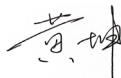


TEST REPORT

Applicant: Simgo Asset Acquisition Corp – D/B/A StratusX
EUT Description: MIFI
Model: AI740
Brand: stratusX
FCC ID: 2BBUC-AI740
FCC CFR Title 47 Part 2
FCC CFR Title 47 Part 22
Standards: FCC CFR Title 47 Part 24
FCC CFR Title 47 Part 27
Date of Receipt: 2023/09/14
Date of Test: 2023/09/14 to 2023/10/09
Date of Issue: 2023/10/26

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.



Approved By:



Reviewed By:

Revision History

Rev.	Issue Date	Description	Revised by
01	2023/10/26	Original	

Summary of Test Results

FCC Part	Test Item	Test Result (Appendix)	Verdict
§2.1046 §22.913(a)(5) §27.50(c)(10)	Effective Radiated Power (GSM850/WCDMA V/LTE Band5/17)	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band5 Appendix 3-LTE Band17	Pass
§2.1046 §24.232(c) §27.50(d)(4)	Effective Isotropic Radiated Power (GSM1900/WCDMA II/IV/LTE Band2/4)	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4	Pass
§22.913(d) §24.232(d) §27.50(d)(5)	Peak-Average Ratio	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4 Appendix 3-LTE Band5 Appendix 3-LTE Band17	Pass
§2.1047	Modulation Characteristics	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4 Appendix 3-LTE Band5 Appendix 3-LTE Band17	Pass
§2.1049	Occupied Bandwidth	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4 Appendix 3-LTE Band5 Appendix 3-LTE Band17	Pass
§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Band Edge	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4 Appendix 3-LTE Band5 Appendix 3-LTE Band17	Pass
§2.1051 §22.917(a) §24.238(a) §27.53(g) §27.53(h)	Spurious Emission at Antenna Terminals	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4 Appendix 3-LTE Band5 Appendix 3-LTE Band17	Pass
§2.1053 §22.917(a)	Field Strength of Spurious Radiation (GSM850/WCDMA V/LTE Band5)	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band5	Pass
§2.1053 §24.238(a) §27.53(a) §27.53(h)	Field Strength of Spurious Radiation (GSM1900/WCDMA II/IV/LTE Band2/4)	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4	Pass
§2.1053 §27.53(g)	Field Strength of Spurious Radiation (LTE Band 17)	Appendix 3-LTE Band17	Pass

§2.1055 §22.355	Frequency Stability (GSM850/WCDMA V/LTE Band5)	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band5	Pass
§2.1055 §24.235 §27.54	Frequency Stability (GSM1900/WCDMA II/IV/LTE Band2/4/17)	Appendix 1-GSM Appendix 2-WCDMA Appendix 3-LTE Band2 Appendix 3-LTE Band4 Appendix 3-LTE Band17	Pass
Test Method: ANSI C63.26-2015; ANSI/TIA-603-E-2016			

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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:	Simgo Asset Acquisition Corp – D/B/A StratusX
Address:	251 Little Falls Rd - Wilmington DE 19808

1.2.2 Manufacturer

Manufacturer:	Shenzhen Qingyu Technical Development Ltd
Address:	Shenzhen Banan Songgang Juleyuan Baifulou# 104

