

RF TEST REPORT

Applicant	Positioning Universal Inc
FCC ID	2AHRH-FJ1600LW
Product	GPS TRACK
Brand	PUI
Model	FJ1600LW
Report No.	R2406A0659-R1
Issue Date	July 11, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2023)/ FCC CFR 47 Part 22H (2023)**. 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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Summary of Measurement Results

No.	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Radiated Power	2.1046 22.913(a)(5)	PASS
2	Radiated Spurious Emission	2.1053 / 22.917 (a)	PASS
Date of Testing: June 26, 2024 ~ July 2, 2024			
Date of Sample Received: June 18, 2024			
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 Eurofins 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.			

Only RF Power Output and Radiated Spurious Emission are tested for FJ1600LW in this report, and Effective Radiated Power also re-evaluated.

Other test items refer to the Module report (Report No.: TELI0004.0 Rev.4, FCC ID: RI7LE910CXWWX).

1. Test Laboratory

1.1. Notes of the Test Report

This report shall not be reproduced in full or partial, without the written approval of **Eurofins TA Technology (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)

Eurofins 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)

Eurofins TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform measurement.

1.3. Testing Location

Company: Eurofins TA Technology (Shanghai) Co., Ltd.
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2. General Description of Equipment Under Test

2.1. Applicant and Manufacturer Information

Applicant	Positioning Universal Inc
Applicant address	4660 La Jolla Village Drive, Suite 1100, San Diego , CA92122, United States
Manufacturer	Positioning Universal Inc
Manufacturer address	4660 La Jolla Village Drive, Suite 1100, San Diego , CA92122, United States

2.2. General Information

EUT Description			
Model	FJ1600LW		
Lab internal SN	R2406A0659/S01		
Hardware Version	P5.1		
Software Version	1.0		
Power Supply	Battery / Adapter		
Antenna Type	Internal Antenna		
Antenna Gain	GSM 850	0.0 dBi	
	LTE Band 5	0.0 dBi	
	LTE Band 26	0.0 dBi	
Test Mode(s)	GSM 850; LTE Band 5/26;		
Test Modulation	(GPRS)GMSK, (EGPRS) GMSK/ 8PSK; (LTE) QPSK, 16QAM;		
GPRS Multislot Class	12		
EGPRS Multislot Class	12		
LTE Category	1		
Maximum E.R.P.	GSM 850	29.79 dBm	
	LTE Band 5	19.67 dBm	
	LTE Band 26	19.74 dBm	
Rated Power Supply Voltage	12V		
Operating Voltage	Minimum: 6V Maximum: 32V		
Operating Temperature	Lowest: -30°C Highest: +75°C		
Testing Temperature	Lowest: -30°C Highest: +50°C		
Operating Frequency Range(s)	Band	Tx (MHz)	Rx (MHz)

	GSM850	824 ~ 849	869 ~ 894
	LTE Band 5	824 ~ 849	869 ~ 894
	LTE Band 26	824 ~ 849	869 ~ 894
EUT Accessory			
Battery	Manufacturer: Shenzhen Shenlan Aifa Technology Co., Ltd. Model: SL703048		
Auxiliary Test Equipment			
Adapter	Manufacturer: SHENZHEN AQUIL STAR TECHNOLOGY CO., LTD. Model: ASSA107A-120100		
Note: 1. The EUT is sent from the applicant to Eurofins TA and the information of the EUT is declared by 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 22H (2023)

FCC CFR47 Part 2 (2023)

Reference standard:

ANSI C63.26-2015

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 for GSM 850 and Y axis, horizontal polarization for LTE Band 5/26) and the worst case was recorded.

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 GSM/LTE is set based on the maximum RF Output Power.

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

Test items	Modes/Modulation
	GSM 850
RF Power Output and Effective Radiated power	GPRS EGPRS
Radiated Spurious Emission	GPRS

Test modes are chosen as the worst case configuration below for LTE Band 5/26

Test items	Modes	Bandwidth (MHz)					Modulation		RB			Test Channel		
		1.4	3	5	10	15	QPSK	16QAM	1	50%	100%	L	M	H
RF power output and Effective Radiated power	LTE 5	O	O	O	O	-	O	O	O	O	O	O	O	O
	LTE 26	O	O	O	O	O	O	O	O	O	O	O	O	O
Radiated Spurious Emission	LTE 5	O	-	O	O	-	O	-	O	-	-	-	O	-
	LTE 26	O	-	O	-	O	O	-	O	-	-	-	O	-
Note	1. The mark "O" means that this configuration is chosen for testing. 2. The mark "-" means that this configuration is not testing.													

