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# FCC TEST REPORT

Report No.....: AB25060014FW02

FCC ID.....: 2A2SN-SKYCELL830

Applicant..... SkyCell AG

Address....: Hardturmstrasse 11 Zurich, Switzerland

Manufacturer..... SkyCell AG

Address..... Hardturmstrasse 11 Zurich, Switzerland

Product Name....: IoT X Connect

Trade Mark....: SkyCell

Test Model....: CL 830-SC

Additional Model(s)..... CL 830-DF, CL 830-SC2

Standard....: FCC 47 CFR Part 22 Subpart H

FCC 47 CFR Part 24 Subpart E

FCC 47 CFR Part 27

Date of Receipt....:: 2025.06.05

Date of Test Date....: 2025.06.05 - 2025.06.26

Date of Issue....: 2025.06.26

Test Result....: **Pass** 

Compiled by:

(Printed Name + Signature)

Huaijie Li

Supervised by:

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Jay Liu

Approved by:

(Printed Name + Signature)

Mic Cheng

Aibo Standard Technology (Shenzhen) Co., Ltd. Testing Laboratory Name....::

101, Building B, Tuori New Energy Industrial Park, High-tech Park, Address....:

Tianliao Community, Yutang Street, Guangming District, Shenzhen

City, Guangdong Province, China

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Report No.:AB25060014FW02



**FCC TEST REPORT** 

Test Report No.: AB25060014FW02 2025.06.26 Date of issue

EUT.....: IoT X Connect

Test Model.....: CL 830-SC

Applicant.....: : SkyCell AG

Address.....: : Hardturmstrasse 11 Zurich, Switzerland

Telephone.....: : 41445376732

Fax.....: : /

Manufacturer.....: SkyCell AG

Address.....: Hardturmstrasse 11 Zurich, Switzerland

Telephone.....: : 41445376732

Fax.....: : /

Test Result Positive	
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The test report merely corresponds to the test sample.

It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



# **REPORT VERSION**

Report No.:AB25060014FW02

Version No.	Issue Date	Description
01	2025.06.26	Initial Issue



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# 1. GENERAL INFORMATION

# 1.1. GENERAL DESCRIPTION OF EUT

Product Name:	IoT X Connect			
Trade Mark:	SkyCell			
Test Model:	CL 830-SC			
Additional Model(s):	CL 830-DF, CL 830-	-SC2		
Model Difference:	All models are the s	same ci	rcuit and RF module, except the model	
Hardware Version:	N/A			
Software Version:	N/A			
Power Supply:	DC 3.7V by battery	(2400m	nAh) or DC 5V 1A from AC/DC adapter	
EUT Supports Function: (Provided by the customer)	E-UTRA Bands:	LTE B	3and 2/4/5/7/38/40/41	
Test Sample(s) Number:	AB25060014-01 (E AB25020014-02 (N	•	. ,	
Radio Specification Subject to	this Report			
Support Networks:	Band 2 / 4 / 5 / 7 /38	8 / 40 /	41	
	Band 2		1850MHz-1910MHz	
	Band 4		1710MHz-1755MHz	
	Band 5		824MHz-849MHz	
Frequency Range:	Band 7		2500MHz-2570MHz	
Frequency Nange.	Band 38		2570MHz-2620MHz	
	Band 40-1		2305MHz-2315MHz	
	Band 40-2		2350MHz-2360MHz	
	Band 41		2496MHz-2690MHz	
Modulation Type:	QPSK, 16QAM			
	Band 2 1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz			
	Band 4		1.4MHz, 3MHz, 5MHz, 10MHz, 15MHz, 20MHz	
	Band 5		1.4MHz, 3MHz, 5MHz, 10MHz	
Channel Bandwidth:	Band 7		5MHz, 10MHz, 15MHz, 20MHz	
	Band 38		5MHz, 10MHz, 15MHz, 20MHz	
	Band 40-1		5MHz, 10MHz	
	Band 40-2		5MHz, 10MHz	
	Band 41		5MHz, 10MHz, 15MHz, 20MHz	
Antenna Type:	PIFA Antenna			
Antenna Gain:	Band 2	Band 2 -1.01dBi		
/ uncomina Odini.	Band 4		-0.9dBi	

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	Band 5	-0.89dBi
	Band 7	0.28dBi
	Band 38	0.23 dBi
	Band 40-1	0.17dBi
	Band 40-2	0.17dBi
	Band 41	0.18dBi



# 1.2. DESCRIPTION OF SUPPORT EQUIPMENT

Description	Manufacturer	Model	Serial Number	Supplied by
AC/DC Adapter	Xiaomi	MDY-11-EX	SA62212LA04358J	Applicant

# 1.3. DESCRIPTION OF EXTERNAL I/O

I/O Port Description	Quantity	Cable
USB Type-C Interface	1	0.8m, unshielded
Earphone Jack	1	N/A



### 1.4. GENERAL DESCRIPTION OF APPLIED STANDARDS

The tests were performed according to following standards:

FCC 47 CFR Part 22 - Public Mobile Services

FCC 47 CFR Part 24 - Personal Communications Services

FCC 47 CFR Part 27 - Miscellaneous Wireless Communications Services

FCC 47 CFR Part 2 - Frequency Allocations and Radio Treaty Matters; General Rules and Regulations

ANSI C63.26-2015 - American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services

KDB 971168 D01 - KDB 971168 D01 Power Meas License Digital Systems v03r01

<u>KDB 412172 D01 Determining ERP and EIRP v01r01 -</u> Guidelines for determining the effective radiated power (ERP) and isotropically radiated power (EIRP) of an RF transmitting system

### 1.5. DESCRIPTION OF TEST FACILITY

Test Lab: Aibo Standard Technology (Shenzhen) Co., Ltd.