1.3 Product Information

EUT Description:	MIFI			
Model:	AI740			
Brand:	stratus ^X			
Hardware Version:	A1740_MB_P2			
Software Version:	StratusX_user_20230727103904_5bd0760ce2			
SN:	AX30209			
Device Capabilities:				
Modulation Type:	GSM:	<input checked="" type="checkbox"/> GPRS: GMSK, <input checked="" type="checkbox"/> EGPRS: 8PSK		
	WCDMA:	<input checked="" type="checkbox"/> RMC, <input checked="" type="checkbox"/> HSUPA, <input checked="" type="checkbox"/> HSDPA, <input type="checkbox"/> HSPA+ <input checked="" type="checkbox"/> BPSK, <input checked="" type="checkbox"/> QPSK, <input type="checkbox"/> 16QAM		
	LTE:	<input checked="" type="checkbox"/> QPSK, <input checked="" type="checkbox"/> 16QAM, <input type="checkbox"/> 64QAM		
Operation Frequency Range:	Band	TX Frequency	RX Frequency	
	GSM 850	824 - 849 MHz	869 - 894 MHz	
	GSM 1900	1850 - 1910 MHz	1930 - 1990 MHz	
	WCDMA Band II	1850 - 1910 MHz	1930 - 1990 MHz	
	WCDMA Band IV	1710 - 1755 MHz	2110 - 2155 MHz	
	WCDMA Band V	824 - 849 MHz	869 - 894 MHz	
	LTE Band 2	1850 - 1910 MHz	1930 - 1990 MHz	
	LTE Band 4	1710 - 1755 MHz	2110 - 2155 MHz	
	LTE Band 5	824 - 849 MHz	869 - 894 MHz	
LTE Band 17	704 - 716 MHz	734 - 746 MHz		
Antenna Type:	<input type="checkbox"/> External, <input checked="" type="checkbox"/> Integrated			
Antenna Gain:	GSM850:	-1.1 dBi	GSM1900:	1.4 dBi
	WCDMA Band II:	1.4 dBi	WCDMA Band IV:	1.2dBi
	WCDMA Band V:	-1.1 dBi	LTE Band 2:	1.4dBi
	LTE Band 4:	1.2dBi	LTE Band 5:	-1.1dBi
	LTE Band 17:	-1.3dBi		
	Note: The above gain is derived from the antenna gain of "PA Duan".			
Remark: The above EUT's information was declared by applicant, please refer to the specifications or user's manual for more detailed description.				

1.4 Technical characteristics

GSM	GMSK		8PSK	
	Emission designator	Output power	Emission designator	Output power
GSM850	247KGXW	1.6482	247KG7W	0.3828
GSM1900	247KGXW	0.9863	248KG7W	0.3690

WCDMA	QPSK		16QAM	
	Emission designator	Output power	Emission designator	Output power
Band II	4M16F9W	0.2178	/	/
Band IV	4M16F9W	0.2213	/	/
Band V	4M16F9W	0.2061	/	/

LTE	QPSK		16QAM		64QAM	
	Emission designator	Output power	Emission designator	Output power	Emission designator	Output power
Band 2	1M10G7D	0.2239	1M10W7D	0.1914	/	/
	2M70G7D	0.2198	2M70W7D	0.1862	/	/
	4M51G7D	0.2228	4M51W7D	0.2042	/	/
	8M99G7D	0.2228	8M98W7D	0.1963	/	/
	13M5G7D	0.2301	13M5W7D	0.2018	/	/
	18M0G7D	0.2280	18M0W7D	0.1950	/	/
Band 4	1M10G7D	0.2158	1M10W7D	0.1888	/	/
	2M70G7D	0.2188	2M70W7D	0.1954	/	/
	4M51G7D	0.2158	4M51W7D	0.1875	/	/
	9M00G7D	0.2208	9M00W7D	0.2123	/	/
	13M5G7D	0.2213	13M5W7D	0.1919	/	/
	18M0G7D	0.2193	18M0W7D	0.1932	/	/
Band 5	1M10G7D	0.2541	1M10W7D	0.2163	/	/
	2M70G7D	0.2541	2M70W7D	0.2153	/	/
	4M51G7D	0.2594	4M51W7D	0.2138	/	/
	8M98G7D	0.2495	9M00W7D	0.2286	/	/
Band 17	4M52G7D	0.1977	4M52W7D	0.1722	/	/
	9M02G7D	0.1972	9M01W7D	0.1754	/	/

