





# RF TEST REPORT

**Applicant** Spireon Inc

FCC ID O9YFLF3L

**Product** GPS tracker

Model Flex2-L

**Report No.** R2109A0848-R2V2

Issue Date November 1, 2021

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in FCC CFR47 Part 2 (2020)/ FCC CFR 47 Part 24E (2020). The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Approved by: Kai Xu

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Version	Revision description	Issue Date
Rev.0	Initial issue of report.	October 19, 2021
Rev.1	Update FCC ID in Page 1.	October 27, 2021
Rev.2	Update description in Page 4.	November 1, 2021

Note: This revised report (Report No. R2109A0848-R2V2) supersedes and replaces the previously issued report (Report No. R2109A0848-R2V1). Please discard or destroy the previously issued report and dispose of it accordingly.



## **Summary of measurement results**

No.	Test Case	Clause in FCC rules	Verdict	
1	RF Power Output and Effective	2.1046	PASS	
	Isotropic Radiated Power	24.232(c)	Defects the mandale manager	
		0.4040	Refer to the module report.	
2	Occupied Bandwidth	2.1049	(Report No:	
			RTWK160719001-00)	
			Refer to the module report.	
3	Band Edge Compliance	2.1051 /24.238(a)	(Report No:	
			RTWK160719001-00)	
	Peak-to-Average Power Ratio	04 000/KDD 074460	Refer to the module report.	
4		24.232/KDB 971168	(Report No:	
		D01(5.7)	RTWK160719001-00)	
			Refer to the module report.	
5	Frequency Stability	2.1055 / 24.235	(Report No:	
			RTWK160719001-00)	
			Refer to the module report.	
6	Spurious Emissions at Antenna Terminals	2.1051 / 24.238(a)	(Report No:	
	TOTTIMIAIS		RTWK160719001-00)	
7	Radiates Spurious Emission	2.1053 / 24.238(a)	PASS	

Date of Testing: October 12, 2021

Date of Sample Received: September 23, 2021

Note: PASS: The EUT complies with the essential requirements in the standard.

FAIL: The EUT does not comply with the essential requirements in the standard.

All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.

The report only tests the RF Power Output and Effective Isotropic Radiated Power and Radiates Spurious Emission. Other test items are subject to the module test report. (Report No: R1805A0226-R2V3) and the module RF test report refers to the original Module report. (Report No: RTWK160719001-00).

1. Test Laboratory

1.1. Notes of the test report

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(shanghai) co., Ltd. The results documented in this report apply only to the tested sample, under the

conditions and modes of operation as described herein . Measurement Uncertainties were not taken

into account and are published for informational purposes only. This report is written to support

regulatory compliance of the applicable standards stated above.

1.2. Test facility

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission

list of test facilities recognized to perform measurements.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory

Accreditation to perform measurement.

1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.

Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong

City: Shanghai

Post code: 201201

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E-mail: xukai@ta-shanghai.com





# 2. General Description of Equipment under Test

## 2.1. Applicant and Manufacturer Information

Applicant	Spireon Inc		
Applicant address	9724 Kingston Pike, Suite 800 Knoxville		
Manufacturer	Asiatelco Technologies Co		
Manufacturer address	#289 Bisheng Road, Building-8, 3F, Zhangjiang Hi-Tech		
Manufacturer address	Park, Pudong, Shanghai 201204, China		

## 2.2. General information

	EUT Description			EUT Description							
Model	Flex2-L										
SN	861836059908801										
Hardware Version	P3.0.0										
Software Version	B1										
Power Supply	Battery										
Antenna Type	Internal Antenna										
Antenna Gain	WCDMA band II: 1.0d	lBi									
Afflerina Gain	LTE band 2: 1.0dBi										
Test Mode(s)	WCDMA band II ,LTE Band 2;										
Test Modulation	QPSK,16QAM										
LTE Category	M1										
Maximum E.I.R.P./ E.R.P	WCDMA Band 2:		23.45 dBm								
Maximum E.I.N.F./ E.N.F	LTE Band 2: 24.10 dB			n							
Rated Power Supply Voltage	12V										
Operating Voltage	Minimum: 8V Maxir	mum: 30\	V								
Operating Temperature	Lowest: -30°C Hig	ghest: +70	0°C								
Extreme Temperature	Lowest: 0°C Highe	est: +45°	С								
	Band	Tx (	(MHz)	Rx (MHz)							
Operating Frequency Range(s)	WCDMA Band II	1850	~ 1910	1930 ~ 1990							
	LTE Band 2	1850	~ 1910	1930 ~ 1990							
	EUT Accessory										
Battery	Manufacturer: Expocell Group, Inc.										
,	Model: LIP-2S2PLx18										
Note: 1. The EUT is sent from the	applicant to TA and the	informa	tion of the E	EUT is declared by							
the applicant.											