5. Test Case

5.1. RF Power Output and Effective Radiated Power

Ambient Condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Methods of Measurement

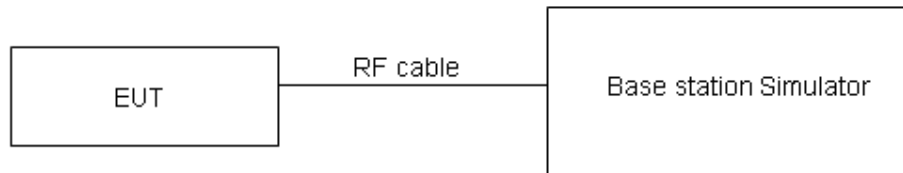
During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:

$$\text{EIRP (dBm)} = \text{Output Power (dBm)} + \text{Antenna Gain (dBi)}$$

$$\text{EIRP (dBm)} = \text{ERP (dBm)} + 2.15 \text{ (dB)}$$

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 22.913(a)(5) specifies that "Mobile/portable stations are limited to 7 watts ERP".

Limit	≤ 7 W (38.45 dBm)
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Measurement Uncertainty

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

Test Results

Refer to the section 6.1 of this report for test data.

5.2. Radiated Spurious Emission

Ambient Condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

Method of Measurement

- The testing follows FCC KDB 971168 v03r01 Section 5.8 and ANSI C63.26-2015.
- 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).
- 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.
- The EUT is then put into continuously transmitting mode at its maximum power level during the test. Set Test Receiver or Spectrum RBW=100kHz, VBW=300kHz, and the maximum value of the receiver should be recorded as (Pr).
- 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.
- 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 (Pcl), the Substitution Antenna Gain (Ga) and the Amplifier Gain (PAg) should be recorded after test.
- The measurement results are obtained as described below:

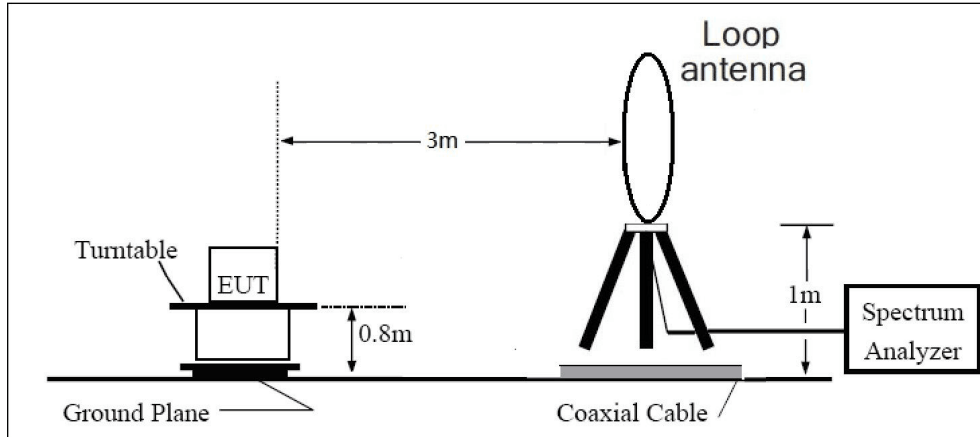
$$\text{Power (EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$
 The measurement results are amend as described below:

$$\text{Power (EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
- 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, $\text{ERP} = \text{EIRP} - 2.15\text{dB}$.

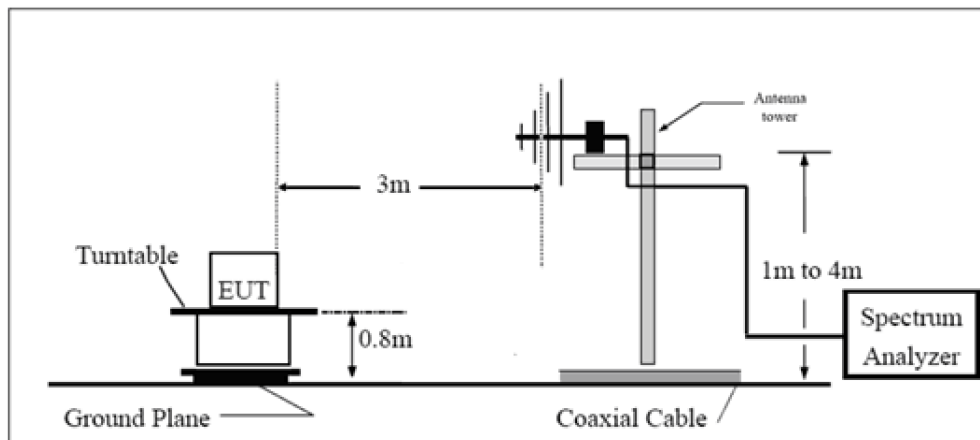
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test Setup