2 Test Configuration

2.1 Test Channel

Band	TX Frequency			RX Frequency		
	Range	Channel	Frequency	Range	Channel	Frequency
GSM 850	Low	128	824.2MHz	Low	128	869.2 MHz
	Middle	190	836.6 MHz	Middle	190	881.6 MHz
	High	251	848.8 MHz	High	251	893.8 MHz
GSM 1900	Low	512	1850.2MHz	Low	512	1930.2 MHz
	Middle	661	1880.0 MHz	Middle	661	1960.0 MHz
	High	810	1909.8 MHz	High	810	1989.8 MHz
WCDMA Band II	Low	9262	1852.4 MHz	Low	9662	1932.4 MHz
	Middle	9400	1880.0 MHz	Middle	9800	1960.0 MHz
	High	9538	1907.6 MHz	High	9938	1987.6 MHz
WCDMA Band IV	Low	1312	1712.4MHz	Low	1537	2112.4 MHz
	Middle	1413	1732.6 MHz	Middle	1638	2132.6 MHz
	High	1513	1752.6 MHz	High	1738	2152.6 MHz
WCDMA Band V	Low	4132	826.4 MHz	Low	4357	871.4 MHz
	Middle	4182	836.4 MHz	Middle	4407	881.4 MHz
	High	4233	846.6 MHz	High	4458	891.6 MHz

Band	Bandwidth	TX Frequency			RX Frequency		
		Range	Channel	Frequency	Range	Channel	Frequency
LTE 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	1935 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 band 4	1.4MHz	Low	19957	1710.7 MHz	Low	1975	2110.7 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20393	1754.3 MHz	High	2375	2154.3 MHz
	3MHz	Low	19965	1711.5 MHz	Low	2000	2115 MHz
		Middle	20175	1732.5 MHz	Middle	2175	2132.5MHz
		High	20385	1753.5 MHz	High	2350	2150 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 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 band 17	5MHz	Low	23755	790.5 MHz	Low	5755	736.5 MHz
		Middle	23790	710 MHz	Middle	5790	740 MHz
		High	23825	713.5 MHz	High	5825	743.5 MHz
	10MHz	Low	23780	709 MHz	Low	5780	739 MHz
		Middle	23790	710 MHz	Middle	5790	740 MHz
		High	23800	711 MHz	High	5800	741 MHz

2.2 Worst-case configuration and Mode

Test Mode	Description
TM 1	EUT communication with simulated station in GMSK mode
TM 2	EUT communication with simulated station in 8PSK mode
TM 3	EUT communication with simulated station in WCDMA/RMC mode
TM 4	EUT communication with simulated station in LTE/QPSK mode
TM 5	EUT communication with simulated station in LTE/16QAM mode

2.3 Support Unit used in test

The EUT has been tested as an independent unit.

2.4 Test Environment

Temperature:	Normal: 15°C ~ 35°C, Extreme: -30°C ~ +50°C
Relative Humidity	45-56 % RH Ambient
Voltage:	Nominal: 3.70 Vdc, Extreme: Low 3.4 Vdc, High 4.25 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.