the applicant.



## 3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

Test standards:

FCC CFR 47 Part 24E (2020)

ANSI C63.26 (2015)

Reference standard:

FCC CFR47 Part 2 (2020)

KDB 971168 D01 Power Meas License Digital Systems v03r01





4. Test Configuration

Radiated measurements are performed by rotating the EUT in three different orthogonal test planes. EUT stand-up position (Z axis), lie-down position (X, Y axis). Receiver antenna polarization (horizontal and vertical), the worst emission was found in position (Z axis, horizontal polarization) and the worst case was recorded.

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All mode and data rates and positions and RB size and modulations were investigated.

Subsequently, only the worst case emissions are reported.

The following testing in LTE is set based on the maximum RF Output Power.

Test modes are chosen to be reported as the worst case configuration below:

	5
Took itomo	Modes/Modulation
Test items	WCDMA Band II
RF Power Output and Effective Isotropic Radiated Power	RMC HSDPA/HSUPA DC-HSDPA
Radiates Spurious Emission	RMC

Test modes are chosen to be reported as the worst case configuration below for LTE Band 2:

Test items	Bandwidth (MHz)				Modulation		RB		Test Channel					
	1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	Н
RF Power Output and Effective Isotropic Radiated Power	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Radiates Spurious Emission	0	-	0	-	1	0	0	-	0	-	-	1	0	-
Note		. The mark "O" means that this configuration is chosen for testing The mark "-" means that this configuration is not testing.												

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## 5. Test Case Results

## 5.1.RF Power Output and Effective Isotropic Radiated Power

#### **Ambient condition**

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### **Methods of Measurement**

During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

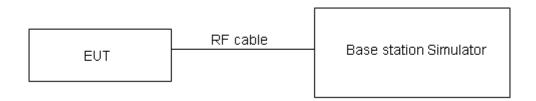
ERP can then be calculated as follows:

EIRP (dBm) = Output Power (dBm) - Losses (dB) + Antenna Gain (dBi)

where:dBd refers to gain relative to an ideal dipole.

EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

#### **Test Setup**



#### Limits

No specific RF power output requirements in part 2.1046.

Rule Part 24.232(c) Mobile and portable stations are limited to 2 watts EIRP.

Rule Part 24.232(e) Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.

Limit	$\leq$ 2 W (33 dBm)

#### **Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U = 0.4 dB for RF power output, k = 2, U = 1.19 dB for EIRP.



## **Test Results**

		Maximum	Output Po	wer (dBm)	EIRP (dBm)			
		Channel	Channel	Channel	Channel	Channel	Channel	
WCDMA	Band II	9262	9400	9538	9262	9400	9538	
		1852.4	1880	1907.6	1852.4	1880	1907.6	
		(MHz)	(MHz)	(MHz)	(MHz)	(MHz)	(MHz)	
RN	<b>IC</b>	22.44	22.45	22.36	23.44	23.45	23.36	
	Sub - Test 1	21.90	21.87	21.80	22.90	22.87	22.80	
HSDPA	Sub - Test 2	21.89	21.89	21.77	22.89	22.89	22.77	
ПЭПРА	Sub - Test 3	21.36	21.39	21.29	22.36	22.39	22.29	
	Sub - Test 4	21.37	21.40	21.27	22.37	22.40	22.27	
	Sub - Test 1	21.86	21.86	21.75	22.86	22.86	22.75	
	Sub - Test 2	20.85	20.84	20.74	21.85	21.84	21.74	
HSUPA	Sub - Test 3	21.32	21.32	21.23	22.32	22.32	22.23	
	Sub - Test 4	20.78	20.81	20.71	21.78	21.81	21.71	
	Sub - Test 5	21.79	21.79	21.69	22.79	22.79	22.69	
	Sub - Test 1	21.78	21.81	21.70	22.78	22.81	22.70	
DC-HSDPA	Sub - Test 2	21.77	21.80	21.69	22.77	22.80	22.69	
	Sub - Test 3	21.35	21.29	21.20	22.35	22.29	22.20	
	Sub - Test 4	21.34	21.28	21.19	22.34	22.28	22.19	

