	46.00	11.96	Vertical	Peak
460.97	41.51	-4.59	36.92	46.00	9.08	Vertical	QP
557.43	42.53	-2.61	39.92	46.00	6.08	Vertical	QP
889.03	34.05	2.48	36.53	46.00	9.47	Vertical	QP

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3) 1GHz~3GHz (worst case)

For BLE:

After pre-scan BLE 1M&2M mode, the worst case is BLE 1M

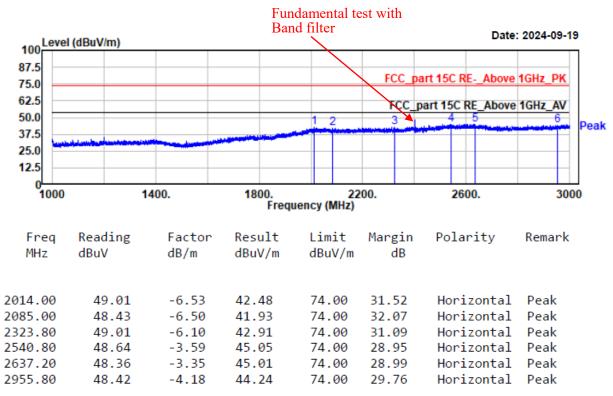
Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Report No.: 2407W89602E-RF-02

Test Mode: BLE 1M 2402MHz Tested by: Wlif Wu

EUT Model:SNM927 Power Source: AC 120V/60Hz

Test distance: 3m



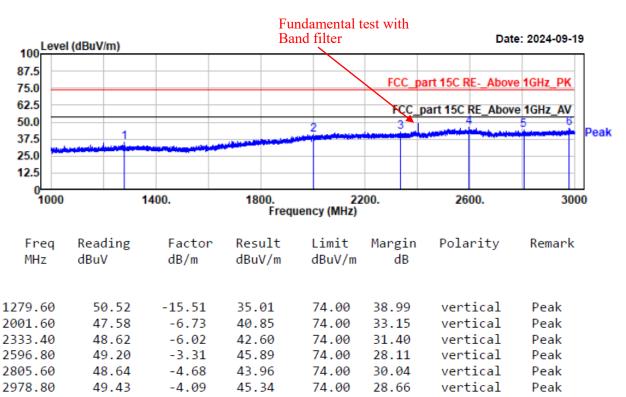
FCC Part 15.247 Page 24 of 78

Test Mode: BLE 1M 2402MHz

EUT Model:SNM927 Test distance: 3m Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Tested by: Wlif Wu

Power Source:AC 120V/60Hz



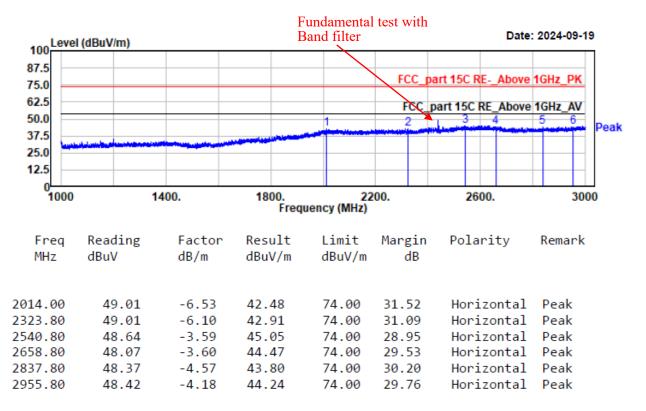
FCC Part 15.247 Page 25 of 78

Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Test Mode: BLE 1M 2440MHz Tested by: Wlif Wu

EUT Model:SNM927 Power Source:AC 120V/60Hz

Test distance: 3m

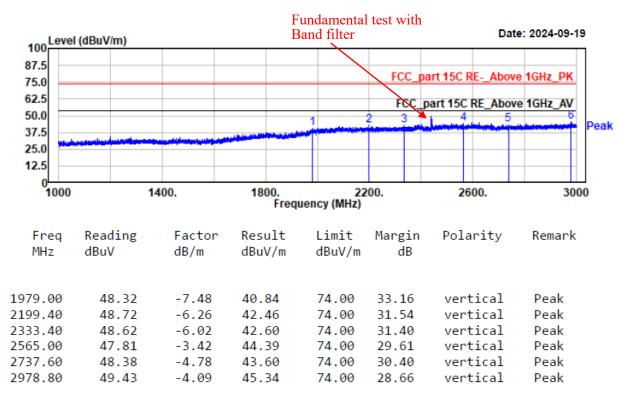


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Test Mode: BLE 1M 2440 Tested by: Wlif Wu

EUT Model:SNM927 Test distance: 3m Temp/Humi/ATM: 23.5°C/54%/100.5kPa

Power Source:AC 120V/60Hz



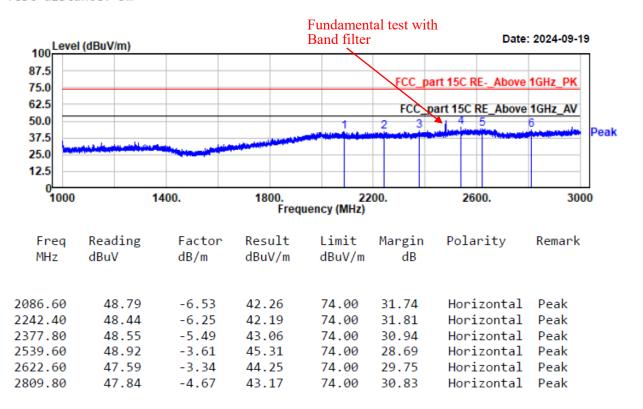
FCC Part 15.247 Page 27 of 78

Test Mode: BLE 1M 2480

EUT Model:SNM927 Test distance: 3m Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Tested by: Wlif Wu

Power Source:AC 120V/60Hz



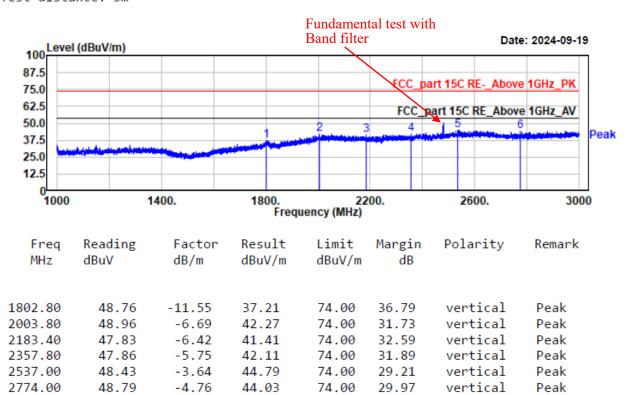
FCC Part 15.247 Page 28 of 78

Test Mode: BLE 1M 2480

EUT Model:SNM927 Test distance: 3m Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Tested by: Wlif Wu

Power Source: AC 120V/60Hz



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For 2.4G Wi-Fi:

After pre-scan 802.11b 802.11g 802.11n20/n40 mode, the worst case is 802.11b.