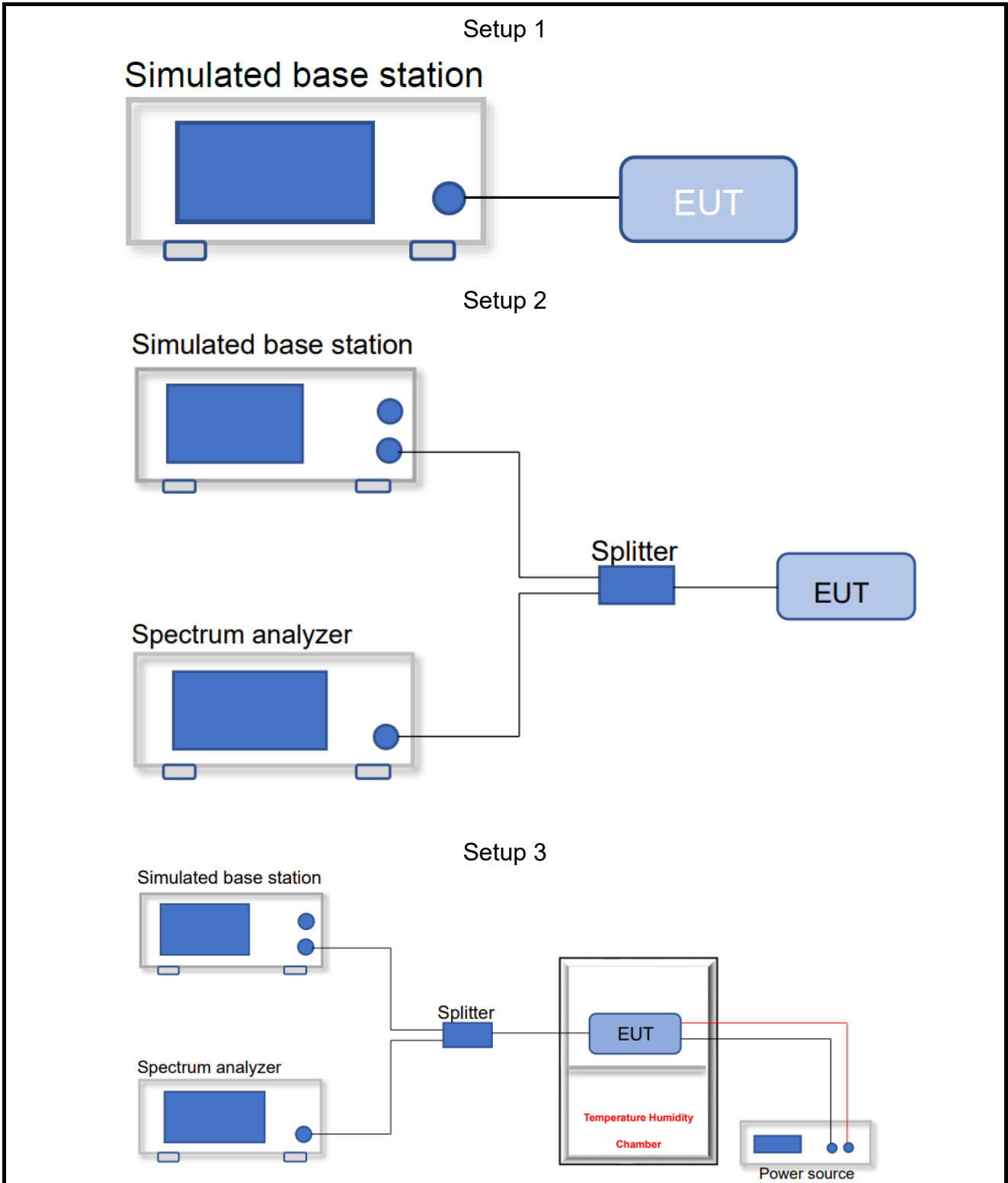
Offset = RF cable loss + attenuator factor.