BAND	Bandwidth	Modulation	Channel	RB Configuration	Maximum Output Power(dBm)	EIRP(dBm)
				1RB#0	22.49	23.49
			1RB#3	22.55	23.55	
			1RB#5	22.64	23.64	
		18607	3RB#0	22.37	23.37	
				3RB#2	22.38	23.38
		IM QPSK		3RB#3	22.49	23.49
				6RB#0	21.26	22.26
LTE	1.4M		18900	1RB#0	22.24	23.24
band 2	1.4101			1RB#3	22.71	23.71
				1RB#5	22.59	23.59
				3RB#0	22.55	23.55
				3RB#2	22.56	23.56
				3RB#3	22.64	23.64
				6RB#0	21.45	22.45
			19193	1RB#0	22.39	23.39
			18183	1RB#3	22.45	23.45

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$\overline{}$	RF Test Report				Report No.: R2109	
				1RB#5	22.28	23.28
				3RB#0	22.28	23.28
				3RB#2	22.17	23.17
				3RB#3	22.24	23.24
				6RB#0	21.26	22.26
				1RB#0	21.51	22.51
			18607	1RB#3	21.63	22.63
				1RB#5	21.39	22.39
				1RB#0	21.41	22.41
		16QAM	18900	1RB#3	21.45	22.45
				1RB#5	21.53	22.53
				1RB#0	21.05	22.05
			19193	1RB#3	21.26	22.26
				1RB#5	21.53	22.53
				1RB#0	22.25	23.25
				1RB#8	22.07	23.07
				1RB#14	22.41	23.41
			18615	8RB#0	21.20	22.20
				8RB#4	21.19	22.19
				8RB#7	21.14	22.14
				15RB#0	21.17	22.17
				1RB#0	22.51	23.51
			-	1RB#8	22.07	23.07
				1RB#14	22.22	23.22
		QPSK	18900	8RB#0	21.06	22.06
				8RB#4	21.14	22.14
				8RB#7	21.21	22.21
			-	15RB#0	21.17	22.17
	3M			1RB#0	22.98	23.98
				1RB#8	22.75	23.75
				1RB#14	22.69	23.69
			19185	8RB#0	21.90	22.90
				8RB#4	21.92	22.92
				8RB#7	21.91	22.91
				15RB#0	21.76	22.76
				1RB#0	21.19	22.19
			18615	1RB#8	21.09	22.09
				1RB#14	21.13	22.13
		16QAM		1RB#0	21.51	22.51
			18900	1RB#8	21.07	22.07
				1RB#14	21.32	22.32
				1RB#0	21.86	22.86
			19185	1RB#8	21.69	22.69
		l		ΠΛΩ#Ο	۵۱.۵۵	22.03