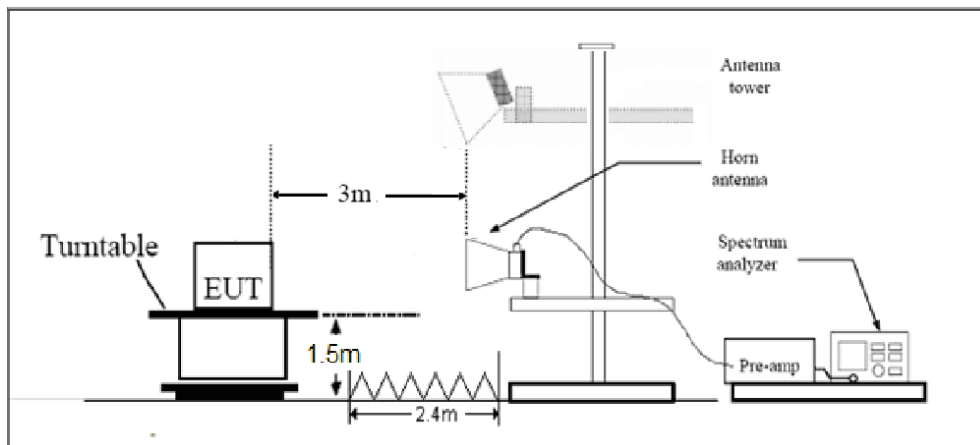
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side: 2.4mX3.6m

Limits

Rule Part 22.917(a) specifies that “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.”

Limit	-13 dBm
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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 Results

Refer to the section 6.2 of this report for test data.

6. Test Result

6.1. RF Power Output and Effective Radiated Power

GSM 850		Maximum Output Power (dBm)			ERP (dBm)		
		Channel 128	Channel 190	Channel 251	Channel 128	Channel 190	Channel 251
		824.2 (MHz)	836.6 (MHz)	848.8 (MHz)	824.2 (MHz)	836.6 (MHz)	848.8 (MHz)
GPRS (GMSK)	1Txslot	31.87	31.94	31.65	29.72	29.79	29.50
	2Txslots	31.63	31.75	31.40	29.48	29.60	29.25
	3Txslots	30.46	30.51	30.45	28.31	28.36	28.30
	4Txslots	28.40	28.35	28.24	26.25	26.20	26.09
EGPRS (8PSK)	1Txslot	27.65	27.63	27.59	25.50	25.48	25.44
	2Txslots	27.34	27.51	27.42	25.19	25.36	25.27
	3Txslots	27.02	27.31	27.21	24.87	25.16	25.06
	4Txslots	26.98	27.12	26.96	24.83	24.97	24.81

LTE Band5						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)
1.4	20407	1	#0	QPSK	21.44	19.29
1.4	20407	1	#Mid	QPSK	21.60	19.45
1.4	20407	1	#Max	QPSK	21.62	19.47
1.4	20407	3	#0	QPSK	21.36	19.21
1.4	20407	3	#Mid	QPSK	21.35	19.20
1.4	20407	3	#Max	QPSK	21.37	19.22
1.4	20407	6	#0	QPSK	20.14	17.99
1.4	20525	1	#0	QPSK	21.42	19.27
1.4	20525	1	#Mid	QPSK	21.46	19.31
1.4	20525	1	#Max	QPSK	21.27	19.12
1.4	20525	3	#0	QPSK	21.30	19.15
1.4	20525	3	#Mid	QPSK	21.30	19.15
1.4	20525	3	#Max	QPSK	21.25	19.10
1.4	20525	6	#0	QPSK	20.29	18.14
1.4	20643	1	#0	QPSK	21.29	19.14
1.4	20643	1	#Mid	QPSK	21.35	19.20
1.4	20643	1	#Max	QPSK	21.05	18.90
1.4	20643	3	#0	QPSK	21.32	19.17
1.4	20643	3	#Mid	QPSK	21.32	19.17
1.4	20643	3	#Max	QPSK	21.05	18.90
1.4	20643	6	#0	QPSK	20.31	18.16
3	20415	1	#0	QPSK	21.23	19.08
3	20415	1	#Mid	QPSK	21.19	19.04
3	20415	1	#Max	QPSK	21.20	19.05
3	20415	8	#0	QPSK	20.34	18.19
3	20415	8	#Mid	QPSK	20.36	18.21
3	20415	8	#Max	QPSK	20.27	18.12
3	20415	15	#0	QPSK	20.30	18.15
3	20525	1	#0	QPSK	21.50	19.35
3	20525	1	#Mid	QPSK	21.23	19.08
3	20525	1	#Max	QPSK	21.06	18.91
3	20525	8	#0	QPSK	20.38	18.23
3	20525	8	#Mid	QPSK	20.38	18.23
3	20525	8	#Max	QPSK	20.23	18.08
3	20525	15	#0	QPSK	20.28	18.13
3	20635	1	#0	QPSK	21.30	19.15
3	20635	1	#Mid	QPSK	21.08	18.93
3	20635	1	#Max	QPSK	21.14	18.99
3	20635	8	#0	QPSK	20.23	18.08