2.6 Modifications

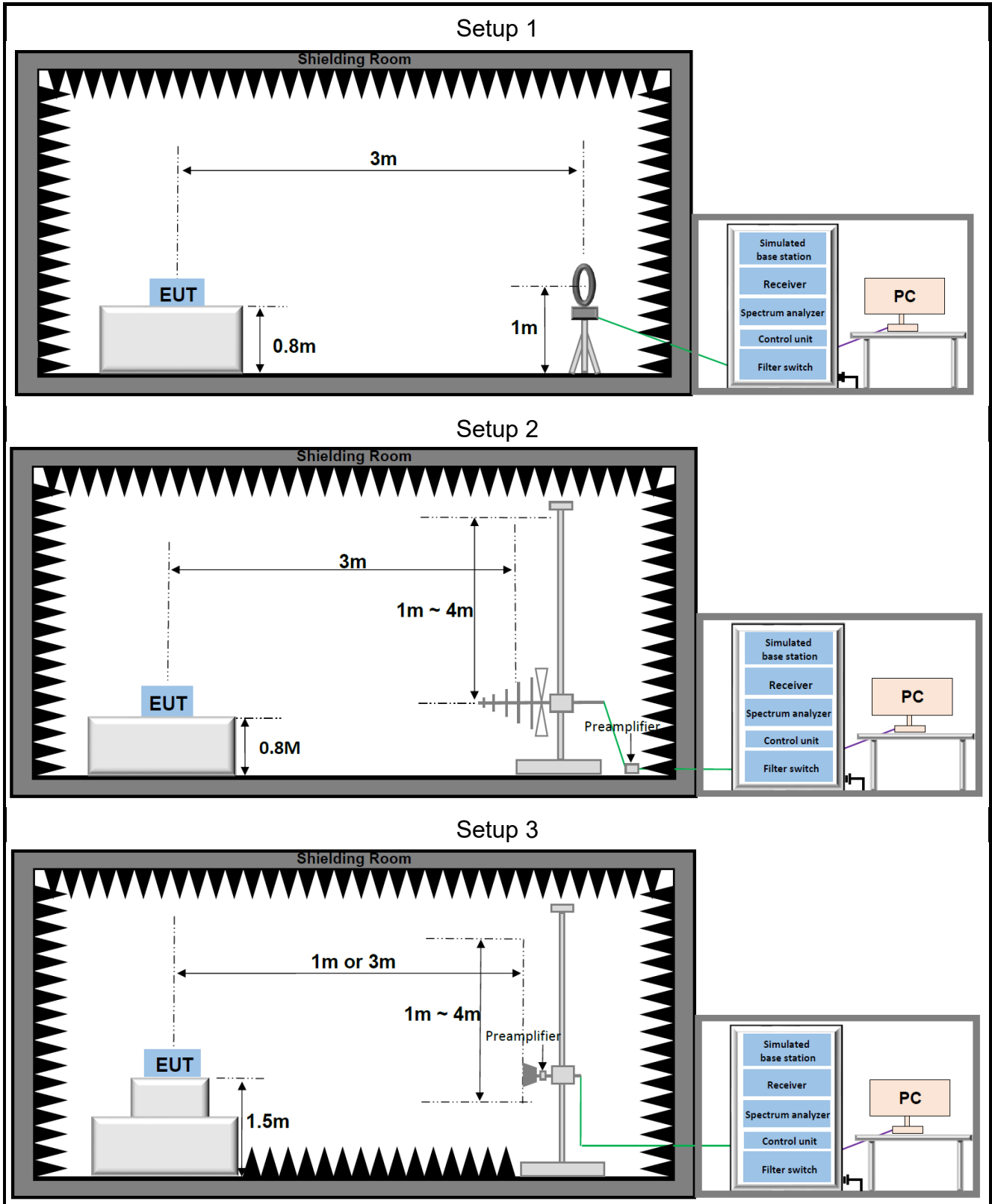
No modifications were made during testing.

2.7 Test Setup Diagram

2.7.1 Conducted Configuration



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

RF4 Test System					
Description	Manufacturer	Model	SN	Last Due	Cal Due
Radio Communication Analyzer	Anritsu	MT8821C	6262170436	2023/04/08	2024/04/07
Signal Analyzer	Keysight	N9020A	US46220152	2023/04/08	2024/04/07
Signal Generator	Keysight	N5182A	MY49060761	2023/04/08	2024/04/07
Signal Generator	R&S	SMR20	101691	2023/04/08	2024/04/07
Hygrometer	BingYu	HTC-1	N/A	2023/06/01	2024/05/31
Band Reject Filter Group	Tonscend	JS0806-F	23B806F0662	N/A	N/A
RF Control Unit	Tonscend	JS0806-1	22L8060650	N/A	N/A
Test software	Tonscend	V3.1.46	10770	N/A	N/A

RF5 Test System					
Description	Manufacturer	Model	SN	Last Due	Cal Due
Wideband Radio Communication Tester	R&S	CMW500	151064	2023/04/08	2024/04/07
Signal Analyzer	Keysight	N9020A	US46470468	2023/04/08	2024/04/07
Signal Generator	Keysight	N5182A	MY50144316	2023/04/08	2024/04/07
Signal Generator	R&S	SMR20	100621	2023/04/08	2024/04/07
Hygrometer	BingYu	HTC-1	N/A	2023/06/01	2024/05/31
Band Reject Filter Group	Tonscend	JS0806-F	22L8060639	N/A	N/A
RF Control Unit	Tonscend	JS0806-1	23A806F0647	N/A	N/A
Test software	Tonscend	V3.1.46	10763	N/A	N/A

3.2 Measurement Uncertainty

Parameter	U _{lab}
Output power	0.76dB
Occupied bandwidth/out-of-band emission/frequency range	6.8kHz
Conducted spurious emissions	2.22dB
Radiation 9kHz~30MHz	2.4dB
Radiation 30MHz~1000MHz	4.66dB
Radiation 1000MHz~18GHz	5.42dB

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)	GSM 850 WCDMA Band V LTE Band 5	The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7watts.
§24.232(c)	GSM 1900 WCDMA Band II LTE Band 2	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)	WCDMA Band IV LTE Band 4	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 17	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.