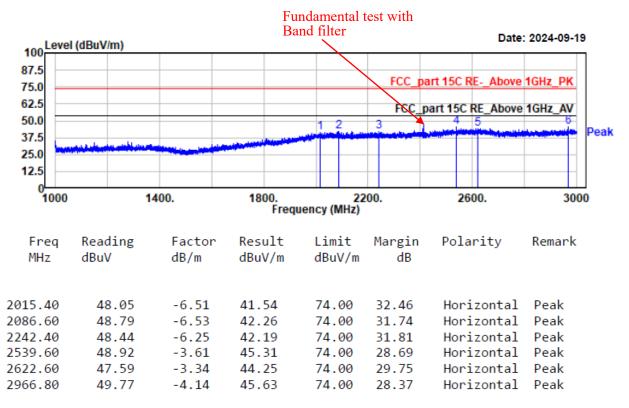
Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Report No.: 2407W89602E-RF-02

Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source:AC 120V/60Hz

Test distance: 3m



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Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model:SNM927 Power Source: AC 120V/60Hz Test distance: 3m

100 Level	(dBuV/m)			damental to d filter	est with	Dat	re: 2024-09-19
87.5					FCC n	art 15C REAbov	e 1GHz PK
75.0 62.5 50.0						part 15C RE_Abov	
37.5 25.0 12.5	A COLUMN TO THE PERSON		A STREET, STRE				
1000	1	400.	1800. Frequ	22 Jency (MHz)	00.	2600.	3000
Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2003.80	48.96	-6.69	42.27	74.00	31.73	vertical	Peak
2248.40	47.76	-6.23	41.53	74.00	32.47	vertical	Peak
2537.00	48.43	-3.64	44.79	74.00	29.21	vertical	Peak
2648.20	47.51	-3.37	44.14	74.00	29.86	vertical	Peak
2774.00 2947.60	48.79 48.69	-4.76 -4.22	44.03 44.47	74.00 74.00	29.97 29.53	vertical vertical	Peak Peak
2347.00	40.09	-4.22	44.4/	74.00	25.55	vei cicai	reak

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Test Mode: 802.11b 2437

EUT Model:SNM927 Test distance: 3m

2780.20

49.47

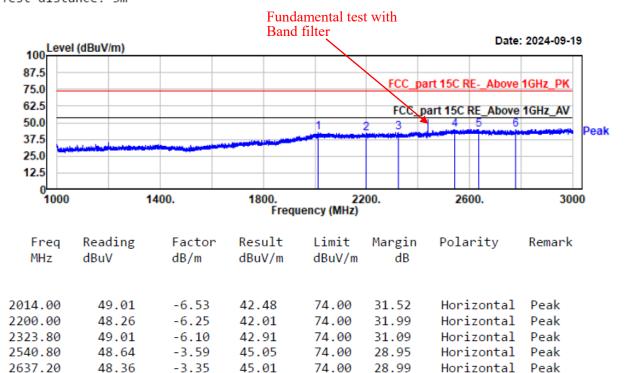
-4.74

44.73

Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Tested by: Wlif Wu

Power Source:AC 120V/60Hz



74.00

29.27

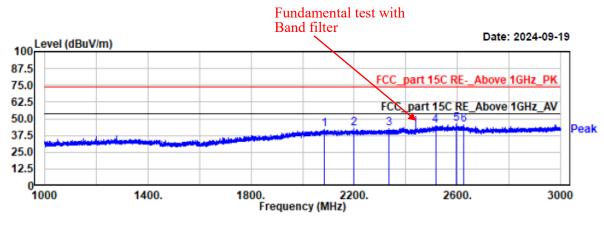
Horizontal Peak

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Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Test Mode: 802.11b 2437 Tested by: Wlif Wu

EUT Model:SNM927 Power Source:AC 120V/60Hz
Test distance: 3m



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2085.00	48.48	-6.50	41.98	74.00	32.02	vertical	Peak
2199.40	48.72	-6.26	42.46	74.00	31.54	vertical	Peak
2333.40	48.62	-6.02	42.60	74.00	31.40	vertical	Peak
2515.60	48.90	-3.93	44.97	74.00	29.03	vertical	Peak
2596.80	49.20	-3.31	45.89	74.00	28.11	vertical	Peak
2626.00	49.17	-3.33	45.84	74.00	28.16	vertical	Peak

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49.54

2895.00

-4.40

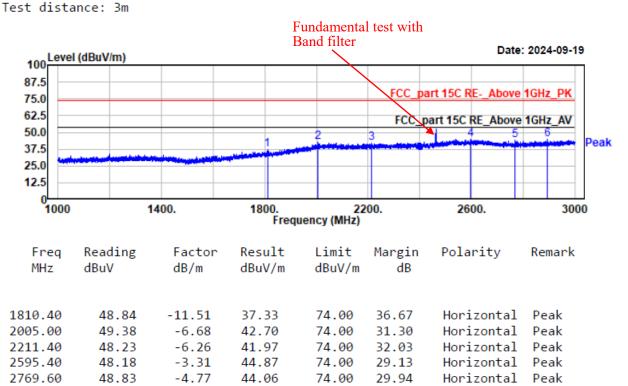
45.14

Horizontal Peak

Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa

Test Mode: 802.11b 2462 Tested by: Wlif Wu

EUT Model:SNM927 Power Source:AC 120V/60Hz



74.00

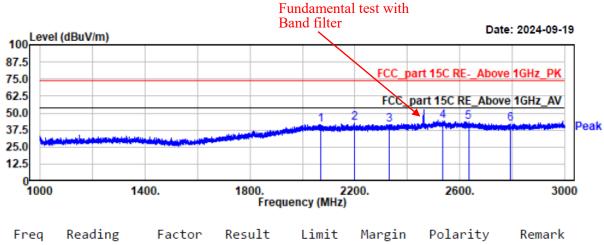
28.86

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Project No.:2407W89602E-RF Temp/Humi/ATM: 23.5℃/54%/100.5kPa Test Mode: 802.11b 2462 Tested by: Wlif Wu

Test Mode: 802.11b 2462 Tested by: Wlif Wu
EUT Model:SNM927 Power Source:AC 120V/60Hz

Test distance: 3m



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
2068.40	47.84	-6.25	41.59	74.00	32.41	vertical	Peak
2197.80	49.11	-6.27	42.84	74.00	31.16	vertical	Peak
2331.00	47.59	-6.04	41.55	74.00	32.45	vertical	Peak
2534.80	47.68	-3.67	44.01	74.00	29.99	vertical	Peak
2633.80	47.00	-3.35	43.65	74.00	30.35	vertical	Peak
2793.00	46.91	-4.71	42.20	74.00	31.80	vertical	Peak

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4) 1GHz~18GHz (worst case)

For BLE:

After pre-scan BLE 1M&BLE 2M mode, the worst case is BLE 1M

Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Report No.: 2407W89602E-RF-02