3	20635	8	#Mid	QPSK	20.17	18.02
3	20635	8	#Max	QPSK	20.12	17.97
3	20635	15	#0	QPSK	20.20	18.05
5	20425	1	#0	QPSK	21.25	19.10
5	20425	1	#Mid	QPSK	21.40	19.25
5	20425	1	#Max	QPSK	21.48	19.33
5	20425	12	#0	QPSK	20.29	18.14
5	20425	12	#Mid	QPSK	20.19	18.04
5	20425	12	#Max	QPSK	20.25	18.10
5	20425	25	#0	QPSK	20.25	18.10
5	20525	1	#0	QPSK	21.24	19.09
5	20525	1	#Mid	QPSK	21.26	19.11
5	20525	1	#Max	QPSK	20.83	18.68
5	20525	12	#0	QPSK	20.32	18.17
5	20525	12	#Mid	QPSK	20.33	18.18
5	20525	12	#Max	QPSK	20.21	18.06
5	20525	25	#0	QPSK	20.36	18.21
5	20625	1	#0	QPSK	21.39	19.24
5	20625	1	#Mid	QPSK	21.18	19.03
5	20625	1	#Max	QPSK	20.86	18.71
5	20625	12	#0	QPSK	20.23	18.08
5	20625	12	#Mid	QPSK	20.23	18.08
5	20625	12	#Max	QPSK	20.08	17.93
5	20625	25	#0	QPSK	20.18	18.03
10	20450	1	#0	QPSK	21.20	19.05
10	20450	1	#Mid	QPSK	21.60	19.45
10	20450	1	#Max	QPSK	21.29	19.14
10	20450	25	#0	QPSK	20.25	18.10
10	20450	25	#Mid	QPSK	20.25	18.10
10	20450	25	#Max	QPSK	20.47	18.32
10	20450	50	#0	QPSK	20.32	18.17
10	20525	1	#0	QPSK	21.21	19.06
10	20525	1	#Mid	QPSK	21.48	19.33
10	20525	1	#Max	QPSK	20.97	18.82
10	20525	25	#0	QPSK	20.33	18.18
10	20525	25	#Mid	QPSK	20.34	18.19
10	20525	25	#Max	QPSK	20.13	17.98
10	20525	50	#0	QPSK	20.22	18.07
10	20600	1	#0	QPSK	21.01	18.86
10	20600	1	#Mid	QPSK	21.63	19.48
10	20600	1	#Max	QPSK	21.11	18.96
10	20600	25	#0	QPSK	20.12	17.97
10	20600	25	#Mid	QPSK	20.12	17.97

10	20600	25	#Max	QPSK	20.16	18.01
10	20600	50	#0	QPSK	20.00	17.85
1.4	20407	1	#0	16QAM	20.55	18.40
1.4	20407	1	#Mid	16QAM	20.73	18.58
1.4	20407	1	#Max	16QAM	20.63	18.48
1.4	20407	3	#0	16QAM	20.47	18.32
1.4	20407	3	#Mid	16QAM	20.47	18.32
1.4	20407	3	#Max	16QAM	20.54	18.39
1.4	20407	6	#0	16QAM	19.42	17.27
1.4	20525	1	#0	16QAM	21.19	19.04
1.4	20525	1	#Mid	16QAM	21.32	19.17
1.4	20525	1	#Max	16QAM	20.98	18.83
1.4	20525	3	#0	16QAM	20.83	18.68
1.4	20525	3	#Mid	16QAM	20.83	18.68
1.4	20525	3	#Max	16QAM	20.68	18.53
1.4	20525	6	#0	16QAM	19.68	17.53
1.4	20643	1	#0	16QAM	20.42	18.27
1.4	20643	1	#Mid	16QAM	20.38	18.23
1.4	20643	1	#Max	16QAM	20.14	17.99
1.4	20643	3	#0	16QAM	20.40	18.25
1.4	20643	3	#Mid	16QAM	20.41	18.26
1.4	20643	3	#Max	16QAM	20.26	18.11
1.4	20643	6	#0	16QAM	19.48	17.33
3	20415	1	#0	16QAM	20.45	18.30
3	20415	1	#Mid	16QAM	20.46	18.31
3	20415	1	#Max	16QAM	20.31	18.16
3	20415	8	#0	16QAM	19.37	17.22
3	20415	8	#Mid	16QAM	19.29	17.14
3	20415	8	#Max	16QAM	19.31	17.16
3	20415	15	#0	16QAM	19.57	17.42
3	20525	1	#0	16QAM	21.14	18.99
3	20525	1	#Mid	16QAM	21.15	19.00
3	20525	1	#Max	16QAM	21.10	18.95
3	20525	8	#0	16QAM	19.89	17.74
3	20525	8	#Mid	16QAM	19.90	17.75
3	20525	8	#Max	16QAM	19.65	17.50
3	20525	15	#0	16QAM	19.48	17.33
3	20635	1	#0	16QAM	20.41	18.26
3	20635	1	#Mid	16QAM	20.35	18.20
3	20635	1	#Max	16QAM	19.85	17.70
3	20635	8	#0	16QAM	19.80	17.65
3	20635	8	#Mid	16QAM	19.81	17.66
3	20635	8	#Max	16QAM	19.64	17.49