	RF Test Report			_	Report No.: R2109	A0040-112 V Z
				1RB#14	21.85	22.85
				1RB#0	22.65	23.65
				1RB#13	22.68	23.68
				1RB#24	22.69	23.69
			18625	12RB#0	21.77	22.77
				12RB#6	21.83	22.83
				12RB#13	21.88	22.88
				25RB#0	21.79	22.79
				1RB#0	22.22	23.22
				1RB#13	22.17	23.17
				1RB#24	22.30	23.30
		QPSK	18900	12RB#0	20.15	21.15
				12RB#6	20.74	21.74
				12RB#13	21.21	22.21
				25RB#0	21.18	22.18
	5.4			1RB#0	22.92	23.92
	5M			1RB#13	22.09	23.09
				1RB#24	22.90	23.90
			19175	12RB#0	22.01	23.01
				12RB#6	21.93	22.93
				12RB#13	21.84	22.84
				25RB#0	21.82	22.82
		16QAM	18625 18900	1RB#0	21.47	22.47
				1RB#13	21.45	22.45
				1RB#24	21.39	22.39
				1RB#0	20.73	21.73
				1RB#13	20.64	21.64
				1RB#24	21.16	22.16
				1RB#0	22.02	23.02
			19175	1RB#13	21.83	22.83
				1RB#24	22.11	23.11
				1RB#0	23.10	24.10
				1RB#25	22.78	23.78
				1RB#49	22.88	23.88
			18650	25RB#0	21.55	22.55
				25RB#13	21.63	22.63
	4014	OPOL		25RB#25	21.75	22.75
	10M	QPSK		50RB#0	21.75	22.75
				1RB#0	22.33	23.33
				1RB#25	22.17	23.17
			18900	1RB#49	22.26	23.26
				25RB#0	21.30	22.30
				25RB#13	21.17	22.17



	RF Test Report			Report No.: R2109A0848-R2V2				
				25RB#25	21.28	22.28		
				50RB#0	21.14	22.14		
				1RB#0	22.65	23.65		
				1RB#25	22.82	23.82		
				1RB#49	22.71	23.71		
			19150	25RB#0	21.74	22.74		
				25RB#13	21.68	22.68		
				25RB#25	21.67	22.67		
				50RB#0	21.57	22.57		
				1RB#0	21.88	22.88		
			18650	1RB#25	22.00	23.00		
				1RB#49	21.95	22.95		
				1RB#0	21.57	22.57		
		16QAM	18900	1RB#25	21.87	22.87		
				1RB#49	21.54	22.54		
				1RB#0	21.68	22.68		
			19150	1RB#25	21.58	22.58		
				1RB#49	21.29	22.29		
			18675	1RB#0	22.43	23.43		
				1RB#38	22.38	23.38		
				1RB#74	22.46	23.46		
				36RB#0	21.49	22.49		
		QPSK		36RB#18	21.46	22.46		
				36RB#39	21.49	22.49		
				75RB#0	21.39	22.39		
				1RB#0	22.47	23.47		
				1RB#38	22.32	23.32		
				1RB#74	22.29	23.29		
			18900	36RB#0	21.37	22.37		
				36RB#18	21.34	22.34		
	15M			36RB#39	21.42	22.42		
				75RB#0	21.39	22.39		
				1RB#0	22.47	23.47		
				1RB#38	22.23	23.23		
				1RB#74	22.38	23.38		
			19125	36RB#0	21.24	22.24		
				36RB#18	21.21	22.21		
				36RB#39	21.48	22.48		
				75RB#0	21.39	22.39		
				1RB#0	21.59	22.59		
		400 414	18675	1RB#38	21.48	22.48		
		16QAM		1RB#74	21.43	22.43		
			18900	1RB#0	21.57	22.57		



	RF Test Report			Report No.: R2109A0848-R2V2				
				1RB#38	21.53	22.53		
				1RB#74	21.38	22.38		
				1RB#0	21.48	22.48		
			19125	1RB#38	21.32	22.32		
				1RB#74	21.38	22.38		
				1RB#0	22.19	23.19		
				1RB#50	22.41	23.41		
				1RB#99	22.49	23.49		
			18700	50RB#0	21.53	22.53		
				50RB#25	21.58	22.58		
				50RB#50	21.62	22.62		
				100RB#0	21.52	22.52		
				1RB#0	22.36	23.36		
				1RB#50	22.70	23.70		
				1RB#99	22.50	23.50		
		QPSK	18900	50RB#0	21.31	22.31		
				50RB#25	21.34	22.34		
				50RB#50	21.44	22.44		
				100RB#0	21.37	22.37		
	20M			1RB#0	22.72	23.72		
	20101			1RB#50	22.63	23.63		
				1RB#99	22.48	23.48		
			19100	50RB#0	21.39	22.39		
				50RB#25	21.34	22.34		
				50RB#50	21.38	22.38		
				100RB#0	21.34	22.34		
				1RB#0	21.94	22.94		
			18700	1RB#50	22.09	23.09		
				1RB#99	21.89	22.89		
				1RB#0	21.78	22.78		
		16QAM	18900	1RB#50	22.02	23.02		
				1RB#99	21.77	22.77		
				1RB#0	22.30	23.30		
			19100	1RB#50	22.49	23.49		
				1RB#99	22.21	23.21		