Test Mode: BLE 1M 2402MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

Date: 2024-08-10 100 Level (dBuV/m) Test with 3G High pass 87.5 FCC_part 15C RE-_Above 1GHz_PK 75.0 FCC part 15C RE_Above 1GH2 AV 62.5 50.0 37.5 25.0 12.5 6000. 12000. 15000. 9000. 18000 Frequency (MHz) Reading Margin Freq Factor Result Limit Polarity Remark MHz dBuV dB/m dBuV/m dBuV/m dΒ 39.40 1.09 horizontal Peak 4804.60 40.49 74.00 33.51 48.67 39.53 9.14 74.00 25.33 horizontal Peak 7206.00 horizontal Average 13600.40 26.54 15.62 42.16 54.00 11.84 horizontal Peak 13600.40 43.29 15.62 58.91 74.00 15.09 46.15 horizontal Average 14333.10 31.13 15.02 54.00 7.85 42.99 15.02 58.01 74.00 15.99 horizontal Peak 14333.10 44.96 9.04 horizontal Average 17401.60 29.92 15.04 54.00 17401.60 44.85 15.04 59.89 74.00 14.11horizontal Peak 30.55 17.09 47.64 6.36 horizontal Average 17996.60 54.00 17996.60 45.59 17.09 62.68 74.00 11.32 horizontal Peak

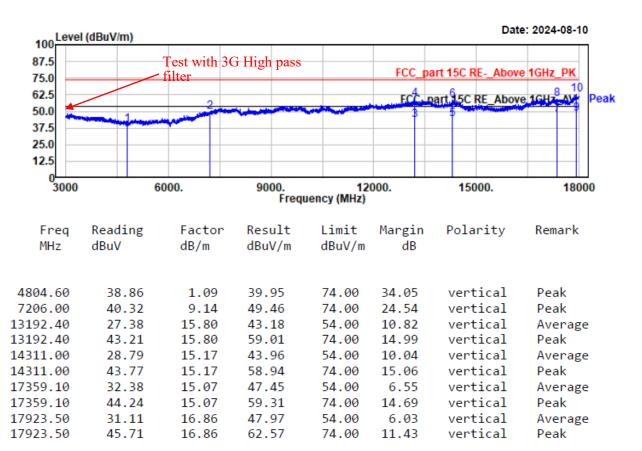
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Test Mode: BLE 1M 2402MHz

EUT Model: SNM927 Test distance: 3m Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Tested by: Wlif Wu

Power Source: AC 120V/60Hz

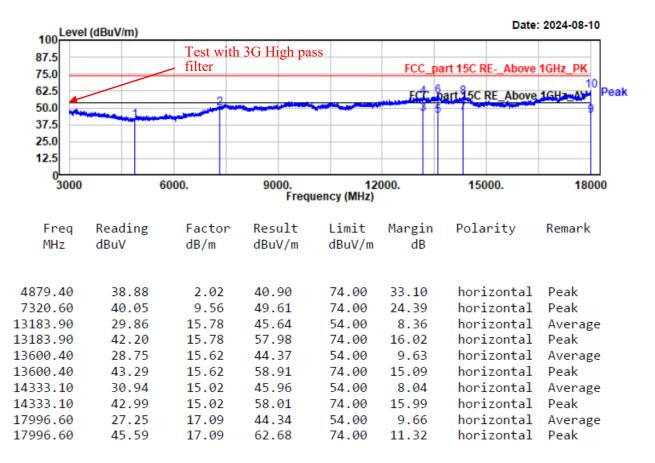


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Test Mode: BLE 1M 2440MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

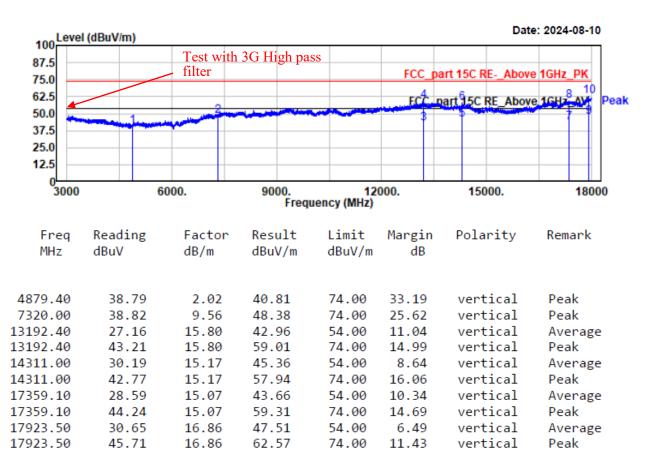


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Test Mode: BLE 1M 2440MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

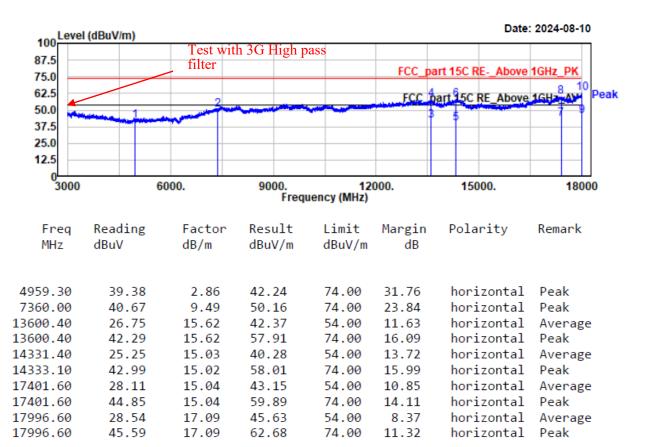
Test distance: 3m



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Test Mode: BLE 1M 2480MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz
Test distance: 3m



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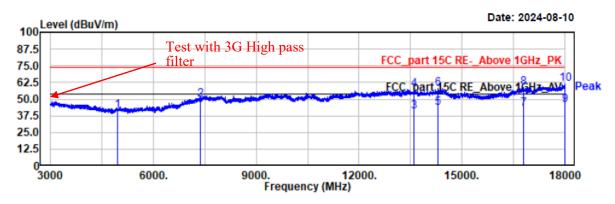
Project No.: 2407W89602E-RF Test Mode: BLE 1M 2480MHz Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Report No.: 2407W89602E-RF-02

Tested by: Wlif Wu

Power Source: AC 120V/60Hz

EUT Model: SNM927 Test distance: 3m



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4959.30	38.83	2.86	41.69	74.00	32.31	vertical	Peak
7360.00	40.45	9.49	49.94	74.00	24.06	vertical	Peak
13605.50	25.07	15.57	40.64	54.00	13.36	vertical	Average
13605.50	41.39	15.57	56.96	74.00	17.04	vertical	Peak
14311.00	28.53	15.17	43.70	54.00	10.30	vertical	Average
14311.00	42.77	15.17	57.94	74.00	16.06	vertical	Peak
16808.30	27.91	14.95	42.86	54.00	11.14	vertical	Average
16808.30	43.65	14.95	58.60	74.00	15.40	vertical	Peak
17998.30	28.59	17.09	45.68	54.00	8.32	vertical	Average
17998.30	44.23	17.09	61.32	74.00	12.68	vertical	Peak

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For WIFI:

After pre-scan 802.11b 802.11g 802.11n20/n40 mode, the worst case is 802.11b.