Address: 101, Building B, Tuori New Energy Industrial Park, High-tech Park, Tianliao Community, Yutang Street,

Guangming District, Shenzhen City, Guangdong Province, China

Tel.: +(86) 0755 85250797

E-mail: Aibonorm@aibonorm.com Website: www.Aibonorm.com

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

#### A2LA-Lab Certificate No.: 7514.01

Aibo Standard Technology (Shenzhen) Co., Ltd. has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

# FCC Accredited Lab.

**Designation Number: CN1411** 

Test Firm Registration Number: 567066

# **ISED Wireless Device Testing Laboratories**

CAB identifier: CN0185

### 1.6. MEASUREMENT UNCERTAINTY

The measurement data show herein meets or exceeds the CISPR measurement uncertainty values specified in CISPR 16-4-2 and can be compared directly to specified limit to determine compliance.

Items	Measurement Uncertainty
Radiated Spurious Emissions(9KHz~30MHz)	±2.70dB
Radiated Spurious Emissions(25MHz~1000MHz)	±1.60dB
Radiated Spurious Emissions(1GHz~20GHz)	±2.29dB
Radiated Spurious Emissions(20GHz~40GHz)	±5.32dB
RF Conducted Power	±0.57dB
Conducted Spurious Emissions	±1.60dB
RF Frequency	±6.0 x 10 <sup>-7</sup>
Occupied Bandwidth	±57.74 kHz

Note: All measurement uncertainty values are shown with a coverage factor of k = 2 to indicate a 95 % level of confidence.

## 1.7. ENVIRONMENTAL CONDITIONS

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	+15°C ~ +35°C
Lative Humidity	20 % ~ 75 %
Air Pressure	98KPa ~ 101KPa

### **Normal or Extreme Test Conditions**

Environment Parameter	Selected Values During Tests			
T4 O 4:4:	Ambient			
Test Condition	Temperature (°C)	Voltage (V)	Relative Humidity (%)	
NVNT	+15 to +35	3.7	20 to 75	
NVLT	-30	3.7	20 to 75	
NVHT	+50	3.7	20 to 75	
LVLT	-30	3.15	20 to 75	
HVHT	+50	4.26	20 to 75	

## Remark:

- 1) The EUT just work in such extreme temperature of -30  $^{\circ}$ C to +50  $^{\circ}$ C, so here the EUT is tested in the temperature of -30  $^{\circ}$ C to +50  $^{\circ}$ C.
- 2) NV: Normal Voltage; NT: Normal Temperature
- LV: Low Extreme Test Voltage; HV: High Extreme Test Voltage.
- 3) LT: Low Extreme Test Temperature; HT: High Extreme Test Temperature.



#### 1.8. DESCRIPTION OF TEST MODES

# **System Test Configuration:**

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by a 3.85Vdc battery. Only the worst case data were recorded in this test report.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X/Y/Z axis, and antenna ports.

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.



# 2. SUMMARY OF TEST RESULT

B2				
Item	FCC Rule No.	Requirements	Result	
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	EIRP ≤ 2 W	PASS	
Peak-Average Ratio	§24.232(d)	Limit≤13 dB	PASS	
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS	
Band Edges Compliance	§2.1051, §24.238(a)(b)	Refer to section 2.6	PASS	
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)(b)	≤ -13 dBm/1MHz	PASS	
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	≤ -13 dBm/1MHz	PASS	
Frequency Stability	§2.1055, §24.235	No limit	N/A	

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B4				
Item	FCC Rule No.	Requirements	Result	
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)(4)	EIRP ≤1 W	PASS	
Peak-Average Ratio	§27.50(d) (5)	Limit≤13 dB	PASS	
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	PASS	
Band Edges Compliance	§2.1051, §27.53(h)(1) §27.53(h)(3)(i)	Refer to section 2.6	PASS	
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)(1)	≤ -13 dBm/1MHz	PASS	
Field Strength of Spurious Radiation	§2.1053, §27.53(h)(1)	≤ -13 dBm/1MHz.	PASS	
Frequency Stability	§2.1055, §27.54	No limit	N/A	

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	B	5						
Item	FCC Rule No.	Requirements	Result					
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	ERP ≤ 7W	PASS					
Peak-Average Ratio	N/A	N/A	N/A					
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS					
Band Edges Compliance	§2.1051, §22.917(a)(b)	Refer to section 2.6	PASS					
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	≤ -13 dBm/1MHz	PASS					
Field Strength of Spurious Radiation	§2.1053, §22.355	≤ -13 dBm/1MHz	PASS					
Frequency Stability	§2.1055, §22.355	≤ ±2.5ppm	PASS					

