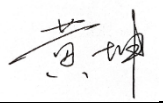
TEST REPORT

Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd.
EUT Description:	Cellular weight scale
Model:	JPD-700A
FCC ID:	2ADYL-JPD700A
Standards:	FCC CFR Title 47 Part 2
	FCC CFR Title 47 Part 22
	FCC CFR Title 47 Part 24
	FCC CFR Title 47 Part 27
	FCC CFR Title 47 Part 90
Date of Receipt:	2025/04/24
Date of Test:	2025/04/24 to 2025/06/09
Date of Issue:	2025/06/10

TOWE. tested the above equipment in accordance with the requirements set forth in the above standards. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

the results documented in this report apply only the tested sample, under the conditions and modes of operation as described herein. It is the manufacturer's responsibility assure that additional production units of the model are manufactured with identical electrical and mechanical components. All sample tested were in good operating condition throughout the entire test program. Measurement Uncertainties are published for informational purposes only and were not taken into account unless noted otherwise. without written approval of TOWE, the test report shall not be reproduced except in full.



Huang Kun
Approved By:

Chen Chengfu
Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2025/06/10	Original	Chen Chengfu

Summary of Test Results

FCC Part	Test Band	Test Item	Test Result
§2.1046 §22.913(a)(5) §27.50(b)(10) §27.50(c)(10)	LTE Band 5/26(824 ~ 849MHz) LTE Band 13 LTE Band 12/71/85	Effective Radiated Power	Pass
§2.1046 §24.232(c) §27.50(d)(4)	LTE Band 2/25 LTE Band 4/66	Effective Isotropic Radiated Power	Pass
§2.1046 §90.635(b)	LTE Band 26(814 ~ 824MHz)	Transmitter Conducted Output Power	Pass
§22.913(d) §24.232(d) §27.50(d)(5)	LTE Band 5/26(824 ~ 849MHz) LTE Band 2/25 Others Band	Peak-Average Ratio	Pass*
§2.1049	All Band	Occupied Bandwidth	Pass*
§2.1051 §90.691(a)	LTE Band 26(814 ~ 824MHz)	Emission Mask	Pass*
§2.1051 §22.917(a) §24.238(a) §27.53(c) §27.53(g) §27.53(h)	LTE Band 5/26(824 ~ 849MHz) LTE Band 2/25 LTE Band 13 LTE Band 12/71/85 LTE Band 4/66	Band Edge	Pass*
§2.1051 §22.917(a) §24.238(a) §27.53(c) §27.53(g) §27.53(h) §90.691	LTE Band 5/26(824 ~ 849MHz) LTE Band 2/25 LTE Band 13 LTE Band 12/71/85 LTE Band 4/66 LTE Band 26(814 ~ 824MHz)	Spurious Emission at Antenna Terminals	Pass*
§2.1053 §22.917(a) §24.238(a) §27.53(c)&(f) §27.53(g) §27.53(h) §90.691	LTE Band 5/26(824 ~ 849MHz) LTE Band 2/25 LTE Band 13 LTE Band 12/71/85 LTE Band 4/66 LTE Band 26(814 ~ 824MHz)	Field Strength of Spurious Radiation	Pass
§2.1055 §22.355 §24.235 §27.54 §90.213	LTE Band 5/26(824 ~ 849MHz) LTE Band 2/25 Others Band LTE Band 26(814 ~ 824MHz)	Frequency Stability	Pass*

Remark:

1. Pass: Meet the requirement.
2. Pass*: Refer to Module FCC ID: XMR2020BG95M2, Detailed data reference Report No.: R1907A0448-R1V2 & R1907A0448-R7V2 & R1907A0448-R2V2 & R1907A0448-R3V3 & R1907A0448-R8V2 &

FCC Part	Test Band	Test Item	Test Result
R1907A0448-R4V2 & R1907A0448-R5V2 & R1907A0448-R6V2, provided by TA Technology (Shanghai) Co., Ltd.			

Table of Contents

1 General Description

1.1 Lab Information

1.1.1 Testing Location

These measurements tests were conducted at the Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. facility located at F401 and F101, Building E, Hongwei Industrial Zone, Liuxian 3rd Road, Bao'an District, Shenzhen, China. The measurement facility is compliant with the test site requirements specified in ANSI C63.4-2014
Tel.: +86-755-27212361
Contact Email: info@towewireless.com

1.1.2 Test Facility / Accreditations

A2LA (Certificate Number: 7088.01)
This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

FCC Designation No.: CN1353
Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized as an accredited testing laboratory. Designation Number: CN1353.