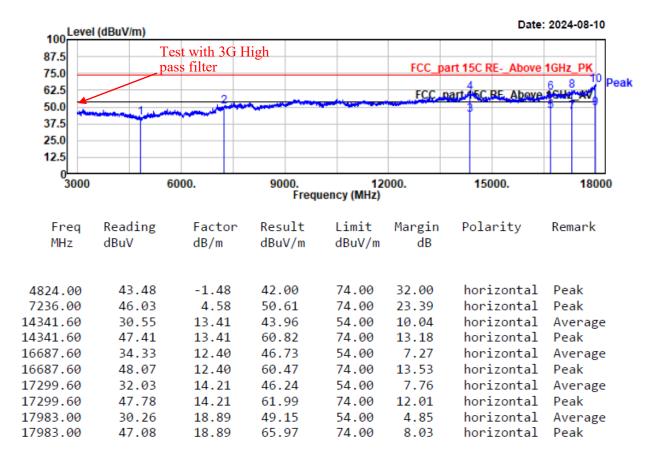
Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Report No.: 2407W89602E-RF-02

Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

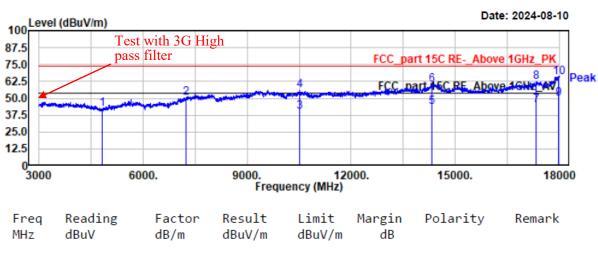


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Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Test distance: 3m

Power Source: AC 120V/60Hz



Freq MHz	Reading dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Polarity	Remark
4824.00	43.59	-1.48	42.11	74.00	31.89	vertical	Peak
7236.00	45.61	4.58	50.19	74.00	23.81	vertical	Peak
10526.80	30.48	9.39	39.87	54.00	14.13	vertical	Average
10526.80	46.31	9.39	55.70	74.00	18.30	vertical	Peak
14334.80	30.12	13.44	43.56	54.00	10.44	vertical	Average
14334.80	46.65	13.44	60.09	74.00	13.91	vertical	Peak
17343.80	30.89	14.24	45.13	54.00	8.87	vertical	Average
17343.80	47.74	14.24	61.98	74.00	12.02	vertical	Peak
17986.40	30.72	18.91	49.63	54.00	4.37	vertical	Average
17986.40	46.93	18.91	65.84	74.00	8.16	vertical	Peak

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Test Mode: 802.11b 2437MHz Tested by: Wlif Wu Power Source: AC 120V/60Hz

FUT Model: SNM927 Test distance: 3m



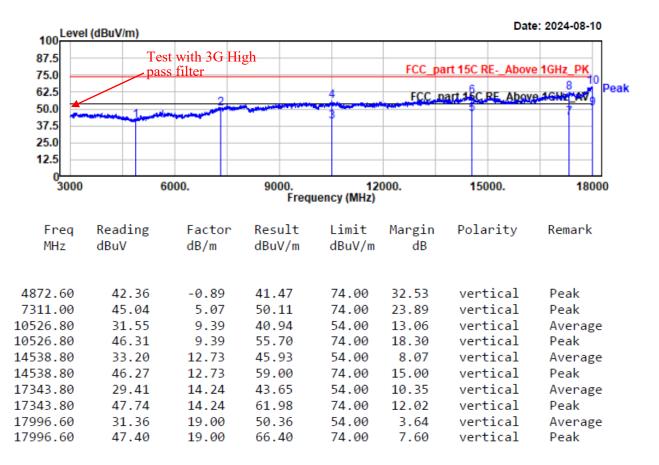
Date: 2024-08-10 100 Level (dBuV/m) Test with 3G High 87.5 pass filter FCC part 15C RE- Above 1GHz PK 75.0 Peak 62.5 FCC_part 45C RF, Above 4GH 50.0 37.5 25.0 12.5 9000. 6000. 12000. 3000 15000. 18000 Frequency (MHz) Freq Reading Factor Result Limit Margin Polarity Remark MHz dBuV dB/m dBuV/m dBuV/m dΒ 4872.60 43.22 -0.89 42.33 74.00 31.67 horizontal Peak 7311.00 45.41 5.07 50.48 74.00 23.52 horizontal Peak 29.20 38.64 54.00 10516.60 9.44 15.36 horizontal Average 10516.60 46.21 9.44 55.65 74.00 18.35 horizontal Peak 32.18 45.36 54.00 8.64 horizontal Average 14440.20 13.18 47.04 74.00 14440.20 13.18 60.22 13.78 horizontal Peak 31.15 14.21 45.36 54.00 8.64 horizontal Average 17299.60 17299.60 47.78 14.21 61.99 74.00 12.01 horizontal Peak 27.40 18.96 46.36 54.00 7.64 horizontal Average 17993.20 17993.20 45.11 18.96 64.07 74.00 9.93 horizontal Peak

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Test Mode: 802.11b 2437MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m



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horizontal Average

horizontal Average

horizontal Average

horizontal Peak

horizontal Peak

horizontal Peak

Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Test Mode: 802.11b 2462MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

14440.20

14440.20

17299.60

17299.60 17983.00

17983.00

32.18

47.04

33.05

47.78

26.37

45.08

13.18

13.18

14.21

14.21

18.89

18.89

45.36

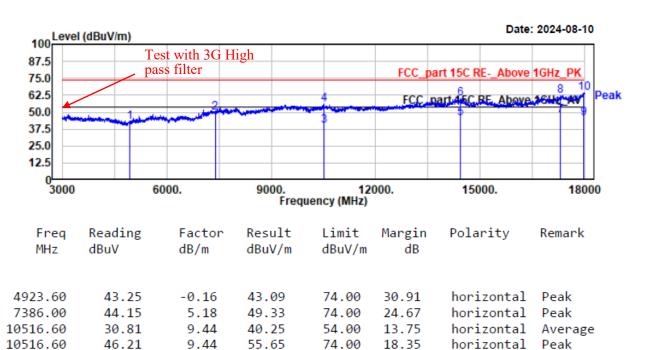
60.22

47.26

61.99

45.26

63.97



54.00

74.00

54.00

74.00

54.00

74.00

8.64

13.78

6.74

12.01

8.74

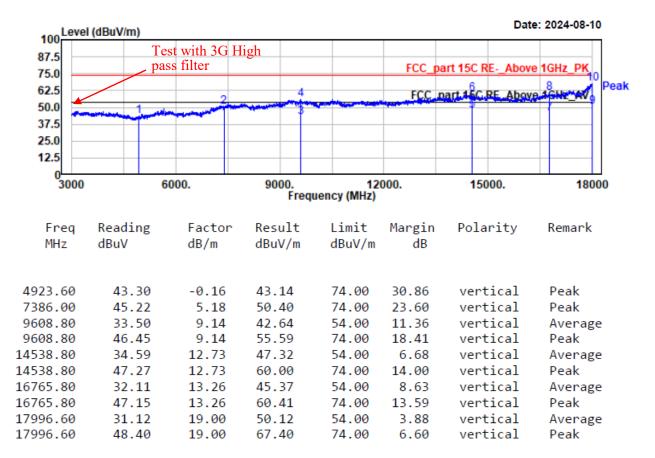
10.03

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Test Mode: 802.11b 2462MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m



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5) 18GHz~25GHz (worst case)

For Wi-Fi:

After pre-scan 802.11b 802.11g 802.11n20/n40 mode, the worst case is 802.11b.