## 5.2. Radiates Spurious Emission

#### **Ambient condition**

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### **Method of Measurement**

- 1. The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26 (2015).
- 2. Below 1GHz: The EUT is placed on a turntable 0.8 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H). Above 1GHz: (Note: the FCC's permission to use 1.5m as an alternative per TCBC Conf call of Dec. 2, 2014.) The EUT is placed on a turntable 1.5 meters above the ground in the chamber, 3 meter away from the antenna. The maximal emission value is acquired by adjusting the antenna height, polarisation and turntable azimuth. Normally, the height range of antenna is 1 m to 4 m, the azimuth range of turntable is 0° to 360°, and the receive antenna has two polarizations Vertical (V) and Horizontal (H).
- 3. A loop antenna, A log-periodic antenna or 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.
- 4. 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 (Pr).
- 5. 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 (PMea) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (Pr). The power of signal source (PMea) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
- 6. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (PcI) ,the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
- 7. The measurement results are obtained as described below:

Power(EIRP)=PMea- PAg - Pcl + Ga

The measurement results are amend as described below:

Power(EIRP)=PMea- Pcl + Ga

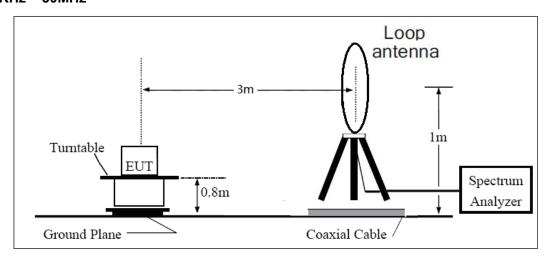
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP

### = EIRP-2.15dB.

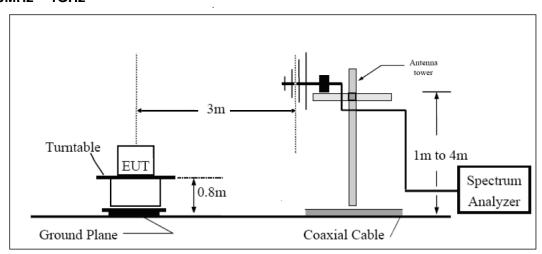
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

## **Test setup**

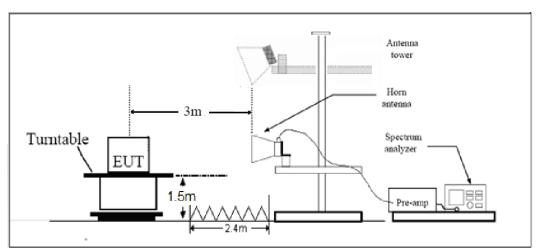
### 9KHz ~ 30MHz



30MHz ~ 1GHz



#### **Above 1GHz**



Note: Area side: 2.4mX3.6m



#### Limits

Rule Part 24.238(a) specifies that "on any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log10 (P) dB."

Limit	-13 dBm
-------	---------

## **Measurement Uncertainty**

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U = 3.55 dB.





**Test Result** 

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the emissions below the noise floor will not be recorded in the report.