ISED CAB identifier: CN0152
Sushi TOWE Wireless Testing(Shenzhen) Co., Ltd. has been recognized by ISED as an accredited testing laboratory.
CAB identifier: CN0152
Company Number: 31000

1.2 Client Information

1.2.1 Applicant

Applicant:	Shenzhen Jumper Medical Equipment Co., Ltd.
Address:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan,Shenzhen, Guangdong 518103, China

1.2.2 Manufacturer

Manufacturer:	Shenzhen Jumper Medical Equipment Co., Ltd.
Address:	D Building, No. 71, Xintian Road, Fuyong Street, Baoan,Shenzhen, Guangdong 518103, China

1.3 Product Information

EUT Description:	Cellular weight scale		
Model:	JPD-700A		
Hardware Version:	V1.0		
Software Version:	V1.0.0		
SN:	RF Conducted	9134700A105424	
IMEI:	RSE	866840074148340 866840074148270	
Device Capabilities:			
Modulation Type:	LTE Cat M1:	☒ QPSK, ☒ 16QAM	
	LTE NB-IoT:	☒ BPSK, ☒ QPSK	
Operation Frequency Range:	Band	TX Frequency	RX Frequency
	Cat M1 Band 2	1850 ~ 1910 MHz	1930 ~ 1990 MHz
	Cat M1 Band 4	1710 ~ 1755 MHz	2110 ~ 2155 MHz
	Cat M1 Band 5	824 ~ 849 MHz	869 ~ 894 MHz
	Cat M1 Band 12	699 ~ 716 MHz	729 ~ 746 MHz
	Cat M1 Band 13	777 ~ 787 MHz	746 ~ 756 MHz
	Cat M1 Band 25	1850 ~ 1915 MHz	1930 ~ 1995 MHz
	Cat M1 Band 26 (814 ~ 824 MHz)	814 ~ 824MHz	859 ~ 869 MHz
	Cat M1 Band 26 (824 ~ 849 MHz)	824 ~ 849 MHz	869 ~ 894 MHz
	Cat M1 Band 66	1710 ~ 1780 MHz	2110 ~ 2180 MHz
	Cat M1 Band 85	698 ~ 716 MHz	728 ~ 746 MHz
	NB-IoT Band 2	1850 ~ 1910 MHz	1930 ~ 1990 MHz
	NB-IoT Band 4	1710 ~ 1755 MHz	2110 ~ 2155 MHz
	NB-IoT Band 5	824 ~ 849 MHz	869 ~ 894 MHz
	NB-IoT Band 12	699 ~ 716 MHz	729 ~ 746 MHz
	NB-IoT Band 13	777 ~ 787 MHz	746 ~ 756 MHz
	NB-IoT Band 25	1850 ~ 1915 MHz	1930 ~ 1995 MHz
	NB-IoT Band 66	1710 ~ 1780 MHz	2110 ~ 2180 MHz
	NB-IoT Band 71	663 ~ 698 MHz	617 ~ 652 MHz
	NB-IoT Band 85	698 ~ 716 MHz	728 ~ 746 MHz
Antenna Type:	☐ External, ☒ Integrated		
Antenna Gain:	Band	ANT Gain(dBi)	
	Cat M1 Band 2	2.58	
	Cat M1 Band 4	1.51	
	Cat M1 Band 5	-0.56	
	Cat M1 Band 12	1.03	
	Cat M1 Band 13	3.10	
	Cat M1 Band 25	2.58	
	Cat M1 Band 26	0.98	

	Cat M1 Band 66	1.51
	Cat M1 Band 85	1.03
	NB-IoT Band 2	2.58
	NB-IoT Band 4	1.51
	NB-IoT Band 5	-0.56
	NB-IoT Band 12	1.03
	NB-IoT Band 13	3.10
	NB-IoT Band 25	2.58
	NB-IoT Band 66	1.51
	NB-IoT Band 71	0.83
	NB-IoT Band 85	1.03
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user manual for more detailed description.		