For BLE:

After pre-scan BLE1M 2M mode, the test results are better than WiFi, so only WiFi results were recorded.

Report No.: 2407W89602E-RF-02

Project No.: 2407W89602E-RF Temp/Humi/ATM: 21.3℃/51%/101.1kPa

Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 1.5m

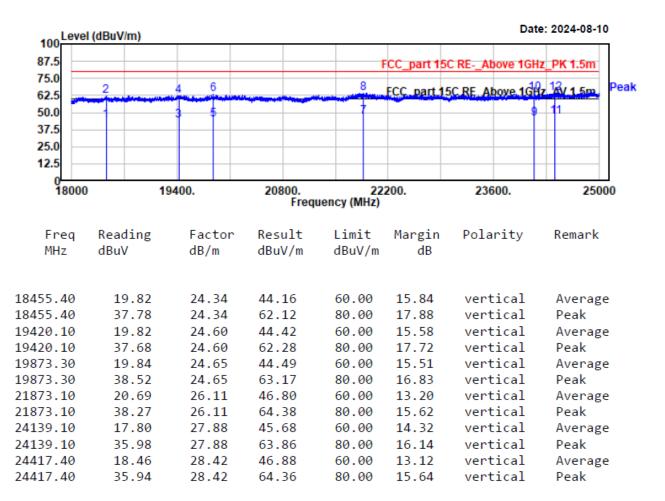
100 Level (dBuV/m) Date: 2024-08-10 87.5 FCC_part 15C RE-_Above 1GHz_PK 1.5m 75.0 6 FCC part 15C RE Above 1GHz AV 1.5m Peak 62.5 50.0 37.5 25.0 12.5 **1**8000 19400. 20800. 22200. 23600. 25000 Frequency (MHz) Freq Reading Factor Result Limit Margin Polarity Remark MHz dBuV dB/m dBuV/m dBuV/m dΒ 18751.30 19.07 24.45 43.52 60.00 16.48 horizontal Average 18751.30 24.45 61.86 80.00 18.14 horizontal Peak 37.41 24.59 44.49 15.51 horizontal Average 19453.10 19.90 60.00 19453.10 38.50 24.59 63.09 80.00 16.91 horizontal Peak 20431.00 19.40 25.43 44.83 60.00 15.17 horizontal Average 20431.00 37.10 25.43 62.53 80.00 17.47 horizontal Peak 26.08 46.90 60.00 13.10 horizontal Average 21940.20 20.82 21940.20 38.98 26.08 65.06 80.00 14.94 horizontal Peak 22563.90 19.82 26.23 46.05 60.00 13.95 horizontal Average 22563.90 37.59 26.23 63.82 80.00 16.18 horizontal Peak 24366.80 19.64 28.31 47.95 60.00 12.05 horizontal Average 24366.80 28.31 65.38 80.00 14.62 horizontal Peak 37.07

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Test Mode: 802.11b 2412MHz Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 1.5m



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Restricted Bands Emissions:

Pre-Scan with Wi-Fi 802.11b, 802.11g, 802.11n, 802.11nHT20, 802.11nHT40 modes and BLE in the X,Y and Z axes of orientation, and the worst case **Z-axis of orientation** is recorded

Report No.: 2407W89602E-RF-02

Note:

Factor (dB/m) = Antenna Factor (dB/m) + Cable Loss (dB) - Amplifier Gain (dB) Level (dB μ V/m) = Reading (dB μ V) + Factor (dB/m) Margin (dB) = Limit (dB μ V/m) –Level (dB μ V/m)

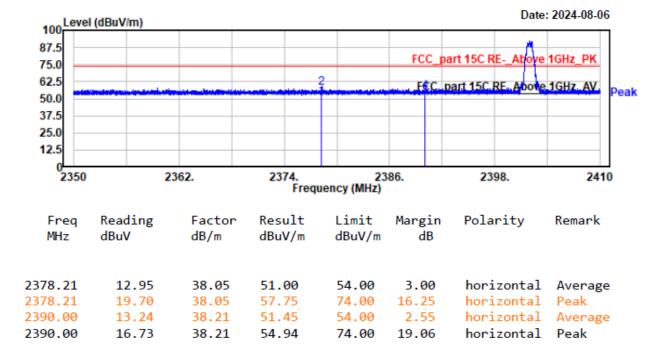
For BLE:

Project No.: 2407W89602E-RF Temp/Humi/ATM: 23.9℃/60%/100.1kPa

Test Mode: 1M-2402 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m

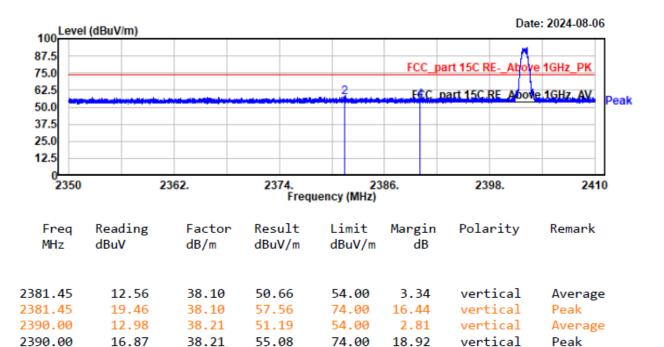


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Test Mode: 1M-2402 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m

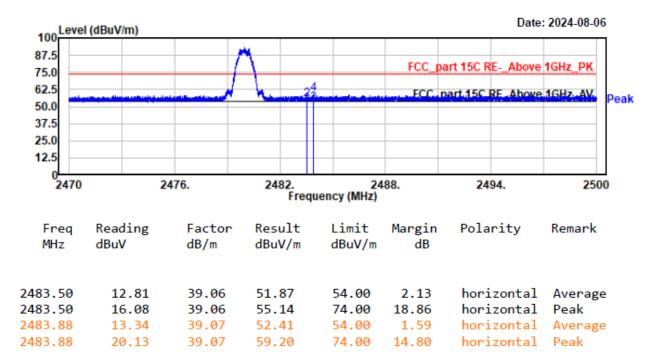


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Test Mode: 1M-2480 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m

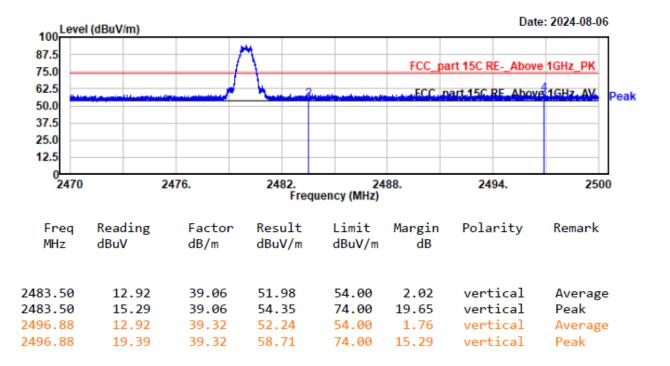


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Test Mode: 1M-2480 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m