	B7 & B38 & B41									
Item	FCC Rule No.	Requirements	Result							
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)(2)	EIRP ≤2W	PASS							
Peak-Average Ratio	N/A	N/A	N/A							
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS							
Band Edges Compliance	§2.1051, §27.53(m)(4)	Refer to section 2.6	PASS							
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)(4)	≤ -25 dBm/1MHz	PASS							
Field Strength of Spurious Radiation	§2.1053, §27.53(m)(4)	≤ -25 dBm/1MHz	PASS							
Frequency Stability	§2.1055, §27.54	No limit	N/A							



	B40								
Item	FCC Rule No.	Requirements	Result						
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(a)(3)	ERP ≤250mW	PASS						
Peak-Average Ratio	N/A	N/A	N/A						
Bandwidth	§2.1049	OBW: No limit EBW: No limit	PASS						
Band Edges Compliance	§2.1051, §27.53(a)	Refer to section 2.6	PASS						
Spurious Emission at Antenna Terminals	§2.1051, §27.53	≤ -40 dBm/1MHz	PASS						
Field Strength of Spurious Radiation	§2.1053, §27.53	≤ -40 dBm/1MHz	PASS						
Frequency Stability	§2.1055, §27.54	No limit	N/A						



# 3. MEASUREMENT INSTRUMENTS LIST

				0 : 111		0 1 11 ("
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal. Until
1	Loop Antenna	Schwarzbeck	FMZB 1519	1519-025	02/19/2025	02/18/2026
2	Power Amplifier	HZEMC	HPA-9K0133	HYPA23029	02/19/2025	02/18/2026
3	Broadband Antenna	Schwarzbeck	VULB 9168	01763	02/19/2025	02/18/2026
4	Attenuator	PRM	ATT50-6-3	ATT50-6-3	01/20/2025	01/19/2026
5	Spectrum Analyzer	R&S	FSV40-N	101365	01/20/2025	01/19/2026
6	Horn Antenna	Schwarzbeck	BBHA 9120 D	02786	02/19/2025	02/18/2026
7	Horn Antenna	Schwarzbeck	ZLB7-18-40G-77	072410839	02/19/2025	02/18/2026
8	Power Amplifier	HZEMC	PA0118-43	HYPA23030	02/19/2025	02/18/2026
9	Power Amplifier	HZEMC	PA01840-45	HYPA23031	02/19/2025	02/18/2026
10	EMI Test Receiver	R&S	ESCI	101196	01/20/2025	01/19/2026
11	LISN	R&S	ENV216	102374	01/20/2025	01/19/2026
12	Pulse Limiter	Schwarzbeck	ESH3-Z2	0357.8810.54	01/20/2025	01/19/2026
13	MXA Signal Analyzer	Keysight	N9020A	MY52091389	01/20/2025	01/19/2026
14	Power Sensor	Agilent	U2021XA	MY54110007	01/31/2025	01/30/2026
15	Power Sensor	Agilent	U2021XA	MY54110009	01/31/2025	01/30/2026
16	MXG Vector Signal Generator	Agilent	N5182A	MY47070153	01/20/2025	01/19/2026
17	Analog Signal Source	Keysight	N5173B	MY60403029	01/20/2025	01/19/2026
18	Vector Signal Generator	R&S	SMCV100B	106103	01/20/2025	01/19/2026
19	WIDEBAND RADIO COMMUNICATION TESTER	R&S	CMW500	118780	01/20/2025	01/19/2026
20	DC POWER SUPPLY	MAISHENG	MT-305DS	2021040016	02/28/2025	02/27/2026
21	Const Temp. & Humidity Chamber	GRT	GR-HWX-150L	GR25010601	01/20/2025	01/19/2026

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	Test Software								
Software name	Model	Version							
Radiated Emission Measurement Software	FASLAB	V4.1							
RF Conducted Measurement Software(2G/3G/4G)	MTS 8200	V2.0.0.0							

# 4. CONDUCTED OUTPUT POWER AND MAXIMUM ERP/EIRP

## **4.1. LIMIT**

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

According to FCC section 24.232 (c) for LTE Band 2/25, Mobile and portable stations are limited to 2 watts E.I.R.P. and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50 (d)(4) for LTE Band 4/66, Fixed, mobile and portable (hand-held) stations in the 1710-1755MHz band are limited to 1wat E.I.R.P.

According to FCC section22.913 (a)(2) for LTE Band 5, the E.R.P. of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

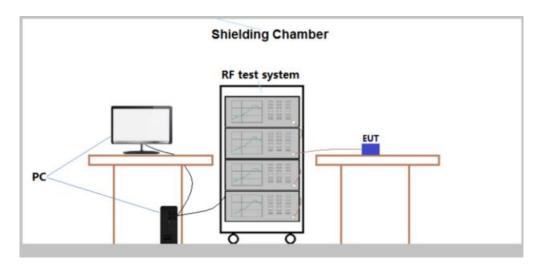
According to FCC section 27.50 (h)(2) for LTE Band 7/41, Mobile and other user stations. Mobile stations are limited to 2 watts E.I.R.P. All user stations are limited to 2 watts transmitter output power.

According to FCC section 27.50 (b)(10)for 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 E.R.P.

According to FCC section 27.50 (c)(10)for LTE Band 12,Portable stations (hand-held devices) operating in the 704-716MHz band are limited to 3watts E.R.P.

