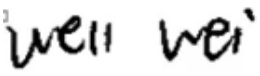
TEST REPORT

Application No.:	SUCR2405000148MO
Applicant:	NETPRISMA INC.
Address of Applicant:	1301 6TH AVE, SEATTLE, WA, 98101-2304, UNITED STATES
Manufacturer:	NETPRISMA INC.
Address of Manufacturer:	1301 6TH AVE, SEATTLE, WA, 98101-2304, UNITED STATES
EUT Description:	LTE-A Cat 6 M.2 Module
Model No.:	LCUK54-WWD
Trade Mark:	Vrileg
FCC ID:	2BEY3LCUK54WWDA
Standards:	47 CFR Part 2.1091 FCC KDB 447498 D01 v06
Date of Receipt:	2024/05/09
Date of Issue:	2024/06/12
Test Result:	**PASS***

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Well Wei
Wireless Laboratory Manager

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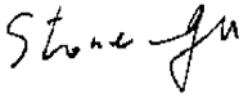
1 Version

Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2024/06/12		Original

Prepared By		 **(Nick Hu) / Test Engineer**
Checked By		 **(Stone Gu) / Reviewer**

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2 General Information

2.1 Client Information

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Address of Applicant:	1301 6TH AVE, SEATTLE, WA, 98101-2304, UNITED STATES
Manufacturer:	NETPRISMA INC.
Address of Manufacturer:	1301 6TH AVE, SEATTLE, WA, 98101-2304, UNITED STATES

2.2 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

- **A2LA (Certificate No. 6336.01)**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

- **Innovation, Science and Economic Development Canada**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

- **FCC –Designation Number: CN1312**

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327

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2.3 General Description of EUT

EUT Description:	LTE-A Cat 6 M.2 Module			
Model No.:	LCUK54-WWD			
Trade Mark:	Vrileg			
Hardware Version:	R1.0			
Software Version:	LCUK54WWDBL0101			
Power Supply:	5V			
Antenna Type:	PIFA Antenna			
Antenna Gain:	WCDMA Band II:	3.87dBi (NPANT001)	WCDMA Band IV:	3.91dBi (NPANT001)
	WCDMA Band V:	3.32dBi (NPANT002)		
	LTE Band 2:	3.87dBi (NPANT001)	LTE Band 4:	3.91dBi (NPANT001)
	LTE Band 5:	3.32dBi (NPANT002)	LTE Band 7:	3.16dBi (NPANT002)
	LTE Band 12:	3.19dBi (NPANT004)	LTE Band 13:	3.28dBi (NPANT002)
	LTE Band 14:	3.25dBi (NPANT002)	LTE Band 17:	3.19dBi (NPANT004)
	LTE Band 25:	3.87dBi (NPANT001)	LTE Band 26:	3.32dBi (NPANT002)
	LTE Band 30:	0.98dBi (NPANT003)	LTE Band 38:	3.07dBi (NPANT002)
	LTE Band 41:	3.16dBi (NPANT002)	LTE Band 42:	2.35dBi (NPANT004)
	LTE Band 43:	1dBi (NPANT003)	LTE Band 48:	1dBi (NPANT003)
	LTE Band 66:	3.91dBi (NPANT001)	LTE Band 71:	3.07dBi (NPANT001)
	Note: The antenna gain are derived from the gain information report provided by the manufacturer.			
Remark: As above information is provided and confirmed by the applicant. SGS is not liable to the accuracy, suitability, reliability or/and integrity of the information.				

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3 RF Exposure Evaluation

3.1 RF Exposure Compliance Requirement

3.1.1 Limits

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm2)	Averaging time (minutes)
(A) Limits for Occupational/Controlled Exposures				
0.3-3.0	614	1.63	*(100)	6
3.0-30	1842/f	4.89/f	*(900/f2)	6
30-300	61.4	0.163	1.0	6
300-1500	/	/	f/300	6
1500-100,000	/	/	5	6
(B) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	30
1.34-30	824/f	2.19/f	*(180/f2)	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
RF exposure compliance will need to be determined with respect to 1.1307(c) and (d) of the FCC rules. The emissions should be within the limits at 300kHz in Table 1 of 1.1310(use the 300kHz limits for 150kHz:614V/m,1.63A/m).

Friis Formula

Friis transmission formula: $Pd = (Pout*G)/(4* Pi * R^2)$

Where

Pd = power density in mW/cm2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

Pi = 3.1416

R = distance between observation point and center of the radiator in cm

Pd id the limit of MPE, 1 mW/cm2. If we know the maximum gain of the antenna and the total power input to the antenna, through the calculation, we will know the distance r where the MPE limit is reached.

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3.1.2 Test Procedure

Software provided by client enabled the EUT to transmit data at lowest, middle and highest channel individually

3.1.3 EUT RF Exposure Evaluation

Output Power Into Antenna & RF Exposure Evaluation Distance:
This confirmed that the device comply with MPE limit.