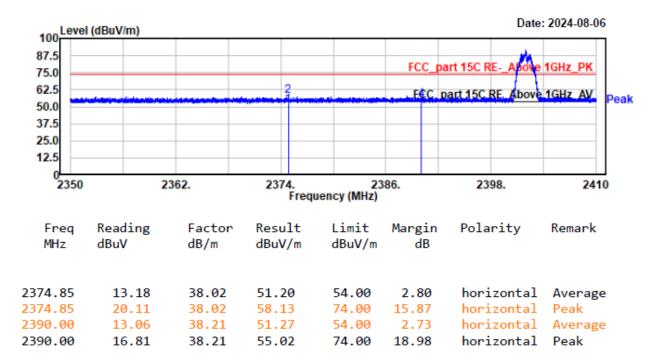


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Test Mode: 2M-2402 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m

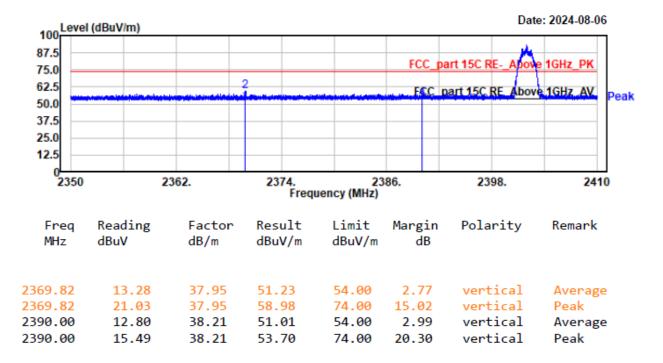


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Test Mode: 2M-2402 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m



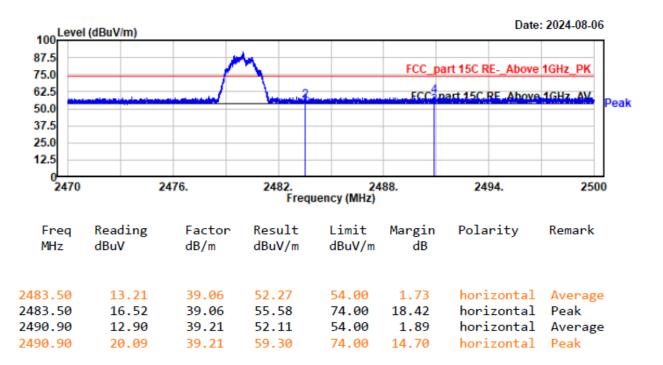
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Test Mode: 2M-2480

EUT Model: SNM927 Test distance: 3m Temp/Humi/ATM: 23.9℃/60%/100.1kPa

Tested by: Wlif Wu

Power Source: AC120V/60Hz

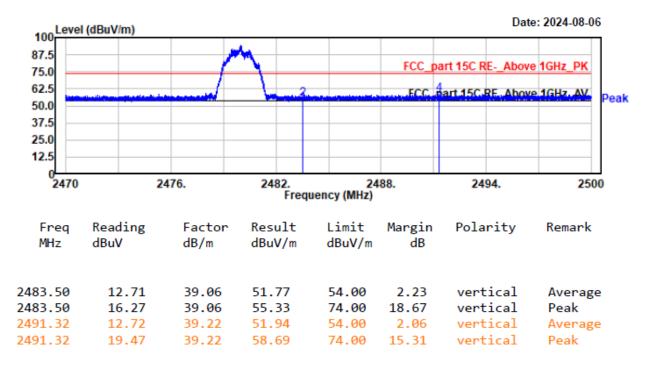


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Test Mode: 2M-2480 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC120V/60Hz

Test distance: 3m



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For WiFi:

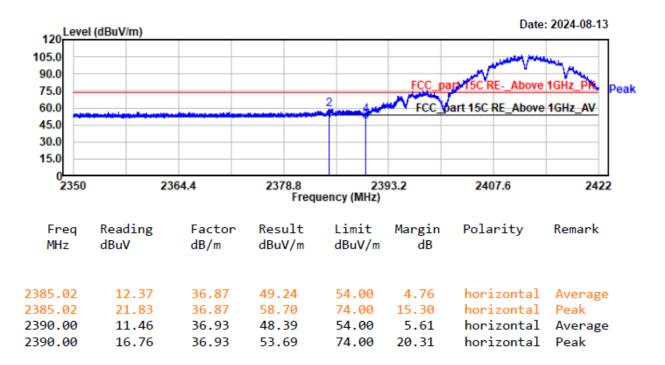
Project No.: 2407W89602E-RF Temp/Humi/ATM: 23.6℃/56%/100.1kPa

Report No.: 2407W89602E-RF-02

Test Mode: 11b-2412 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

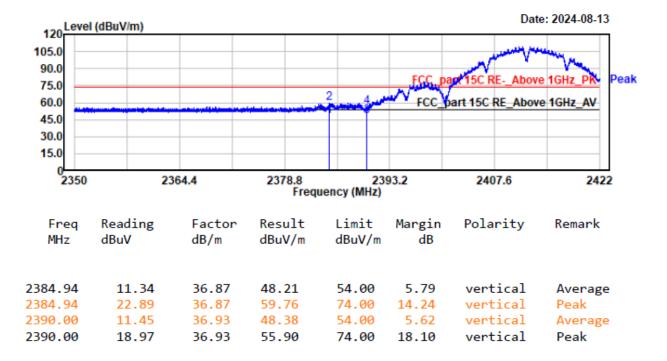


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Test Mode: 11b-2412 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m



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Test Mode: 11b-2462

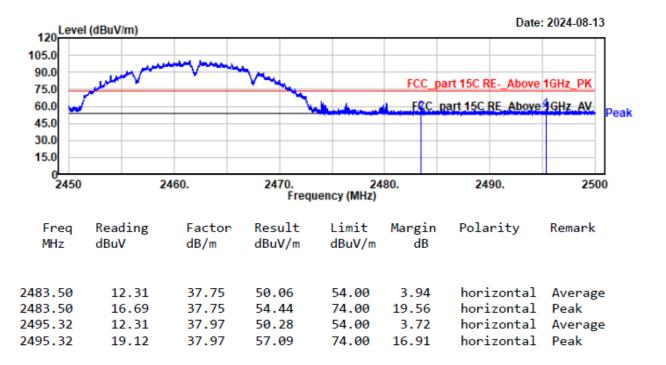
EUT Model: SNM927

Test distance: 3m

Temp/Humi/ATM: 23.6℃/56%/100.1kPa

Tested by: Wlif Wu

Power Source: AC 120V/60Hz



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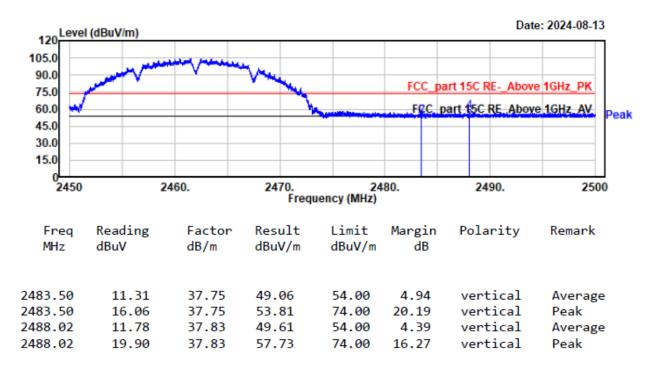
Test Mode: 11b-2462 EUT Model: SNM927