According to FCC section 27.50 (a)(3)for LTE Band 40, Mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average E.I.R.P. must not exceed 50 mill watts within any 1 megahertz of authorized bandwidth.

# 4.2. TEST SETUP



# 4.3. TEST PROCEDURE

## For Conducted Output Power Measurement:

Refer to KDB 971168 D01v03r01 & ANSI C63.26-2015 for test method.

The EUT was set up for the maximum power with LTE and link up with simulator (CMW500). Set the EUT to transmit under low, middle and high channel and record the power level.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.



# For ERP/EIRP:

According to KDB 412172 D01 Power Approach,

- ➤ ERP or EIRP = PT + GT LC
- > ERP = EIRP -2.15

where

- > PT = transmitter output power, expressed in dBW, dBm, or PSD;
- > GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
- LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

# 4.4. TEST RESULT

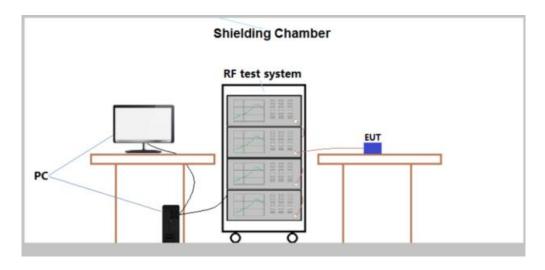
## Pass.

# 5. PEAK-AVERAGE RATIO

# **5.1. LIMIT**

In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

### **5.2. TEST SETUP**



## **5.3. TEST PROCEDURE**

Refer to KDB 971168 D01v03r01 Section 5.7 for test method.

The transmitter output was connected to the RF test system.

- a) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth
- b) Set the number of counts to a value that stabilizes the measured CCDF curve
- c) Record the maximum PAPR level associated with a probability of 0.1 %

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

## **5.4. TEST RESULT**

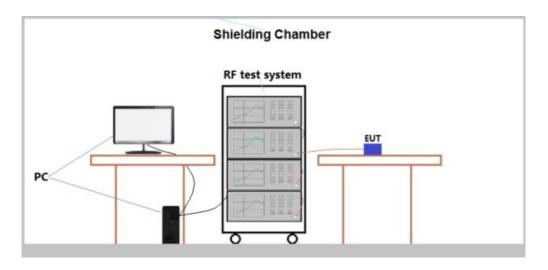
## Pass.

# 6. 26DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

# **6.1. LIMIT**

No Limit, for reporting purposes only.

# 6.2. TEST SETUP



# **6.3. TEST PROCEDURE**

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 Section 4 for test method.

The transmitter output was connected to the RF test system. The occupied bandwidth was measured with the spectrum analyzer at the low, middle and high channel in each band. The 99% and -26dB bandwidths was also measured and recorded.

# 6.4. TEST RESULT

### Pass.



# 7. BAND EDGE AT ANTENNA TERMINALS

### **7.1. LIMIT**

### Band 2, 25

According to FCC section 24.238(a), for operations in the 1850–1910MHz bands, 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) dBm a 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### Band 4, 66

According to FCC section 27.53(h),for operations in the 1710–1755MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log10(P) dBm 1MHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

#### Band 5

According to FCC section 22.917(a),for operations in the 824–849MHz bands, 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) dBm a 100kHz bandwidth. However, in the 1 MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

### Band 7, 38, 41

According to FCC section 27.53(m) (4), for mobile digital stations, the attenuation factor shall be not less than 40 + 10 log (P) dB on all frequencies between the channel edge and 5 megahertz from the channel edge, 43 + 10 log (P) dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and 55 + 10 log (P) dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

#### Band 12

According to FCC section 27.53(g), for operations in the 600 MHz band and the 698-746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

#### Band 13

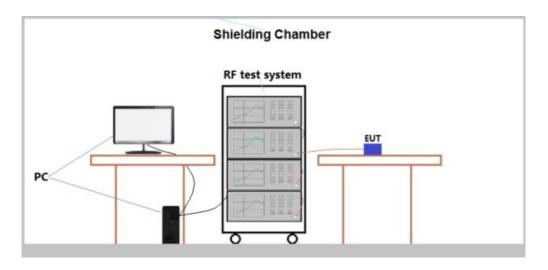
According to FCC section 27.53(c)(2), any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed.

#### Band 40

According to FCC section 27.53(a) (4), for mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(i) By a factor of not less than: 43 + 10 log (P) dB on all frequencies between 2305 and 2320 MHz and on all frequencies between 2345 and 2360 MHz that are outside the licensed band(s) of operation, not less than 55 + 10 log (P) dB on all frequencies between 2320 and 2324 MHz and on all frequencies between 2341 and 2345 MHz, not less than 61 + 10 log (P) dB on all frequencies between 2324 and 2328 MHz and on all frequencies between 2337 and 2341 MHz, and not less than 67 + 10 log (P) dB on all frequencies between 2328 and 2337 MHz; (ii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2300 and 2305 MHz, 55 + 10 log (P) dB on all frequencies between 2292 and 2296 MHz, 67 + 10 log (P) dB on all frequencies between 2288 and 2292 MHz, and 70 + 10 log (P) dB below 2288 MHz; (iii) By a factor of not less than 43 + 10 log (P) dB on all frequencies between 2360 and 2365 MHz, and not less than 70 + 10 log (P) dB above 2365 MHz.