3	20635	15	#0	16QAM	19.52	17.37
5	20425	1	#0	16QAM	20.50	18.35
5	20425	1	#Mid	16QAM	20.64	18.49
5	20425	1	#Max	16QAM	21.03	18.88
5	20425	12	#0	16QAM	19.49	17.34
5	20425	12	#Mid	16QAM	19.51	17.36
5	20425	12	#Max	16QAM	19.48	17.33
5	20425	25	#0	16QAM	19.62	17.47
5	20525	1	#0	16QAM	20.81	18.66
5	20525	1	#Mid	16QAM	21.00	18.85
5	20525	1	#Max	16QAM	20.94	18.79
5	20525	12	#0	16QAM	19.50	17.35
5	20525	12	#Mid	16QAM	19.50	17.35
5	20525	12	#Max	16QAM	19.39	17.24
5	20525	25	#0	16QAM	19.57	17.42
5	20625	1	#0	16QAM	20.14	17.99
5	20625	1	#Mid	16QAM	20.69	18.54
5	20625	1	#Max	16QAM	20.22	18.07
5	20625	12	#0	16QAM	19.61	17.46
5	20625	12	#Mid	16QAM	19.60	17.45
5	20625	12	#Max	16QAM	19.62	17.47
5	20625	25	#0	16QAM	19.54	17.39
10	20450	1	#0	16QAM	20.35	18.20
10	20450	1	#Mid	16QAM	21.06	18.91
10	20450	1	#Max	16QAM	20.50	18.35
10	20450	25	#0	16QAM	19.72	17.57
10	20450	25	#Mid	16QAM	19.73	17.58
10	20450	25	#Max	16QAM	19.95	17.80
10	20525	1	#0	16QAM	21.30	19.15
10	20525	1	#Mid	16QAM	21.82	19.67
10	20525	1	#Max	16QAM	20.92	18.77
10	20525	25	#0	16QAM	19.84	17.69
10	20525	25	#Mid	16QAM	19.84	17.69
10	20525	25	#Max	16QAM	19.53	17.38
10	20600	1	#0	16QAM	20.10	17.95
10	20600	1	#Mid	16QAM	20.89	18.74
10	20600	1	#Max	16QAM	19.99	17.84
10	20600	25	#0	16QAM	19.52	17.37
10	20600	25	#Mid	16QAM	19.52	17.37
10	20600	25	#Max	16QAM	19.69	17.54

LTE Band26						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)
1.4	26797	1	#0	QPSK	21.74	19.59
1.4	26797	1	#Mid	QPSK	21.75	19.60
1.4	26797	1	#Max	QPSK	21.62	19.47
1.4	26797	3	#0	QPSK	21.69	19.54
1.4	26797	3	#Mid	QPSK	21.68	19.53
1.4	26797	3	#Max	QPSK	21.60	19.45
1.4	26797	6	#0	QPSK	20.50	18.35
1.4	26915	1	#0	QPSK	21.62	19.47
1.4	26915	1	#Mid	QPSK	21.49	19.34
1.4	26915	1	#Max	QPSK	21.20	19.05
1.4	26915	3	#0	QPSK	21.41	19.26
1.4	26915	3	#Mid	QPSK	21.41	19.26
1.4	26915	3	#Max	QPSK	21.36	19.21
1.4	26915	6	#0	QPSK	20.44	18.29
1.4	27033	1	#0	QPSK	21.67	19.52
1.4	27033	1	#Mid	QPSK	21.43	19.28
1.4	27033	1	#Max	QPSK	21.22	19.07
1.4	27033	3	#0	QPSK	21.40	19.25
1.4	27033	3	#Mid	QPSK	21.24	19.09
1.4	27033	3	#Max	QPSK	21.06	18.91
1.4	27033	6	#0	QPSK	20.21	18.06
3	26805	1	#0	QPSK	21.55	19.40
3	26805	1	#Mid	QPSK	21.40	19.25
3	26805	1	#Max	QPSK	21.33	19.18
3	26805	8	#0	QPSK	20.54	18.39
3	26805	8	#Mid	QPSK	20.55	18.40
3	26805	8	#Max	QPSK	20.52	18.37
3	26805	15	#0	QPSK	20.44	18.29
3	26915	1	#0	QPSK	21.36	19.21
3	26915	1	#Mid	QPSK	21.23	19.08
3	26915	1	#Max	QPSK	21.25	19.10
3	26915	8	#0	QPSK	20.49	18.34
3	26915	8	#Mid	QPSK	20.50	18.35
3	26915	8	#Max	QPSK	20.45	18.30
3	26915	15	#0	QPSK	20.42	18.27
3	27025	1	#0	QPSK	21.89	19.74
3	27025	1	#Mid	QPSK	21.71	19.56
3	27025	1	#Max	QPSK	21.19	19.04
3	27025	8	#0	QPSK	20.44	18.29