2 Test Configuration

2.1 Test Channel

Band	Bandwidth	TX Frequency			RX Frequency		
		Range	Channel	Frequency	Range	Channel	Frequency
LTE Cat M1 Band 2	1.4MHz	Low	18607	1850.7 MHz	Low	607	1930.7 MHz
		Middle	18900	1880 MHz	Middle	900	1960 MHz
		High	19193	1909.3 MHz	High	1193	1989.3 MHz
	3MHz	Low	18615	1851.5 MHz	Low	615	1931.5 MHz
		Middle	18900	1880 MHz	Middle	900	1960 MHz
		High	19185	1908.5 MHz	High	1185	1988.5 MHz
	5MHz	Low	18625	1852.5 MHz	Low	625	1932.5 MHz
		Middle	18900	1880 MHz	Middle	900	1960 MHz
		High	19175	1907.5 MHz	High	1175	1987.5 MHz
	10MHz	Low	18650	1855 MHz	Low	650	1935 MHz
		Middle	18900	1880 MHz	Middle	900	1960 MHz
		High	19150	1905 MHz	High	1150	1985 MHz
	15MHz	Low	18675	1857.5 MHz	Low	675	1937.5 MHz
		Middle	18900	1880 MHz	Middle	900	1960 MHz
		High	19125	1902.5 MHz	High	1125	1982.5 MHz
	20MHz	Low	18700	1860 MHz	Low	700	1940 MHz
		Middle	18900	1880 MHz	Middle	900	1960 MHz
		High	19100	1900 MHz	High	1100	1980 MHz
LTE Cat M1 Band 4	1.4MHz	Low	19957	1710.7 MHz	Low	1957	2110.7 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20393	1754.3 MHz	High	2393	2154.3 MHz
	3MHz	Low	19965	1711.5 MHz	Low	1965	2111.5 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20385	1753.5 MHz	High	2385	2153.5 MHz
	5MHz	Low	19975	1712.5 MHz	Low	1975	2112.5 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20375	1752.5 MHz	High	2375	2152.5 MHz
	10MHz	Low	20000	1715 MHz	Low	2115	2115 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20350	1750 MHz	High	2350	2150 MHz
	15MHz	Low	20025	1717.5 MHz	Low	2025	2117.5 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20325	1747.5 MHz	High	2325	2147.5 MHz
	20MHz	Low	20050	1720 MHz	Low	2050	2120 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20300	1745 MHz	High	2300	2145 MHz
LTE Cat M1 Band 5	1.4MHz	Low	20407	824.7 MHz	Low	2407	869.7 MHz
		Middle	20525	836.5 MHz	Middle	2525	881.5 MHz
		High	20643	848.3 MHz	High	2643	893.3 MHz
	3MHz	Low	20415	825.5 MHz	Low	2415	870.5 MHz
		Middle	20525	836.5 MHz	Middle	2525	881.5 MHz
		High	20635	847.5 MHz	High	2635	892.5 MHz
	5MHz	Low	20425	826.5 MHz	Low	2425	871.5 MHz
		Middle	20525	836.5 MHz	Middle	2525	881.5 MHz
		High	20625	846.5 MHz	High	2625	891.5 MHz
	10MHz	Low	20450	829 MHz	Low	2450	874 MHz
		Middle	20525	836.5 MHz	Middle	2525	881.5 MHz
		High	20600	844 MHz	High	2600	889 MHz
LTE Cat M1 Band 12	1.4MHz	Low	23017	699.7 MHz	Low	5017	729.7 MHz
		Middle	23095	707.5 MHz	Middle	5095	737.5 MHz
		High	23173	715.3 MHz	High	5173	745.3 MHz
	3MHz	Low	23025	700.5 MHz	Low	5025	730.5 MHz
		Middle	23095	707.5 MHz	Middle	5095	737.5 MHz