## 7.2. TEST SETUP



FCC ID: 2A2SN-SKYCELL830

## 7.3. TEST PROCEDURE

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 for test method.

The transmitter output was connected to the RF test system.

For each band edge measurement:

- 1) Set the spectrum analyzer span to include the block edge frequency.
- 2) Set a marker to point the corresponding band edge frequency in each test case.
- 3) Set display line at -13 dBm
- 4) Set resolution bandwidth to at least 1% of emission bandwidth.
- 5) Set spectrum analyzer with RMS detector.
- 6) Record the max trace plot into the test report

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

# 7.4. TEST RESULT

## Pass.

# 8. SPURIOUS EMISSIONS AT ANTENNA TERMINALS

## **8.1. LIMIT**

According to FCC section 2.1051, 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. This calculated to be -13dBm.

#### Additional requirement for LTE Band 2/25:

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. This calculated to be -13dBm.

### Additional requirement for LTE Band 4/66:

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. This calculated to be -13dBm.

# Additional requirement for LTE Band 5:

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. This calculated to be -13dBm.

# Additional requirement for LTE Band 7/38/41:

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 55 + 10 log(P) dB. This calculated to be -25dBm.

### Additional requirement for LTE Band 12:

For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. This calculated to be -13dBm.

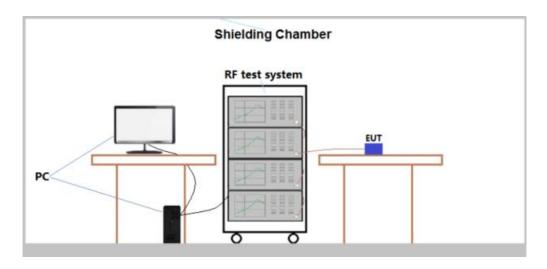
### Additional requirement for LTE Band 13

According to FCC section 27.53(c)(2), 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 in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. This calculated to be -13dBm.

### Additional requirement for LTE Band 40:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

### 8.2. TEST SETUP



### 8.3. TEST PROCEDURE



Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 for test method.

The EUT was connect to the communication simulator. All measurements were done at low, middle and high operational frequency range. Measuring frequency range is from 30 MHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower. Set RBW & VBW to 100 kHz for the measurement below 1 GHz, and 1 MHz for the measurement above 1 GHz.

## 8.4. TEST RESULT

### Pass.



# 9. FIELD STRENGTH OF SPURIOUS RADIATION

## **9.1. LIMIT**

According to FCC section 2.1051, 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. This calculated to be -13dBm.

### Additional requirement for LTE Band 2/25:

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. This calculated to be -13dBm.

### Additional requirement for LTE Band 4/66:

The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB. This calculated to be -13dBm.

#### Additional requirement for LTE Band 5:

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. This calculated to be -13dBm.

### Additional requirement for LTE Band 7/38/41:

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 55 + 10 log(P) dB. This calculated to be -25dBm.

### Additional requirement for LTE Band 12:

For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. This calculated to be -13dBm.

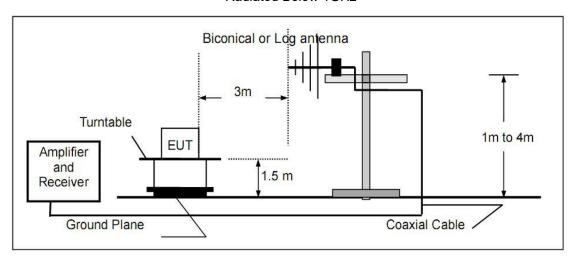
# Additional requirement for LTE Band 13

According to FCC section 27.53(c)(2), 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 in a 100kHz bandwidth. However, in the 100 kHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 30 kHz may be employed. This calculated to be -13dBm.

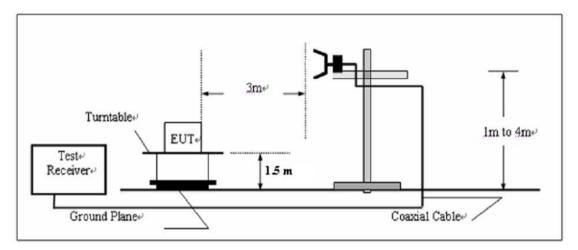
# Additional requirement for LTE Band 40:

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 70 + 10 log (P) dB. This calculated to be -40dBm.

## Radiated Below 1GHz



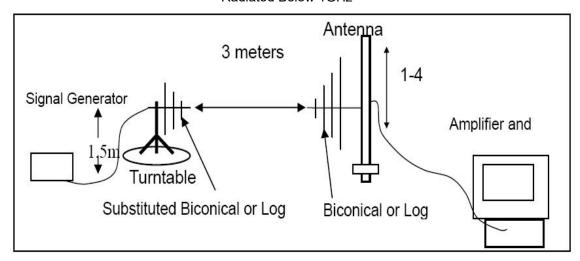
# Radiated Above 1GHz



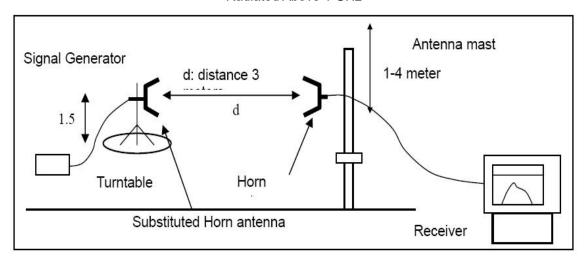
Report No.:AB25060014FW02

#### Substitution Method

Radiated Below 1GHz



Radiated Above 1 GHz



### 9.3. TEST PROCEDURE

Refer to KDB 971168 D01 v03r01 Section 7 for test method.

