TEST REPORT

Application No.:	SZCR2412004600AT
Applicant:	Fujian Newland Payment Technology Co.,Ltd.
Address of Applicant:	No. B602, Building #1, Haixia Jingmao Plaza, Fuzhou Bonded Area 350015, Fujian, China
Manufacturer:	Fujian Newland Payment Technology Co.,Ltd.
Address of Manufacturer:	No. B602, Building #1, Haixia Jingmao Plaza, Fuzhou Bonded Area 350015, Fujian, China
EUT Description:	Unattended Terminal
Model No.:	U2000
Trade Mark:	Newland
FCC ID:	2AM6U-U2000
Standards:	FCC 47 CFR Part 2.1091 FCC KDB 447498 D01 v06
Date of Receipt:	2024/12/27
Date of Issue:	2025/01/14
Test Result:	**PASS***

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

Keny Xu
EMC Laboratory Manager

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Revision Record				
Version	**Chapter**	**Date**	**Modifier**	**Remark**
01		2025/01/14		Original

Authorized for issue by:				
		Donjon Huang/Project Engineer		
		Eric Fu/Reviewer		

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2 Contents

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3 General Information

3.1 General Description of EUT

EUT Description:	Unattended Terminal			
Model No.:	U2000			
Trade Mark:	Newland			
Hardware Version:	V1.1			
Software Version:	NDroid 6			
Power Supply:	DC 12V from internal rechargeable battery which can be charge by AC/DC adapter Adapter model: ADS-25SGP-12			
Antenna Type:	WWAN:☒ External, ☐ Integrated BT&WLAN: ☐ External, ☒ Integrated			
Antenna Gain:	LTE Band 2:	1.85dBi	LTE Band 4:	0.72dBi
	LTE Band 5:	2.47dBi	LTE Band 7:	1.02dBi
	LTE Band 12:	-2.32dBi	LTE Band 13:	0.94dBi
	LTE Band 14:	1.31dBi	LTE Band 17:	-1.89dBi
	LTE Band 25:	1.85dBi	LTE Band 26:	2.47dBi
	LTE Band 41:	4.21dBi	LTE Band 66:	1.21dBi
	LTE Band 71:	-3.17dBi		
	Bluetooth:	2.01dBi	WIFI 2.4G:	2.01dBi
	5G WIFI(U-NII-1):	0.76dBi;	5G WIFI(U-NII-2A):	1.35dBi;
	5G WIFI(U-NII-2C):	1.08dBi;	5G WIFI(U-NII-3):	0.92dBi;
	5.8G:	3dBi;		
	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.				

3.2 Test Location

All tests were performed at:
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen Branch
No. 1 Workshop, M-10, Middle Section, Science & Technology Park, Nanshan District, Shenzhen, Guangdong, China. 518057.
Tel: +86 755 2601 2053 Fax: +86 755 2671 0594
No tests were sub-contracted.

3.3 Test Facility

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

• A2LA (Certificate No. 3816.01)
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

• VCCI (Member No. 1937)
The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen EMC laboratory have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC –Designation Number: CN1336
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.
Designation Number: CN1336. Test Firm Registration Number: 787754.

• Innovation, Science and Economic Development Canada
SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.
CAB identifier: CN0006.
IC#: 4620C.

4 RF Exposure Evaluation

4.1 RF Exposure Compliance Requirement

4.1.1 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.

4.1.2 Test Procedure

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

4.1.3 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)	conclusion
LTE Band 2	1850.7	1.85	25.00	26.85	33.00	0.0963	1.0000	Pass
LTE Band 4	1710.7	0.72	25.00	25.72	30.00	0.0743	1.0000	Pass
LTE Band 5	824.7	2.47	25.00	25.32	38.45	0.1111	0.5498	Pass
LTE Band 7	2502.5	1.02	25.00	26.02	33.00	0.0796	1.0000	Pass
LTE Band 12	699.7	-2.32	25.00	20.53	34.77	0.0369	0.4665	Pass
LTE Band 13	779.5	0.94	25.00	23.79	34.77	0.0781	0.5197	Pass
LTE Band 14	790.5	1.31	25.00	24.16	34.77	0.0851	0.5270	Pass
LTE Band 17	706.5	-1.89	25.00	20.96	34.77	0.0407	0.4710	Pass
LTE Band 25	1852.5	1.85	25.00	26.85	33.00	0.0963	1.0000	Pass
LTE Band 26 (814-824)	814.7	2.47	25.00	25.32	NA	0.1111	0.5431	Pass
LTE Band 26 (824-849)	824.7	2.47	25.00	25.32	33.00	0.1111	0.5498	Pass
LTE Band 41	2498.5	4.21	25.00	29.21	33.00	0.1659	1.0000	Pass
LTE Band 66	1710.7	1.21	25.00	26.21	30.00	0.0831	1.0000	Pass
LTE Band 71	665.5	-3.17	25.00	19.68	34.77	0.0303	0.4437	Pass
Bluetooth	2402.0	2.01	9.50	11.51	30.00	0.0028	1.0000	Pass
2.4GWIFI	2412.0	2.01	19.00	21.01	30.00	0.0251	1.0000	Pass
5GWIFI	5180.0	1.35	18.00	19.35	30.00	0.0171	1.0000	Pass
5.8G	5807.0	3.00	-4.00	-1.00	30.00	0.0002	1.0000	Pass

4.1.4 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+WIFI5G+BT+5.8G
2	WWAN+WIFI2.4G+WIFI5G+5.8G

No.	Mode	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)	Result Ratio	Total Ratio	Limit	Result
1	LTE Band 26 (814-824)	0.1111	0.5431	0.2046	0.2247	1.0000	Pass
	WiFi 5G	0.0171	1.0000	0.0171			
	Bluetooth	0.0028	1.0000	0.0028			
	5.8G	0.0002	1.0000	0.0002			
2	LTE Band 26 (814-824)	0.1111	0.5431	0.2046	0.2470	1.0000	Pass
	WiFi 2.4G	0.0251	1.0000	0.0251			
	WiFi 5G	0.0171	1.0000	0.0171			
	5.8G	0.0002	1.0000	0.0002			

Remark: This WWAN Band was recalculated on worst Band.

For NFC:

Mode	Frequency (MHz)	E-field strength(dBuV/m)	E-field strength(V/m)	ERP (mW)	Limit(mW)	Verdict
NFC	13.56	80.69	0.01083	0.02146	1	Pass

$$\mathrm{EIRP} = p_t \times g_t = (E \times d)^2 / 30$$

where

p_t is the transmitter output power in watts
g_t is the numeric gain of the transmitting antenna (dimensionless)
E is the electric field strength in V/m
d is the measurement distance in meters (m)

$$\mathrm{ERP} = \mathrm{EIRP}/1.64 = (E \times d)^2 / (30 \times 1.64) = (E \times d)^2 / 49.2$$

Remark: NFC can't simultaneously transmit with other transmitters.

---End of Report---

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