3	27025	8	#Mid	QPSK	20.46	18.31
3	27025	8	#Max	QPSK	20.31	18.16
3	27025	15	#0	QPSK	20.42	18.27
5	26815	1	#0	QPSK	21.47	19.32
5	26815	1	#Mid	QPSK	21.33	19.18
5	26815	1	#Max	QPSK	21.37	19.22
5	26815	12	#0	QPSK	20.48	18.33
5	26815	12	#Mid	QPSK	20.49	18.34
5	26815	12	#Max	QPSK	20.46	18.31
5	26815	25	#0	QPSK	20.49	18.34
5	26915	1	#0	QPSK	21.30	19.15
5	26915	1	#Mid	QPSK	21.34	19.19
5	26915	1	#Max	QPSK	20.93	18.78
5	26915	12	#0	QPSK	20.44	18.29
5	26915	12	#Mid	QPSK	20.44	18.29
5	26915	12	#Max	QPSK	20.44	18.29
5	26915	25	#0	QPSK	20.28	18.13
5	27015	1	#0	QPSK	21.14	18.99
5	27015	1	#Mid	QPSK	21.21	19.06
5	27015	1	#Max	QPSK	21.00	18.85
5	27015	12	#0	QPSK	20.43	18.28
5	27015	12	#Mid	QPSK	20.43	18.28
5	27015	12	#Max	QPSK	20.19	18.04
5	27015	25	#0	QPSK	20.38	18.23
10	26840	1	#0	QPSK	21.55	19.40
10	26840	1	#Mid	QPSK	21.61	19.46
10	26840	1	#Max	QPSK	21.49	19.34
10	26840	25	#0	QPSK	20.45	18.30
10	26840	25	#Mid	QPSK	20.45	18.30
10	26840	25	#Max	QPSK	20.57	18.42
10	26840	50	#0	QPSK	20.45	18.30
10	26915	1	#0	QPSK	21.36	19.21
10	26915	1	#Mid	QPSK	21.66	19.51
10	26915	1	#Max	QPSK	21.28	19.13
10	26915	25	#0	QPSK	20.58	18.43
10	26915	25	#Mid	QPSK	20.59	18.44
10	26915	25	#Max	QPSK	20.40	18.25
10	26915	50	#0	QPSK	20.52	18.37
10	26990	1	#0	QPSK	21.10	18.95
10	26990	1	#Mid	QPSK	21.66	19.51
10	26990	1	#Max	QPSK	21.10	18.95
10	26990	25	#0	QPSK	20.20	18.05
10	26990	25	#Mid	QPSK	20.20	18.05