- (1) EUT was placed on a 1.50 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT for emission measurements. The height of receiving antenna is 1.50m. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
- (2) A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
- (3) The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=1MHz, VBW=3MHz, and the maximum value of the receiver should be recorded as  $(P_r)$ .
- (4) The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency



band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power ( $P_{Mea}$ ) is applied to the input of the substitution antenna, and adjusts the level of the signal generator output until the value of the receiver reach the previously recorded ( $P_r$ ). The power of signal source ( $P_{Mea}$ ) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.

- (5) An amplifier should be connected to the Signal Source output port. And the cable should be connecting between the Amplifier and the Substitution Antenna. The cable loss ( $P_{cl}$ ), the Substitution Antenna Gain ( $G_a$ ) and the Amplifier Gain ( $P_{Ag}$ ) should be recorded after test.
- (6) The measurement results are obtained as described below:

Power(EIRP)= $P_{Mea}$ -  $P_{Ag}$  -  $P_{cl}$  +  $G_a$ 

We used signal generator which signal level can up to 33dBm,so we not used power Amplifier for substitution test; The measurement results are amend as described below:

Power(EIRP)= $P_{Mea}$ -  $P_{cl}$  +  $G_a$ 

(7) This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.

ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP-2.15dBi.

(8) Test frequency range should extend to 10th harmonic of highest fundamental frequency.

## 9.4. TEST RESULT

#### Pass.

#### Remark:

- a) By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "Y axis" position was the worst, and test data recorded in this report.
- b) Pre-scan all modes and recorded the worst case in this report.
- c) Radiated spurious emission test from 9KHz to 10th harmonic of fundamental was verified, and the emission levels from 9kHz to 30MHz are attenuated 20dB below the limit and not recorded in report.



The worst measurement data as follows:

LTE Band2_	20M_Low C	hannel							
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin		
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization	
( )				Gain(dB)	(dBm)	,	( )		
3720.4	-36.03	2.89	3	8.19	-30.73	-13	-17.73	Н	
5586.0	-41.79	3.9	3	5.43	-41.56	-13	-28.56	Н	
3720.4	-42.18	2.89	3	8.19	-34.82	-13	-21.82	V	
5586.0	-49.56	3.9	3	5.43	-39.31	-13	-26.31	V	
LTE Band2_20M_Middle Channel									
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin		
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization	
				Gain(dB)	(dBm)				
3759.8	-35.05	2.89	3	9.55	-28.39	-13	-15.39	Н	
5635.6	-43.03	5.35	3	6.18	-41.56	-13	-28.56	Н	
3759.8	-47.85	2.89	3	9.55	-34.82	-13	-21.82	V	
5635.6	-36	5.35	3	6.18	-39.31	-13	-26.31	V	
LTE Band2_	20M_High C	hannel							
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin		
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization	
				Gain(dB)	(dBm)				
3799.5	-26.55	4.76	3	8.67	-22.64	-13	-9.64	Н	
5708.6	-30.75	4.84	3	5.94	-41.56	-13	-28.56	Н	
3799.5	-34.23	4.76	3	8.67	-34.82	-13	-21.82	V	
5708.6	-46.77	4.84	3	5.94	-39.31	-13	-26.31	V	

LTE Band4_	LTE Band4_20M_Low Channel									
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
. ,		, ,		Gain(dB)	(dBm)	, ,	, ,			
3441.7	-39.3	3.95	3	8.12	-35.13	-13	-22.13	Н		
5157.3	-52.36	4.92	3	6.23	-41.56	-13	-28.56	Н		
3441.7	-48.39	3.95	3	8.12	-34.82	-13	-21.82	V		
5157.3	-42.15	4.92	3	6.23	-39.31	-13	-26.31	V		
LTE Band4_	20M_Middle	Channel								
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
3464.9	-43.34	2.78	3	10.28	-35.84	-13	-22.84	Н		
5199.0	-53.15	4.06	3	6.82	-41.56	-13	-28.56	Н		
3464.9	-33.59	2.78	3	10.28	-34.82	-13	-21.82	V		
5199.0	-41.96	4.06	3	6.82	-39.31	-13	-26.31	V		



LTE Band4_2	LTE Band4_20M_High Channel										
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin				
(MHz)	(dBm)	(dB)	(m)	Antenna Gain(dB)	EIRP (dBm)	(dBm)	(dB)	Polarization			
3490.6	-32.34	4.55	3	8.32	-28.57	-13	-15.57	Н			
5240.1	-58.06	4.38	3	7.24	-41.56	-13	-28.56	Н			
3490.6	-38.1	4.55	3	8.32	-34.82	-13	-21.82	V			
5240.1	-43.07	4.38	3	7.24	-39.31	-13	-26.31	V			