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 1, Appendix 2, Appendix 3.**

4.2 Peak-Average Ratio

Limits

§22.913(d): The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

§24.232(d): The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

§27.50(d)(5): The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

Test Procedure

KDB 971168 D01 V03r01 Section 5.7.1

Test Settings

The following guidelines are offered for performing a CCDF measurement.

1. Set resolution/measurement bandwidth \geq OBW or specified reference bandwidth.
2. Set the number of counts to a value that stabilizes the measured CCDF curve.
3. Set the measurement interval as follows:
 - a) For continuous transmissions, set to the greater of $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ or 1 ms.
 - b) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.
 - c) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
4. Record the maximum PAPR level associated with a probability of 0.1%.
5. The peak power level is calculated from the sum of the PAPR value from step d) to the measured average power.

Test Setup

Refer to section 2.7.1 Setup 2

Measuring Instruments

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

Test Result

The detailed test data see: **Appendix 1, Appendix 2, Appendix 3.**

4.3 Occupied Bandwidth

Limits

For Reporting Purposes only

Test Procedure

KDB 971168 D01 V03r01 Section 4.2 & 4.3

Test Settings

1. The transmitter output was connected to a calibrated coaxial cable and coupler, The other end is connected to the spectrum analyzer and simulated station.
2. The signal analyzer automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by ant intermediate power nulls in the fundamental emission.
3. The simulated base station was set to force the EUT to its maximum transmitting power.
4. RBW = 1 - 5% of the expected OBW
5. VBW = 3 times the RBW
6. Sweep = Auto
7. Detector = Peak
8. Trace = Max hold
9. The trace was allowed to stabilize

Test Setup

Refer to section 2.7.1 Setup 2

Measuring Instruments

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

Test Result

The detailed test data see: **Appendix 1, Appendix 2, Appendix 3.**

4.4 Band Edge and Emission Mask

Limits

FCC part	Test Band	Limit
§22.917(a) §24.238(a) §27.53(g) §27.53(h)	GSM 850/ GSM 1900 WCDMA Band II/IV/V LTE Band 2/4/5/17	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.

Test Procedure

KDB 971168 D01 V03r01 Section 6.0

Test Settings

1. The transmitter output was connected to a calibrated coaxial cable and coupler, The other end is connected to the spectrum analyzer and simulated station.
2. The simulated base station was set to force the EUT to its maximum transmitting power.
3. Start and stop frequency were set such that the band edge would be placed in the center of the plot.
4. RBW \geq 1% of the emission bandwidth
5. VBW \geq 3 times the RBW
6. Detector = RMS
7. Number of sweep point \geq 2 times Span/RBW
8. Sweep = Auto
9. Trace = Max hold
10. The trace was allowed to stabilize

Test Setup

Refer to section 2.7.1. Setup 2

Measuring Instruments

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

Test Result

The detailed test data see: **Appendix 1, Appendix 2, Appendix 3.**

4.5 Spurious Emission at Antenna Terminals

Limits

FCC part	Test Band	Limit
§22.917(a) §24.238(a) §27.53(g) §27.53(h)	GSM 850 / GSM1900 WCDMA Band VI / III / IV LTE Band 2/4/5/17	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.