10	26990	25	#Max	QPSK	20.36	18.21
10	26990	50	#0	QPSK	20.36	18.21
15	26865	1	#0	QPSK	21.41	19.26
15	26865	1	#Mid	QPSK	21.43	19.28
15	26865	1	#Max	QPSK	21.35	19.20
15	26865	36	#0	QPSK	20.44	18.29
15	26865	36	#Mid	QPSK	20.43	18.28
15	26865	36	#Max	QPSK	20.56	18.41
15	26865	75	#0	QPSK	20.45	18.30
15	26915	1	#0	QPSK	21.23	19.08
15	26915	1	#Mid	QPSK	21.42	19.27
15	26915	1	#Max	QPSK	21.00	18.85
15	26915	36	#0	QPSK	20.43	18.28
15	26915	36	#Mid	QPSK	20.44	18.29
15	26915	36	#Max	QPSK	20.33	18.18
15	26915	75	#0	QPSK	20.31	18.16
15	26965	1	#0	QPSK	21.24	19.09
15	26965	1	#Mid	QPSK	21.10	18.95
15	26965	1	#Max	QPSK	21.00	18.85
15	26965	36	#0	QPSK	20.40	18.25
15	26965	36	#Mid	QPSK	20.35	18.20
15	26965	36	#Max	QPSK	20.28	18.13
15	26965	75	#0	QPSK	20.36	18.21
1.4	26797	1	#0	16QAM	21.08	18.93
1.4	26797	1	#Mid	16QAM	21.11	18.96
1.4	26797	1	#Max	16QAM	20.89	18.74
1.4	26797	3	#0	16QAM	20.86	18.71
1.4	26797	3	#Mid	16QAM	20.86	18.71
1.4	26797	3	#Max	16QAM	20.81	18.66
1.4	26797	6	#0	16QAM	19.69	17.54
1.4	26915	1	#0	16QAM	21.36	19.21
1.4	26915	1	#Mid	16QAM	21.08	18.93
1.4	26915	1	#Max	16QAM	21.14	18.99
1.4	26915	3	#0	16QAM	20.70	18.55
1.4	26915	3	#Mid	16QAM	20.69	18.54
1.4	26915	3	#Max	16QAM	20.57	18.42
1.4	26915	6	#0	16QAM	19.72	17.57
1.4	27033	1	#0	16QAM	20.55	18.40
1.4	27033	1	#Mid	16QAM	20.33	18.18
1.4	27033	1	#Max	16QAM	20.09	17.94
1.4	27033	3	#0	16QAM	20.59	18.44
1.4	27033	3	#Mid	16QAM	20.59	18.44
1.4	27033	3	#Max	16QAM	20.46	18.31

1.4	27033	6	#0	16QAM	19.45	17.30
3	26805	1	#0	16QAM	20.87	18.72
3	26805	1	#Mid	16QAM	20.75	18.60
3	26805	1	#Max	16QAM	20.66	18.51
3	26805	8	#0	16QAM	19.93	17.78
3	26805	8	#Mid	16QAM	19.94	17.79
3	26805	8	#Max	16QAM	19.90	17.75
3	26805	15	#0	16QAM	19.72	17.57
3	26915	1	#0	16QAM	21.01	18.86
3	26915	1	#Mid	16QAM	21.10	18.95
3	26915	1	#Max	16QAM	21.09	18.94
3	26915	8	#0	16QAM	19.97	17.82
3	26915	8	#Mid	16QAM	19.88	17.73
3	26915	8	#Max	16QAM	19.56	17.41
3	26915	15	#0	16QAM	19.58	17.43
3	27025	1	#0	16QAM	20.80	18.65
3	27025	1	#Mid	16QAM	20.28	18.13
3	27025	1	#Max	16QAM	19.93	17.78
3	27025	8	#0	16QAM	19.88	17.73
3	27025	8	#Mid	16QAM	19.87	17.72
3	27025	8	#Max	16QAM	19.35	17.20
3	27025	15	#0	16QAM	19.61	17.46
5	26815	1	#0	16QAM	20.85	18.70
5	26815	1	#Mid	16QAM	20.73	18.58
5	26815	1	#Max	16QAM	20.76	18.61
5	26815	12	#0	16QAM	19.57	17.42
5	26815	12	#Mid	16QAM	19.59	17.44
5	26815	12	#Max	16QAM	19.49	17.34
5	26815	25	#0	16QAM	19.46	17.31
5	26915	1	#0	16QAM	20.71	18.56
5	26915	1	#Mid	16QAM	20.88	18.73
5	26915	1	#Max	16QAM	20.47	18.32
5	26915	12	#0	16QAM	19.60	17.45
5	26915	12	#Mid	16QAM	19.60	17.45
5	26915	12	#Max	16QAM	19.47	17.32
5	26915	25	#0	16QAM	19.53	17.38
5	27015	1	#0	16QAM	20.90	18.75
5	27015	1	#Mid	16QAM	20.60	18.45
5	27015	1	#Max	16QAM	20.13	17.98
5	27015	12	#0	16QAM	19.53	17.38
5	27015	12	#Mid	16QAM	19.53	17.38
5	27015	12	#Max	16QAM	19.56	17.41
5	27015	25	#0	16QAM	19.64	17.49