Test distance: 3m

Temp/Humi/ATM: 23.6℃/56%/100.1kPa

Tested by: Wlif Wu

Power Source: AC 120V/60Hz



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Test Mode: 11g-2412

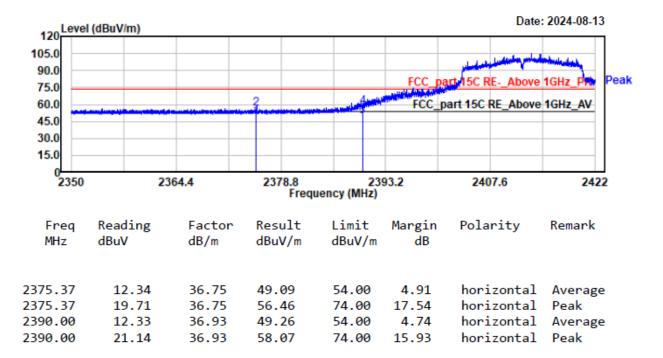
EUT Model: SNM927

Test distance: 3m

Temp/Humi/ATM: 23.6℃/56%/100.1kPa

Tested by: Wlif Wu

Power Source: AC 120V/60Hz

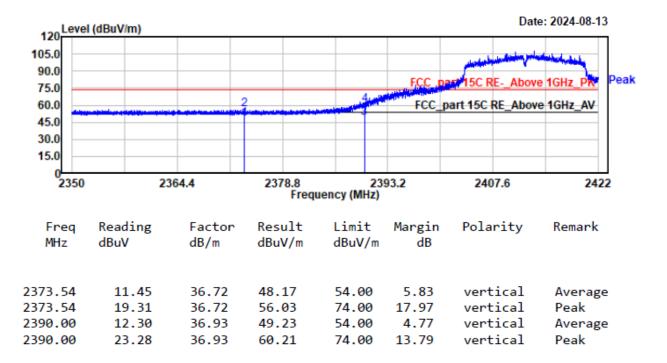


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Test Mode: 11g-2412 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

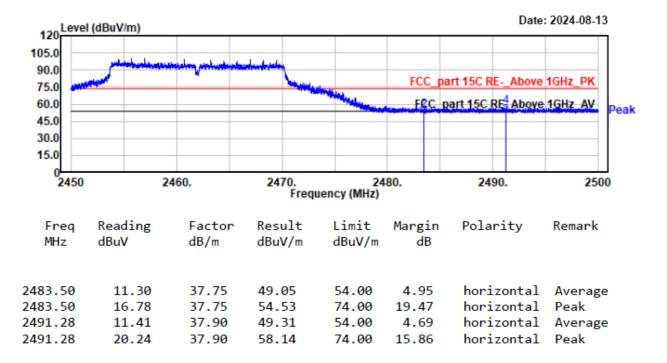


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Test Mode: 11g-2462 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

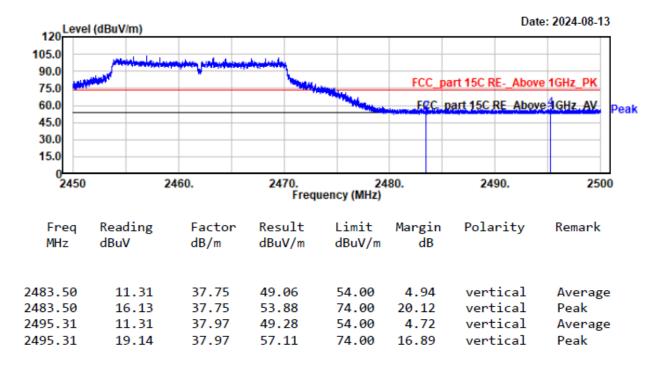


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Test Mode: 11g-2462 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

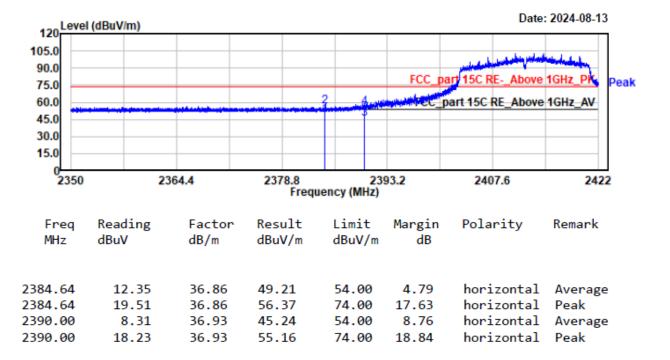


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Test Mode: 11n20-2412 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

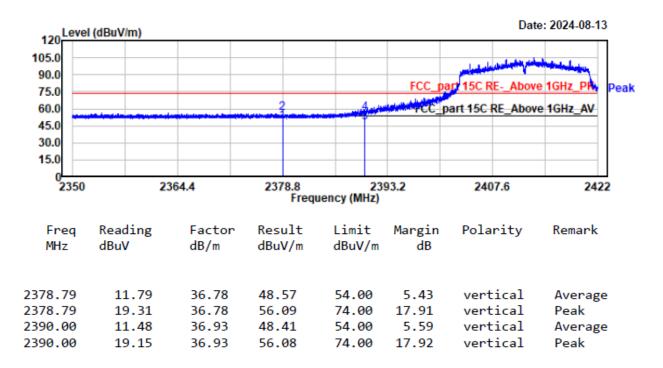


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Test Mode: 11n20-2412 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

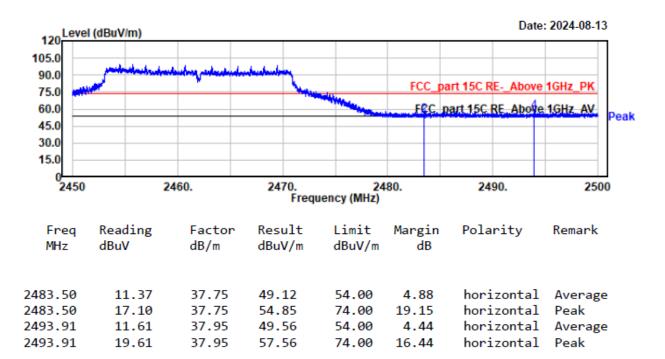


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Test Mode: 11n20-2462 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

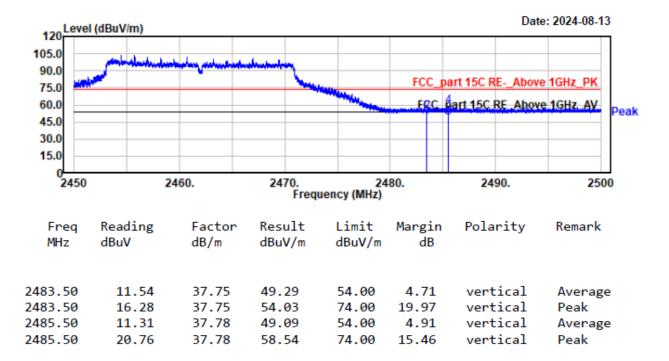


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Test Mode: 11n20-2462 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