Test Procedure

KDB 971168 D01 V03r01 Section 6.0

Test Settings

1. The transmitter output was connected to a calibrated coaxial cable and coupler, The other end is connected to the spectrum analyzer and simulated station.
2. The simulated base station was set to force the EUT to its maximum transmitting power.
3. Start frequency was set to 9kHz and stop frequency was set to 10th harmonic.
4. RBW and VBW (see test notes)
5. Detector = RMS
6. Sweep = Auto
7. Sweep point = below 30MHz(1001pts); 30MHz – 1GHz(2001pts); above 1GHz(40001pts)
8. Trace = trace average for continuous emissions, max hold for pulse emissions
9. Allow trace to fully stabilize

Test Notes

1. Compliance with the applicable limits is based on the use of measurement instrumentation employing a resolution bandwidth 100kHz or greater for measurements below 1GHz. However, in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission is attenuated at least 26dB below the transmitter power
2. 9kHz – 150kHz: RBW=1kHz, VBW \geq 3 times the RBW
3. 150kHz – 30MHz: RBW=10kHz, VBW \geq 3 times the RBW

Test Setup

Refer to section 2.7.1. Setup 2

Measuring Instruments

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

Test Result

The detailed test data see: **Appendix 1, Appendix 2, Appendix 3.**

4.6 Field Strength of Spurious Radiation

Limits

FCC part	Test Band	Limit
§22.917(a) §24.238(a) §27.53(g) §27.53(h)	GSM 850 / GSM 1900 WCDMA Band VI / III / IV LTE Band 2/4/5/17	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.

Test Procedure

KDB 971168 D01 V03r01 Section 7

Test Settings

- 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.
- 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 80cm above the ground plane.
- 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.
- 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.
- The simulated base station was set to force the EUT to its maximum transmitting power.
- spectrum analyzer setting:
 Measurements 9KHz~150KHz: RBW = 300Hz; VBW ≥ 3 kHz; Detector = RMS
 Measurements 150KHz~30MHz: RBW = 10KHz; VBW ≥ 30 kHz; 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
- The field strength is calculated by adding the Antenna Factor, Cable Factor. The basic equation with a sample calculation is as follows:
 $E(\text{dB}\mu\text{V/m}) = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 $E(\text{dB}\mu\text{V/m}) = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$
 $E(\text{dB}\mu\text{V/m}) = \text{EIRP(dBm)} - 20\log(D) + 104.8$; where D is the measurement distance(in the far field region) in m.
 $\text{EIRP(dBm)} = E(\text{dB}\mu\text{V/m}) + 20\log(D) - 104.8$; 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, $\text{EIRP (dBm)} = E (\text{dB}\mu\text{V/m}) + 9.5424 - 104.8 = E (\text{dB}\mu\text{V/m}) - 95.2576$
- Repeat above procedures until all frequencies measured was complete.
- Measure and record the results in the test report.

Test notes

- This device employs GPRS, and EGPRS capabilities. The EUT was tested under all configurations and the highest powers is reported in GPRS mode while transmitting with one slot active.
- This device employs UMTS technology with WCDMA(RMC) and HSDPA capabilities. The EUT was tested under all configurations and the highest power is reported in WCDMA mode with HSDPA Inactive at 12.2kbps RMC and TPC bits all set to "1".
- The EUT was tested in three orthogonal planes and in all possible test configurations and positioning. The emissions are reported with the EUT positioning, modulations, RB sizes and offsets, and channel bandwidth configurations shown in the tables below.
- 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.

5. Radiated spurious emissions were investigated from 9kHz to 30MHz, 30MHz-1GHz and above 1GHz. the disturbance between 9KHz to 30MHz 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.
6. 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 1, Appendix 2, Appendix 3.**

4.7 Frequency Stability V.S. Temperature, Voltage

Limits

§22.355:

The carrier frequency shall not depart from the reference frequency in excess of ± 2.5 ppm for mobile stations.

§24.235 / §27.54:

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

Test Procedure

KDB 971168 D01 V03r01 Section 9

Test Settings

1. The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Test Notes

- a.) Temperature:
The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) Primary Supply Voltage:
The primary supply voltage is varied from 85% to 115% of the nominal value for non-hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Test Setup:

Refer to section 2.7.1 Setup 3

Measuring Instruments

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

Test Result

The detailed test data see: **Appendix 1, Appendix 2, Appendix 3.**

Appendix

Appendix List:

Appendix 1	Appendix 1-GSM
Appendix 2	Appendix 2-WCDMA
Appendix 3	Appendix 3-LTE Band2
	Appendix 3-LTE Band4
	Appendix 3-LTE Band5
	Appendix 3-LTE Band17

~The End~