Band	Bandwidth	TX Frequency			RX Frequency		
		Range	Channel	Frequency	Range	Channel	Frequency
		High	23165	714.5 MHz	High	5165	744.5 MHz
	5MHz	Low	23035	701.5 MHz	Low	5035	731.5 MHz
		Middle	23095	707.5 MHz	Middle	5095	737.5 MHz
		High	23155	713.5 MHz	High	5155	743.5 MHz
	10MHz	Low	23060	704 MHz	Low	5060	734 MHz
		Middle	23095	707.5 MHz	Middle	5095	737.5 MHz
		High	23130	711 MHz	High	5130	741 MHz
LTE Cat M1 Band 13	5MHz	Low	23205	779.5 MHz	Low	5205	748.5 MHz
		Middle	23230	782 MHz	Middle	5230	751 MHz
		High	23255	784.5 MHz	High	5255	753.5 MHz
	10MHz	Low	23230	782 MHz	Low	5230	751 MHz
		Middle	23230	782 MHz	Middle	5230	751 MHz
		High	23230	782 MHz	High	5230	751 MHz
LTE Cat M1 Band 25	1.4MHz	Low	26047	1850.7 MHz	Low	8047	1930.7 MHz
		Middle	26365	1882.5 MHz	Middle	8365	1962.5 MHz
		High	26683	1914.3 MHz	High	8683	1994.3 MHz
	3MHz	Low	26055	1851.5 MHz	Low	8055	1931.5 MHz
		Middle	26365	1882.5 MHz	Middle	8365	1962.5 MHz
		High	26675	1913.5 MHz	High	8675	1993.5 MHz
	5MHz	Low	26065	1852.5 MHz	Low	8065	1932.5 MHz
		Middle	26365	1882.5 MHz	Middle	8365	1962.5 MHz
		High	26665	1912.5 MHz	High	8665	1992.5 MHz
	10MHz	Low	26090	1855 MHz	Low	8090	1935 MHz
		Middle	26365	1882.5 MHz	Middle	8365	1962.5 MHz
		High	26640	1910 MHz	High	8640	1990 MHz
	15MHz	Low	26115	1857.5 MHz	Low	8115	1937.5 MHz
		Middle	26365	1882.5 MH	Middle	8365	1962.5 MHz
		High	26615	1907.5 MHz	High	8615	1987.5 MHz
	20MHz	Low	26140	1860 MHz	Low	8140	1940 MHz
		Middle	26365	1882.5 MHz	Middle	8365	1962.5 MHz
		High	26590	1905 MHz	High	8590	1985 MHz
LTE Cat M1 Band 26 (814-824)	1.4MHz	Low	26697	814.7 MHz	Low	8697	859.7 MHz
		Middle	26740	819 MHz	Middle	8740	864MHz
		High	26783	823.3 MHz	High	8783	868.3 MHz
	3MHz	Low	26705	815.5 MHz	Low	8705	860.5 MHz
		Middle	26740	819 MHz	Middle	8740	864MHz
		High	26775	822.5 MHz	High	8775	867.5 MHz
	5MHz	Low	26715	816.5 MHz	Low	8715	861.5 MHz
		Middle	26740	819 MHz	Middle	8740	864MHz
		High	26765	821.5 MHz	High	8765	866.5 MHz
	10MHz	Low	26740	819 MHz	Low	8740	864MHz
		Middle	26740	819 MHz	Middle	8740	864MHz
		High	26740	819 MHz	High	8740	864MHz
LTE Cat M1 Band 26 (824-849)	1.4MHz	Low	26797	824.7 MHz	Low	8797	869.7 MHz
		Middle	26915	836.5 MHz	Middle	8915	881.5 MHz
		High	27033	848.3 MHz	High	9033	893.3 MHz
	3MHz	Low	26805	825.5 MHz	Low	8805	870.5 MHz
		Middle	26915	836.5 MHz	Middle	8915	881.5 MHz
		High	27025	847.5 MHz	High	9025	892.5 MHz
	5MHz	Low	26815	826.5 MHz	Low	8815	871.5 MHz
		Middle	26915	836.5 MHz	Middle	8915	881.5 MHz
		High	27015	846.5 MHz	High	9015	891.5 MHz
	10MHz	Low	26840	829 MHz	Low	8840	844 MHz
		Middle	26915	836.5 MHz	Middle	8915	881.5 MHz
		High	26990	844 MHz	High	8990	889 MHz
	15MHz	Low	26865	831.5 MHz	Low	8865	876.5 MHz
		Middle	26915	836.5 MHz	Middle	8915	881.5 MHz