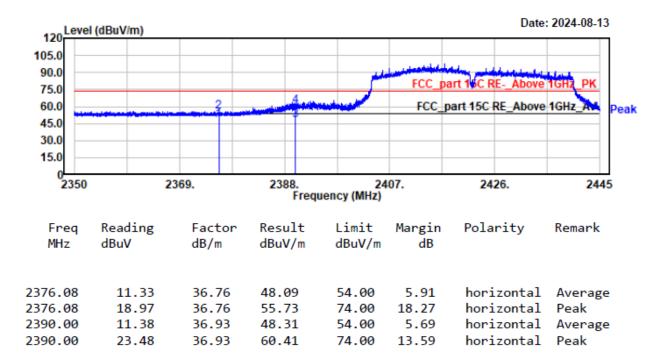


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Test Mode: 11n40-2422 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

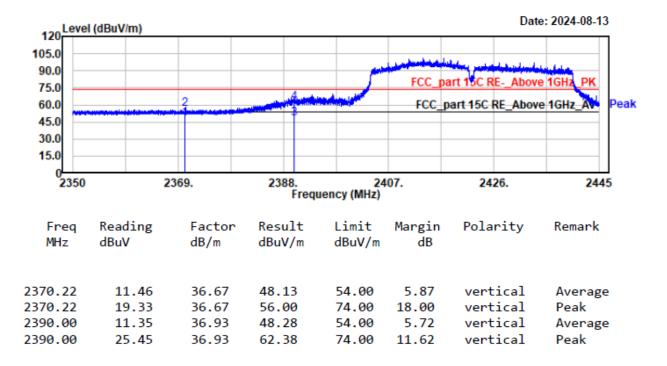


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Test Mode: 11n40-2422 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

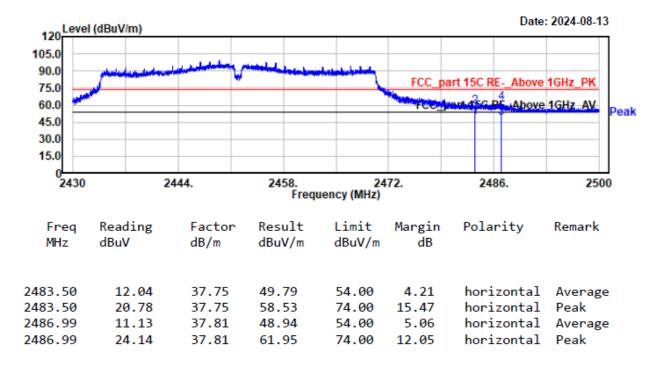


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Test Mode: 11n40-2452 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m

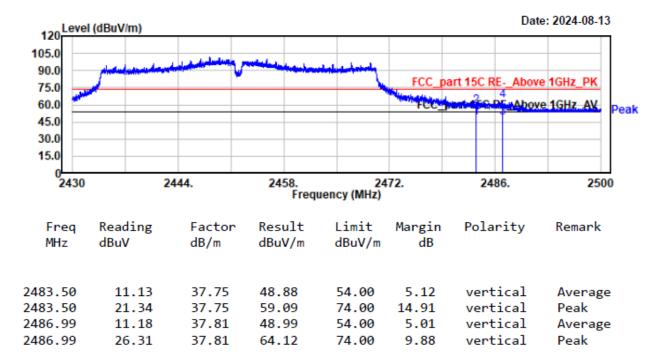


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Test Mode: 11n40-2452 Tested by: Wlif Wu

EUT Model: SNM927 Power Source: AC 120V/60Hz

Test distance: 3m



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FCC §15.247(b) (3) – SOPT CHECK MAXIMUM CONDUCTED OUTPUT POWER

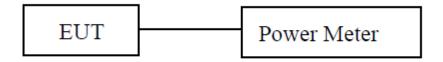
Report No.: 2407W89602E-RF-02

Applicable Standard

According to FCC §15.247(b) (3), for systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode.

EUT Setup

For WiFi & BLE:



Test Procedure

According to ANSI C63.10-2020 11.9.2.3.1 Method AVGPM

- a) As an alternative to spectrum analyzer or EMI receiver measurements, measurements may be performed using a wideband RF power meter with a thermocouple detector or equivalent if all of the conditions listed below are satisfied:
- 1) The EUT is configured to transmit continuously, or to transmit with a constant duty cycle.
- 2) At all times when the EUT is transmitting, it shall be transmitting at its maximum power control level.
- 3) The integration period of the power meter exceeds the repetition period of the transmitted signal by at least a factor of five.
- b) If the transmitter does not transmit continuously, measure the duty cycle, D, of the transmitter output signal as described in 11.6.
- c) Measure the average power of the transmitter. This measurement is an average over both the ON and OFF periods of the transmitter.
- d) Adjust the measurement in dBm by adding $[10 \log (1 / D)]$, where D is the duty cycle.

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Test Data

For BLE (worst case):

Test Mode:	Transmitting	Test Engineer:	Ash Lin		
Test Date: 2024-08-10		Test Voltage:	DC3.8V	DC3.8V	
Test Result: Test Modes	Compliance Test Frequency (MHz)	Peak Out	Temp.: 24. Humi.: 54% Atm.:100.2 Conducted out Power Bm)	⁄o	
D. D. D. G.	2.100		~ -	<0.0	
BLE 1Mbps	2480	2.	35	≤30	

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For WIFI (worst case):

Test Mode:	Transmitting		Test Engineer:	Ash Lin	
Test Date:	2024-08-10		Test Voltage:	DC3.8V	
Test Result:	ult: Compliance		Environment:	Temp.: 24.7°C Humi.: 54% Atm.:100.2kPa	
Test Modes		Test Frequency (MHz)	Maximum Conducted Average Output Power (dBm)		Limit (dBm)
802.11b		2412	18.92		30

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EUT PHOTOGRAPHS

Please refer to the attachment 2407W89602E-RF-XP EUT EXTERNAL PHOTOGRAPHS and 2407W89602E-RF-INP EUT INTERNAL PHOTOGRAPHS.

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TEST SETUP PHOTOGRAPHS

Please refer to the attachment 2407W89602E-RF-TSP SETUP PHOTOGRAPHS.

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Declarations

Report No.: 2407W89602E-RF-02

- 1. Bay Area Compliance Laboratories Corp. (Xiamen) is not responsible for authenticity of any information provided by the applicant. Information from the applicant that may affect test results are marked with an asterisk "★".
- 2. Unless otherwise stated, the results shown in this test report refer only to the sample(s) tested.
- 3. Unless required by the rule provided by the applicant or product regulations, then decision rule in this report did not consider the uncertainty.
- 4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor k=2 with the 95.45% confidence interval.
- 5. This report cannot be reproduced except in full, without prior written approval of Bay Area Compliance Laboratories Corp. (Xiamen).
- 6. This report is valid only with a valid digital signature. The digital signature may be available only under the adobe software above version 7.0.

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

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