Operating Band	Frequency (MHz)	Antenna Gain (dBi)	Max Conducted Power (dBm)	EIRP(ERP) (dBm)	EIRP(ERP) Limit (dBm)	Power Density at R = 20 cm (mW/cm2)	Limit (mW/cm2)	Gain according to EIRP(ERP) (dBi)	Gain according to Pd (dBi)	Max Gain Allowed (dBi)	conclusion
WCDMA Band II	1852.4	3.87	25.00	28.87	33.00	0.1534	1.0000	8.00	12.01	8.00	Pass
WCDMA Band IV	1712.4	3.91	25.00	28.91	30.00	0.1548	1.0000	5.00	12.01	5.00	Pass
WCDMA Band V	826.4	3.32	25.00	26.17	38.45	0.1351	0.5509	15.60	9.42	9.42	Pass
LTE Band 2	1850.7	3.87	24.50	28.37	33.00	0.1367	1.0000	8.50	12.51	8.50	Pass
LTE Band 4	1710.7	3.91	24.50	28.41	30.00	0.1380	1.0000	5.50	12.51	5.50	Pass
LTE Band 5	824.7	3.32	24.50	25.67	38.45	0.1204	0.5498	16.10	9.91	9.91	Pass
LTE Band 7	2502.5	3.16	24.00	27.16	33.00	0.1034	1.0000	9.00	13.01	9.00	Pass
LTE Band 12	699.7	3.19	24.50	25.54	34.77	0.1169	0.4665	12.42	9.20	9.20	Pass
LTE Band 13	779.5	3.28	24.50	25.63	34.77	0.1193	0.5197	12.42	9.66	9.66	Pass
LTE Band 14	790.5	3.25	24.50	25.60	34.77	0.1185	0.5270	12.42	9.73	9.73	Pass
LTE Band 17	706.5	3.19	24.50	25.54	34.77	0.1169	0.4710	12.42	9.24	9.24	Pass
LTE Band 25	1850.7	3.87	24.50	28.37	33.00	0.1367	1.0000	8.50	12.51	8.50	Pass
LTE Band 26 (814-824)	814.7	3.32	24.50	25.67	NA	0.1204	0.5431	NA	9.86	9.86	Pass
LTE Band 26 (824-849)	824.7	3.32	24.50	25.67	38.45	0.1204	0.5498	16.10	9.91	9.91	Pass
LTE Band 30	2307.5	0.98	23.00	23.98	23.98	0.0497	1.0000	0.98	14.01	0.98	Pass
LTE Band 38	2572.5	3.07	24.00	27.07	33.00	0.1013	1.0000	9.00	13.01	9.00	Pass
LTE Band 41	2498.5	3.16	24.00	27.16	33.00	0.1034	1.0000	9.00	13.01	9.00	Pass
LTE Band 42	3452.5	2.35	22.00	24.35	30.00	0.0542	1.0000	8.00	15.01	8.00	Pass
LTE Band 43 (3600-3700)	3602.5	1.00	22.00	23.00	23.00	0.0397	1.0000	1.00	15.01	1.00	Pass
LTE Band 48	3552.5	1.00	22.00	23.00	23.00	0.0397	1.0000	1.00	15.01	1.00	Pass
LTE Band 66	1710.7	3.91	24.50	28.41	30.00	0.1380	1.0000	5.50	12.51	5.50	Pass
LTE Band 71	665.5	3.07	24.50	25.42	34.77	0.1137	0.4437	12.42	8.98	8.98	Pass
Bluetooth	2402.0	5.00	23.00	28.00	N/A	0.1255	1.0000	N/A	N/A	N/A	N/A
WLAN2.4GHz	2412.0	5.00	23.00	28.00	N/A	0.1255	1.0000	N/A	N/A	N/A	N/A
WLAN5GHz	5180.0	5.00	23.00	28.00	N/A	0.1255	1.0000	N/A	N/A	N/A	N/A

Note:
1.This MPE analysis is applicable to any collocated transmitters with transmit power for WLAN is less than or equal to 28dBm and for Bluetooth is less than or equal to 28dBm.
2.A maximum antenna gain of 5dBi for WLAN/BT has been assumed for all collocated antennas.

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3.1.4 Exposure calculations for multiple sources

In order to ensure compliance with the MPE for a controlled environment, the sum of the ratios of the power density to the corresponding MPE should not exceed unity. That is

$$\sum_{i=1}^{n} \frac{S_i}{MPE_i} \leq 1$$

The product also has multiple transmitters The Simultaneous Transmission Possibilities are as below:

Simultaneous Tx Combination	Configuration
1	WWAN + WiFi 2.4G + WiFi 5G + Bluetooth

No.	Mode	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)	Result Ratio	Total Ratio	Limit	Result
1	LTE Band 71*	0.1137	0.4437	0.2563	0.6328	1.0000	Pass
	Bluetooth	0.1255	1.0000	0.1255			
	WiFi 2.4G	0.1255	1.0000	0.1255			
	WiFi 5G	0.1255	1.0000	0.1255			

Remark*: This WWAN Band was recalculated on worst Band.

Note: Considering the WWAN module collocation with the WLAN and Bluetooth transmitter of the EIRP performance listed in the table above, the aggregated (power density /limit) is smaller than 1, and MPE of 3 collocated transmitters is compliant.

---End of Report---

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