Band	Bandwidth	TX Frequency			RX Frequency		
		Range	Channel	Frequency	Range	Channel	Frequency
		High	26965	841.5 MHz	High	8965	886.5 MHz
LTE Cat M1 Band 66	1.4MHz	Low	131979	1710.7 MHz	Low	66443	2110.7 MHz
		Middle	132322	1745 MHz	Middle	66786	2145MHz
		High	132665	1779.3 MHz	High	67129	2179.3 MHz
	3MHz	Low	131987	1711.5 MHz	Low	66451	2111.5 MHz
		Middle	132322	1745 MHz	Middle	66786	2145MHz
		High	132657	1778.5MHz	High	67121	2178.5MHz
	5MHz	Low	131997	1712.5 MHz	Low	66461	2112.5 MHz
		Middle	132322	1745 MHz	Middle	66786	2145MHz
		High	132647	1777.5 MHz	High	67111	2177.5 MHz
	10MHz	Low	132022	1715 MHz	Low	66486	2115 MHz
		Middle	132322	1745 MHz	Middle	66786	2145MHz
		High	132622	1775 MHz	High	67086	2175 MHz
	15MHz	Low	132047	1717.5 MHz	Low	66511	2117.5 MHz
		Middle	132322	1745 MHz	Middle	66786	2145MHz
		High	132597	1772.5 MHz	High	67061	2172.5 MHz
	20MHz	Low	132072	1720 MHz	Low	66536	2120 MHz
		Middle	132322	1745 MHz	Middle	66786	2145MHz
		High	132572	1770 MHz	High	67036	2170 MHz
LTE Cat M1 Band 85	5MHz	Low	23025	700.5 MHz	Low	5025	730.5 MHz
		Middle	23090	707 MHz	Middle	5090	737 MHz
		High	23155	713.5 MHz	High	5155	743.5 MHz
	10MHz	Low	23050	703 MHz	Low	5050	733 MHz
		Middle	23090	707 MHz	Middle	5090	737 MHz
		High	23130	711 MHz	High	5130	741 MHz

Test mode:	Sub Carrier Spacing (KHz)	RF Channel		
		Low (L)	Middle (M)	High (H)
		MHz	MHz	MHz
LTE NB-IoT Band 2	3.75	1850.2	1880.0	1909.8
	15	1850.2	1880.0	1909.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 4	3.75	1710.2	1732.5	1754.8
	15	1710.2	1732.5	1754.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 5	3.75	824.2	836.5	848.8
	15	824.2	836.5	848.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 12	3.75	699.2	707.5	715.8
	15	699.2	707.5	715.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 13	3.75	777.2	782.0	786.8
	15	777.2	782.0	786.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 25	3.75	1850.2	1882.5	1914.8
	15	1850.2	1882.5	1914.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 66	3.75	1710.2	1745.0	1779.8
	15	1710.2	1745.0	1779.8
Test mode:	**Sub Carrier Spacing (KHz)**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**
		MHz	**MHz**	**MHz**
LTE NB-IoT Band 71	3.75	663.2	680.5	697.8
	15	663.2	680.5	697.8
Test mode:	**Sub Carrier Spacing**	**RF Channel**		
		Low (L)	**Middle (M)**	**High (H)**

	(KHz)	MHz	MHz	MHz
LTE NB-IoT Band 85	3.75	698.2	707.0	715.8
	15	698.2	707.0	715.8

2.2 Test Mode

Test Mode	Description
TM 1	EUT communication with simulated station in Cat M1/QPSK mode
TM 2	EUT communication with simulated station in Cat M1/16QAM mode
TM 3	EUT communication with simulated station in NB-IoT/BPSK mode
TM 4	EUT communication with simulated station in NB-IoT/QPSK mode

2.3 Support Unit used in test

The EUT has been tested as an independent unit.

2.4 Test Environment

Temperature:	Normal: 15℃ ~ 35℃
Relative Humidity	45-56 % RH Ambient
Voltage:	Nominal: 6.0 Vdc, Extreme: Low 4.4 Vdc, High 6.0 Vdc

2.5 Test RF Cable

For all conducted test items: The offset level is set spectrum analyzer to compensate the RF cable loss and attenuator factor between RF conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level will be exactly the RF output level.
The spectrum analyzer offset is derived from RF cable loss and attenuator factor.
Offset = RF cable loss + attenuator factor.