LTE Band5_	10M_Low C	hannel							
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin		
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization	
				Gain(dB)	(dBm)				
1659.0	-47.72	4.59	3	8.64	-43.67	-13	-30.67	Н	
2478.6	-55.3	4.44	3	6.54	-41.56	-13	-28.56	Н	
1659.0	-33.65	4.59	3	8.64	-34.82	-13	-21.82	V	
2478.6	-36.56	4.44	3	6.54	-39.31	-13	-26.31	V	
LTE Band5_10M_Middle Channel									
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin		
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization	
				Gain(dB)	(dBm)				
1669.0	-33.36	4.56	3	9.89	-28.03	-13	-15.03	Н	
2500.6	-36.37	4.41	3	7.23	-41.56	-13	-28.56	Н	
1669.0	-25.98	4.56	3	9.89	-34.82	-13	-21.82	V	
2500.6	-44.34	4.41	3	7.23	-39.31	-13	-26.31	V	
LTE Band5_	10M_High C	hannel							
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin		
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization	
				Gain(dB)	(dBm)				
1679.9	-35.12	2.73	3	8.16	-29.69	-13	-16.69	Н	
2519.9	-44.14	3.54	3	7.09	-41.56	-13	-28.56	Н	
1679.9	-30.93	2.73	3	8.16	-34.82	-13	-21.82	V	
2519.9	-55.06	3.54	3	7.09	-39.31	-13	-26.31	V	

LTE Band7_	LTE Band7_20M_Low Channel										
Frequency	P <sub>Mea</sub>	Pcl	Distance	Ga	Peak	Limit	Margin				
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization			
				Gain(dB)	(dBm)						
5020.3	-36	3.41	3	9.24	-30.17	-25	-5.17	Н			
7528.8	-43.97	5.07	3	7.38	-41.66	-25	-16.66	Н			
5020.3	-41.99	3.41	3	9.24	-36.16	-25	-11.16	V			
7528.8	-36.51	5.07	3	7.38	-34.2	-25	-9.2	V			



HIBUNURM						•		
LTE Band7_2	20M_Middle	Channel						
Frequency	P <sub>Mea</sub>	Pcl	Distance	Ga	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5069.7	-46.38	4.27	3	8.42	-42.23	-25	-17.23	Н
7604.8	-36	3.65	3	6.99	-32.66	-25	-7.66	Н
5069.7	-34.22	4.27	3	8.42	-30.07	-25	-5.07	V
7604.8	-33.88	3.65	3	6.99	-30.54	-25	-5.54	V
LTE Band7_2	20M_High C	hannel						
Frequency	P <sub>Mea</sub>	Pcl	Distance	$G_{a}$	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5120.9	-37.96	4.69	3	8.66	-33.99	-25	-8.99	Н
7677.3	-46.29	4.51	3	7.02	-43.78	-25	-18.78	Н
5120.9	-37.17	4.69	3	8.66	-33.2	-25	-8.2	V
7677.3	-32.45	4.51	3	7.02	-29.94	-25	-4.94	V

LTE Band38	_20M_Low (	Channel						
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5160.1	-36.11	3.71	3	9.5	-30.32	-25	-5.32	Н
7736.3	-49.1	5.24	3	7.58	-46.76	-25	-21.76	Н
5160.1	-42.18	3.71	3	9.5	-36.39	-25	-11.39	V
7736.3	-33.66	5.24	3	7.58	-31.32	-25	-6.32	V
LTE Band38_20M_Middle Channel								
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5189.9	-38.99	3.08	3	8.91	-33.16	-25	-8.16	Н
7781.3	-44.63	3.59	3	7.57	-40.65	-25	-15.65	Н
5189.9	-48.89	3.08	3	8.91	-43.06	-25	-18.06	V
7781.3	-36.79	3.59	3	7.57	-32.81	-25	-7.81	V
LTE Band38	_20M_High	Channel						
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5219.9	-45.44	3.27	3	7.81	-40.9	-25	-15.9	Н
7834.2	-52.72	3.42	3	6.93	-49.21	-25	-24.21	Н
5219.9	-45.61	3.27	3	7.81	-41.07	-25	-16.07	V
7834.2	-36.75	3.42	3	6.93	-33.24	-25	-8.24	V



LTE Band40-1_5M_Low Channel										
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
4615.3	-52.38	3.93	3	8.49	-47.82	-40	-7.82	Н		
6926.4	-58.46	5.04	3	6.46	-57.04	-40	-17.04	Н		
4615.3	-59.39	3.93	3	8.49	-54.83	-40	-14.83	V		
6926.4	-60	5.04	3	6.46	-58.58	-40	-18.58	V		

LTE Band40-1_5M_Middle Channel										
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
4621.0	-52.95	4.19	3	7.85	-49.29	-40	-9.29	Н		
6929.7	-63.09	3.3	3	7.6	-58.79	-40	-18.79	Н		
4621.0	-56.83	4.19	3	7.85	-53.17	-40	-13.17	V		
6929.7	-61.19	3.3	3	7.6	-56.89	-40	-16.89	V		
LTE Band40	-1_5M_High	Channel								
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
4625.8	-53.76	3.95	3	8.21	-49.5	-40	-9.5	Н		
6933.3	-64.04	4.89	3	6.34	-62.59	-40	-22.59	Н		
4625.8	-56.29	3.95	3	8.21	-52.03	-40	-12.03	V		
6933.3	-63.02	4.89	3	6.34	-61.57	-40	-21.57	V		