Report No.: R2109A0848-R2V2

## WCDMA Band II CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3760.00	-53.18	2.60	12.50	Horizontal	-43.28	-13.00	30.28	180
3	5637.10	-48.80	3.30	12.50	Horizontal	-39.60	-13.00	26.60	0
4	7520.00	-56.58	4.20	12.20	Horizontal	-48.58	-13.00	35.58	90
5	9400.00	-53.06	4.30	11.10	Horizontal	-46.26	-13.00	33.26	45
6	11280.00	-48.67	5.90	11.90	Horizontal	-42.67	-13.00	29.67	315
7	13160.00	-51.29	5.70	14.00	Horizontal	-42.99	-13.00	29.99	90
8	15040.00	-46.41	5.80	13.10	Horizontal	-39.11	-13.00	26.11	45
9	16920.00	-48.88	6.10	14.60	Horizontal	-40.38	-13.00	27.38	0
10	18800.00	-	-	-	-	-		-	-

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

### LTE Band 2 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3759.0	-43.20	2.60	12.50	Horizontal	-33.30	-13.0	20.30	45
3	5638.9	-39.73	3.30	12.50	Horizontal	-30.53	-13.0	17.53	180
4	7520.0	-55.15	4.20	12.20	Horizontal	-47.15	-13.0	34.15	90
5	9400.0	-51.48	4.30	11.10	Horizontal	-44.68	-13.0	31.68	0
6	11280.0	-50.23	5.90	11.90	Horizontal	-44.23	-13.0	31.23	45
7	13160.0	-51.10	5.70	14.00	Horizontal	-42.80	-13.0	29.80	270
8	15040.0	-46.14	5.80	13.10	Horizontal	-38.84	-13.0	25.84	315
9	16920.0	-46.03	6.10	14.60	Horizontal	-37.53	-13.0	24.53	90
10	18800.0		ı				1		1

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

2. The worst emission was found in the antenna is Horizontal position.

<sup>2.</sup> The worst emission was found in the antenna is Horizontal position.



## LTE Band 2 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3755.6	-41.67	2.60	12.50	Horizontal	-31.77	-13.0	18.77	135
3	5633.6	-43.96	3.30	12.50	Horizontal	-34.76	-13.0	21.76	90
4	7520.0	-55.99	4.20	12.20	Horizontal	-47.99	-13.0	34.99	0
5	9400.0	-51.37	4.30	11.10	Horizontal	-44.57	-13.0	31.57	315
6	11280.0	-50.02	5.90	11.90	Horizontal	-44.02	-13.0	31.02	270
7	13160.0	-51.03	5.70	14.00	Horizontal	-42.73	-13.0	29.73	135
8	15040.0	-45.82	5.80	13.10	Horizontal	-38.52	-13.0	25.52	90
9	16920.0	-47.67	6.10	14.60	Horizontal	-39.17	-13.0	26.17	0
10	18800.0								

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

<sup>2.</sup> The worst emission was found in the antenna is Horizontal position.



### LTE Band 2 20MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3742.1	-42.88	2.60	12.50	Horizontal	-32.98	-13.0	19.98	45
3	5613.4	-42.88	3.30	12.50	Horizontal	-33.68	-13.0	20.68	90
4	7484.6	-55.93	4.20	12.20	Horizontal	-47.93	-13.0	34.93	315
5	9400.0	-52.21	4.30	11.10	Horizontal	-45.41	-13.0	32.41	45
6	11280.0	-49.18	5.90	11.90	Horizontal	-43.18	-13.0	30.18	0
7	13160.0	-51.01	5.70	14.00	Horizontal	-42.71	-13.0	29.71	180
8	15040.0	-46.14	5.80	13.10	Horizontal	-38.84	-13.0	25.84	135
9	16920.0	-48.54	6.10	14.60	Horizontal	-40.04	-13.0	27.04	0
10	18800.0								

Note: 1. The other Spurious RF Radiated emissions level is no more than noise floor.

<sup>2.</sup> The worst emission was found in the antenna is Horizontal position.



## 6. Main Test Instruments

Name	Manufacturer	Туре	Serial Number	Calibration Date	Expiration Date
Base Station Simulator	R&S	CMW500	113824	2021-05-15	2022-05-14
Spectrum Analyzer	R&S	FSV30	104028	2021-05-15	2022-05-14
Horn Antenna	Schwarzbeck	BBHA 9120D	1594	2020-12-17	2021-12-16
Software	R&S	EMC32	10.35.10	1	/

\*\*\*\*\*\*END OF REPORT \*\*\*\*\*\*



# **ANNEX A: The EUT Appearance**

The EUT Appearance are submitted separately.



# **ANNEX B: Test Setup Photos**

The Test Setup Photos are submitted separately.