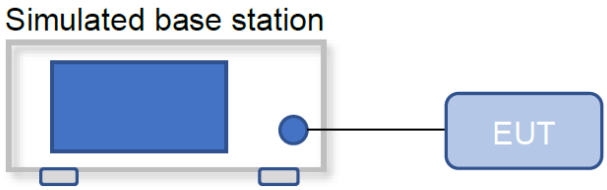
2.6 Modifications

No modifications were made during testing.

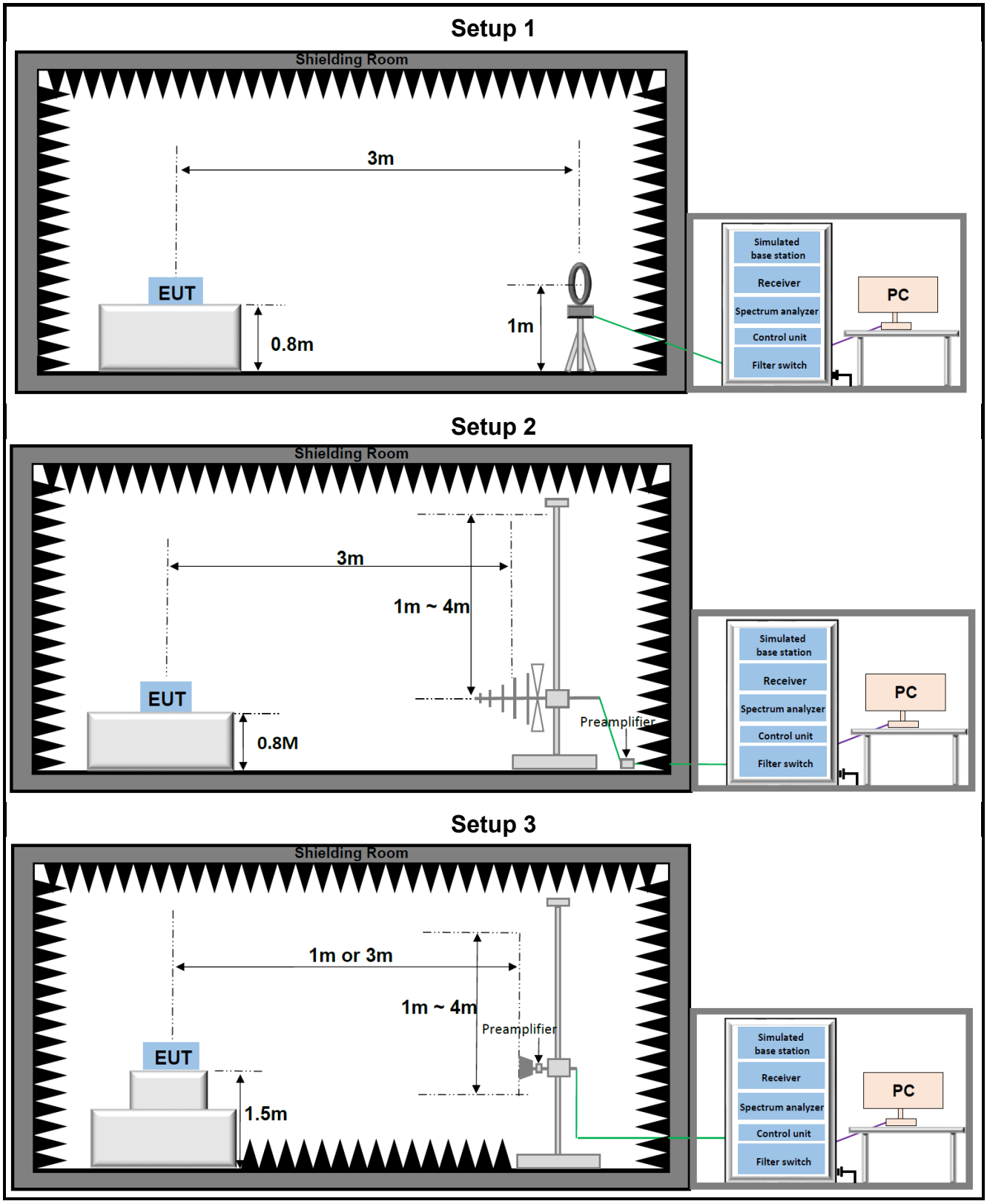
2.7 Test Setup Diagram

2.7.1 Conducted Configuration

Setup 1



2.7.2 Radiated Configuration



3 Equipment and Measurement Uncertainty

All test and measuring equipment utilized to perform the tests documented in this report are calibrated on a regular basis, whichever is less, and where applicable is traceable recognized national standards.