LTE Band40-2_5M_Low Channel										
Frequency	$P_{Mea}$	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
4704.9	-53.95	3.7	3	8.95	-48.7	-40	-8.7	Н		
7057.3	-63.23	4.96	3	6.1	-62.09	-40	-22.09	Н		
4704.9	-53.36	3.7	3	8.95	-48.11	-40	-8.11	V		
7057.3	-65.72	4.96	3	6.1	-64.58	-40	-24.58	V		
LTE Band40-	·2_5M_Midd	le Channel								
Frequency	$P_{Mea}$	Pcl	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
4710.7	-55.24	4.08	3	8.61	-50.71	-40	-10.71	Н		
7063.7	-52.49	5.06	3	6.16	-51.39	-40	-11.39	Н		
4710.7	-49.58	4.08	3	8.61	-45.05	-40	-5.05	V		
7063.7	-51.33	5.06	3	6.16	-50.23	-40	-10.23	V		



HIDUNUKM						<u> </u>				
LTE Band40-2_5M_High Channel										
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin			
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization		
				Gain(dB)	(dBm)					
4714.7	-30.16	3.5	3	8.26	-45.4	-40	-5.4	Н		
7075.1	-37.12	3.27	3	7.04	-41.56	-40	-1.56	Н		
4714.7	-41.38	3.5	3	8.26	-44.82	-40	-4.82	V		
7075.1	-41.37	3.27	3	7.04	-49.31	-40	-9.31	V		

LTE Band41	_20M_Low (	Channel						
Frequency (MHz)	P <sub>Mea</sub> (dBm)	P <sub>cl</sub> (dB)	Distance (m)	G <sub>a</sub> Antenna	Peak EIRP	Limit (dBm)	Margin (dB)	Polarization
(	(==:::)	()	()	Gain(dB)	(dBm)	(==)	()	
5012.2	-37.07	3.57	3	8.48	-32.16	-25	-7.16	Н
7513.6	-47.74	3.56	3	6.15	-45.15	-25	-20.15	Н
5012.2	-50.76	3.57	3	8.48	-45.85	-25	-20.85	V
7513.6	-31.83	3.56	3	6.15	-29.24	-25	-4.24	V
LTE Band41	_20M_Midd	le Channel			-			
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5186.8	-41.38	3.19	3	8.67	-35.9	-25	-10.9	Н
7775.2	-37.58	5.05	3	6.05	-36.58	-25	-11.58	Н
5186.8	-42.1	3.19	3	8.67	-36.62	-25	-11.62	V
7775.2	-42.87	5.05	3	6.05	-41.87	-25	-16.87	V
LTE Band41	_20M_High	Channel						
Frequency	P <sub>Mea</sub>	P <sub>cl</sub>	Distance	Ga	Peak	Limit	Margin	
(MHz)	(dBm)	(dB)	(m)	Antenna	EIRP	(dBm)	(dB)	Polarization
				Gain(dB)	(dBm)			
5360.7	-37.62	2.91	3	7.7	-32.83	-25	-7.83	Н
8040.9	-36.07	3.51	3	6.25	-33.33	-25	-8.33	Н
5360.7	-35.87	2.91	3	7.7	-31.08	-25	-6.08	V
8040.9	-49.63	3.51	3	6.25	-46.89	-25	-21.89	V



# 10. FREQUENCY STABILITY

## 10.1. LIMIT

## FCC 47 CFR Part 22.355,

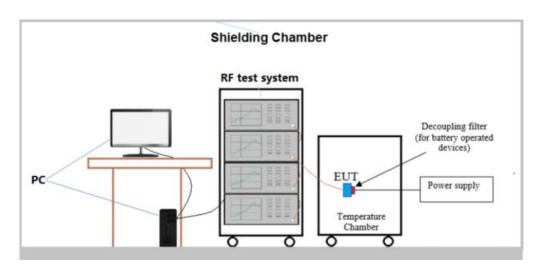
The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations.

FCC ID: 2A2SN-SKYCELL830

# FCC 47 CFR Part 24.235, FCC 47 CFR Part 27.54

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

## 10.2. TEST SETUP



## **10.3. TEST PROCEDURE**

Refer to ANSI C63.26-2015 & KDB 971168 D01v03r01 for test method.

- 1) The transmitter output was connected to the RF test system.
- a) Temp. =  $-30^{\circ}$  to  $+50^{\circ}$ C
- b) Voltage =low voltage, Normal voltage and High voltage.
- 2) Frequency Stability vs Temperature:

The EUT is place inside a temperature chamber. The temperature is set to 20°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured. The temperature is increased by 10 degrees, allowed to stabilize and soak, and then the measurement is repeated. This is repeated until +50°C is reached.

3) Frequency Stability vs Voltage:

The peak frequency error is recorded (worst-case).

## 10.4. TEST RESULT

# Pass.



# 11. PHOTOGRAPHS OF TEST SETUP

Please refer to separated files for Test Setup Photos of the EUT.

# 12. EXTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files for External Photos of the EUT.

# 13. INTERNAL PHOTOGRAPHS OF THE EUT

Please refer to separated files for Internal Photos of the EUT.