3.1 Test Equipment List

RF Conducted 04					
Description	**Manufacturer**	**Model**	**S.N.**	**Last Due**	**Cal Due**
Radio Communication Analyzer	Anritsu	MT8821C	6262170436	2025/03/14	2026/03/13
Signal Analyzer	Keysight	N9020A	US46220152	2025/03/14	2026/03/13
Signal Generator	Keysight	N5182A	MY49060761	2025/03/11	2026/03/10
Signal Generator	R&S	SMR20	101691	2025/03/11	2026/03/10
Hygrometer	BingYu	HTC-1	N/A	2023/06/01	2025/05/31
				2025/05/29	2027/05/28
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY63440541	2024/05/30	2025/05/29
				2025/05/29	2026/05/28
Band Reject Filter Group	Tonscend	JS0806-F	23B806F0662	N/A	N/A
RF Control Unit	Tonscend	JS0806-1	22L8060650	N/A	N/A
Measurement Software	Tonscend	TS1120 V3.1.46	10636	N/A	N/A

Radiated Emission					
Description	**Manufacturer**	**Model**	**S.N.**	**Last Due**	**Cal Due**
Biconic Logarithmic Periodic Antennas	Schwarzbeck	VULB9163	1643	2023/06/25	2025/06/24
Double-Ridged Horn Antennas	Schwarzbeck	BBHA 9120D	2809	2023/06/25	2025/06/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	1290	2023/06/25	2025/06/24
Loop Antenna	Schwarzbeck	FMZB 1519C	1519C-028	2023/06/29	2025/06/28
Signal Analyzer	Keysight	N9020A	MY49100252	2025/03/11	2026/03/10
EXA Signal Analyzer, Multi-touch	Keysight	N9010B	MY63440541	2024/05/30	2025/05/29
				2025/05/29	2026/05/28
Wideband Radio Communication Tester	R&S	CMW500	150645	2025/03/11	2026/03/10
Low Noise Amplifier	Tonscend	TAP9K3G40	AP23A8060273	2025/03/11	2027/03/10
Low Noise Amplifier	Tonscend	TAP01018050	AP22G806258	2025/03/11	2027/03/10
Low Noise Amplifier	Tonscend	TAP18040048	AP22G806247	2025/03/11	2027/03/10
Hygrometer	BINGYU	HTC-1	N/A	2023/06/01	2025/05/31
				2025/05/29	2027/05/28
Test Software	Tonscend	TS+	Version: 5.0.0	N/A	N/A

3.2 Measurement Uncertainty

Parameter	U_{lab}
Output Power	0.76dB
Radiated Emissions(9kHz~30MHz)	2.40dB
Radiated Emissions(30MHz~1000MHz)	4.66dB
Radiated Emissions(1GHz~18GHz)	5.42dB
Radiated Emissions(18GHz~40GHz)	5.46dB

Uncertainty figures are valid to a confidence level of 95%

4 Test Results

4.1 Output Power (ERP / EIRP / Conducted Power)

Limits

FCC Part	Test Band	Limit
§22.913(a)(5)	LTE Band 5/26(824 ~ 849MHz)	The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7watts.
§24.232(c)	LTE Band 2/25	Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.
§27.50(d)(4)	LTE Band 4/66	Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780MHz bands are limited to 1watt EIRP. Fixed stations operating in the 1710-1755MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.
§27.50(c)(10)	LTE Band 12/71/85	Portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3watts ERP.
§27.50(b)(10)	LTE Band 13	Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP.
§90.635(b)	LTE Band 26(814~824MHz)	The maximum output power of the transmitter for mobile stations is 100 watts (20dBw).

Test Procedure

KDB 971168 D01 V03r01 Section 5.2.1, for Conducted Output Power

KDB 971168 D01 V03r01 Section 5.2, for Effective (Isotropic) Radiated Power

Test Settings

Conducted Output Power:

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to the simulated base station. The simulated station was set to force the EUT to its maximum power setting, Transmitter output power was read off in dBm, read values have added cable loss and attenuation.

Radiated Power:

The formula for calculating ERP/EIRP based on conduction power is as follows:
EIRP (dBm) = Conducted Power (dBm) + antenna gain (dBi)
ERP=EIRP - 2.15dB

Test Setup

Refer to section 2.7.1 Setup 1

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Results

The detailed test data see: **Appendix.**

4.2 Field Strength of Spurious Radiation

Limits

FCC part	Test Band	Limit
§2.1053 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	LTE Band 5/26(824 ~ 849MHz) LTE Band 2/25 LTE Band 12/71/85 LTE Band 4/66	The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB.
§27.53(c)(f)	LTE Band 13	On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB; For operations in the 746-758 MHz, 775-788 MHz, and 805-806 MHz bands, emissions in the band 1559-1610 MHz shall be limited to −70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and −80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.
§90.691	LTE Band 26(814~824MHz)	The power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log (P) decibels or 80 decibels, whichever is the lesser attenuation.

Test Procedure

KDB 971168 D01 V03r01 Section 7

Test Settings

1. For radiated emissions measurements performed at frequencies less than or equal to 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 80cm above the reference ground plane.
2. For radiated emissions measurements performed at frequencies above 1GHz, the EUT shall be placed on a RF-transparent table or support at a nominal height of 150cm above the ground plane.
3. Radiated measurements shall be made with the measurement antenna positioned in both horizontal and vertical polarization. The measurement antenna shall be varied from 1m to 4m in height above the reference ground in a search for the relative positioning that produces the maximum radiated signal level (i.e, field strength or received power), when orienting the measurement antenna in vertical polarization, the minimum height of the lowest element of the antenna shall clear the site reference ground plane by at least 25cm.
4. For each suspected emission, the EUT was ranged its worst case and then tune the antenna tower(from 1~4m) and turntable(from 0~360°) find the maximum reading. Preamplifier and a high pass filter are used for the test in order get better signal level comply with the guidelines.
5. The simulated base station was set to force the EUT to its maximum transmitting power.
6. spectrum analyzer setting:
   Measurements 9kHz ~150kHz: RBW = 300Hz; VBW ≥ 3kHz; Detector = RMS
   Measurements 150kHz ~30MHz: RBW = 10kHz; VBW ≥ 30kHz; Detector = RMS
   Measurements 30MHz~1000MHz: RBW = 100kHz or 1MHz; VBW ≥ 1MHz or 3MHz; Detector = RMS
   Measurements Above 1000MHz: RBW = 1 MHz; VBW ≥ 3 MHz; Detector = RMS
7. The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:
   E(dBμV/m) = Measured amplitude level (dBμV) + Cable Loss (dB) + Antenna Factor (dB/m).

E(dBμV/m) = Measured amplitude level (dBm) + 107 + Cable Loss (dB) + Antenna Factor (dB/m).

E(dBuV/m) = EIRP(dBm) - 20log(D) + 104.8; where D is the measurement distance(in the far field region) in m.

EIRP(dBm) = E(dBμV/m) + 20log(D) - 104.8; where D is the measurement distance(in the far field region) in m.

*So, from d: The measuring distance is usually at 3m, then 20*Log(3)=9.5424*

Then, EIRP (dBm)= E (dBμV/m) +9.5424-104.8=E (dBμV/m)-95.2576

8. Repeat above procedures until all frequencies measured was complete.
9. Measure and record the results in the test report.

Test notes

1. The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The worst-case emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
2. Emissions below 18GHz were measured at a 3-meter test distance while emissions above 18GHz were measured at a 1-meter test distance with the application of a distance correction factor.
3. Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. the disturbance between 9kHz to 30MHz, 30MHz-1GHz and 18GHz to 40GHz was very low. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be recorded, so only the harmonics had been displayed.
4. The "-" shown in the following RSE tables are used to denote a noise floor measurement.

Test Setup

Refer to section 2.7.2 for details.

Measuring Instruments

The measuring equipment is listed in the section 3.1 of this test report.

Test Result

The detailed test data see: **Appendix.**

5 Test Setup Photos

The detailed test data see: **Appendix-D WWAN Setup Photos**

Appendix

Appendix List:

Appendix-A LTE Cat M1 Power
Appendix-B LTE NB-IoT Power
Appendix-C Field Strength of Spurious Radiation

~The End~