10	26840	1	#0	16QAM	20.40	18.25
10	26840	1	#Mid	16QAM	21.10	18.95
10	26840	1	#Max	16QAM	20.92	18.77
10	26840	25	#0	16QAM	19.78	17.63
10	26840	25	#Mid	16QAM	19.78	17.63
10	26840	25	#Max	16QAM	20.01	17.86
10	26915	1	#0	16QAM	21.32	19.17
10	26915	1	#Mid	16QAM	21.89	19.74
10	26915	1	#Max	16QAM	21.21	19.06
10	26915	25	#0	16QAM	19.86	17.71
10	26915	25	#Mid	16QAM	19.87	17.72
10	26915	25	#Max	16QAM	19.55	17.40
10	26990	1	#0	16QAM	20.21	18.06
10	26990	1	#Mid	16QAM	20.61	18.46
10	26990	1	#Max	16QAM	19.97	17.82
10	26990	25	#0	16QAM	19.54	17.39
10	26990	25	#Mid	16QAM	19.55	17.40
10	26990	25	#Max	16QAM	19.84	17.69
15	26865	1	#0	16QAM	20.82	18.67
15	26865	1	#Mid	16QAM	21.50	19.35
15	26865	1	#Max	16QAM	20.92	18.77
15	26915	1	#0	16QAM	21.14	18.99
15	26915	1	#Mid	16QAM	21.81	19.66
15	26915	1	#Max	16QAM	21.07	18.92
15	26965	1	#0	16QAM	20.54	18.39
15	26965	1	#Mid	16QAM	20.26	18.11
15	26965	1	#Max	16QAM	20.04	17.89

6.2. Radiated Spurious Emission

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.

GSM 850 CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1673.05	-57.93	1.70	8.70	Horizontal	-53.08	-13.00	40.08	285
3	2510.05	-52.70	2.30	12.00	Horizontal	-45.15	-13.00	32.15	15
4	3346.40	-54.94	2.70	12.70	Horizontal	-47.09	-13.00	34.09	153
5	4183.00	-62.55	3.00	12.50	Horizontal	-55.20	-13.00	42.20	63
6	5019.60	-62.84	3.40	12.50	Horizontal	-55.89	-13.00	42.89	90
7	5856.20	-61.00	3.40	12.80	Horizontal	-53.75	-13.00	40.75	28
8	6692.80	-58.63	4.10	11.50	Horizontal	-53.38	-13.00	40.38	135
9	7529.40	-53.24	4.20	12.20	Horizontal	-47.39	-13.00	34.39	47
10	8366.00	-54.13	4.30	12.50	Horizontal	-48.08	-13.00	35.08	28

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.

LTE Band 5 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1673.00	-49.48	1.70	8.70	Horizontal	-44.63	-13.00	31.63	45
3	2509.50	-51.16	2.30	12.00	Horizontal	-43.61	-13.00	30.61	12
4	3346.00	-61.19	2.70	12.70	Horizontal	-53.34	-13.00	40.34	17
5	4182.50	-53.69	3.00	12.50	Horizontal	-46.34	-13.00	33.34	46
6	5019.00	-57.93	3.40	12.50	Horizontal	-50.98	-13.00	37.98	27
7	5855.50	-60.29	3.40	12.80	Horizontal	-53.04	-13.00	40.04	185
8	6692.00	-58.16	4.10	11.50	Horizontal	-52.91	-13.00	39.91	69
9	7528.50	-53.71	4.20	12.20	Horizontal	-47.86	-13.00	34.86	28
10	8365.00	-53.69	4.30	12.50	Horizontal	-47.64	-13.00	34.64	18

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.

LTE Band 5 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1668.60	-52.68	1.70	8.70	Horizontal	-47.83	-13.00	34.83	64
3	2503.30	-50.14	2.30	12.00	Horizontal	-42.59	-13.00	29.59	85
4	3337.50	-62.51	2.70	12.70	Horizontal	-54.66	-13.00	41.66	114
5	4171.88	-55.16	3.00	12.50	Horizontal	-47.81	-13.00	34.81	22
6	5006.25	-58.27	3.40	12.50	Horizontal	-51.32	-13.00	38.32	38
7	5840.63	-60.75	3.40	12.80	Horizontal	-53.50	-13.00	40.50	176
8	6675.00	-57.17	4.10	11.50	Horizontal	-51.92	-13.00	38.92	96
9	7509.38	-53.19	4.20	12.20	Horizontal	-47.34	-13.00	34.34	75
10	8343.75	-54.23	4.30	12.50	Horizontal	-48.18	-13.00	35.18	156

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.

LTE Band 5 10MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1664.40	-51.51	1.70	8.70	Horizontal	-46.66	-13.00	33.66	35
3	2496.60	-50.16	2.30	12.00	Horizontal	-42.61	-13.00	29.61	16
4	3326.00	-62.87	2.70	12.70	Horizontal	-55.02	-13.00	42.02	37
5	4157.50	-53.16	3.00	12.50	Horizontal	-45.81	-13.00	32.81	146
6	4989.00	-58.78	3.40	12.50	Horizontal	-51.83	-13.00	38.83	85
7	5820.50	-61.30	3.40	12.80	Horizontal	-54.05	-13.00	41.05	95
8	6652.00	-57.45	4.10	11.50	Horizontal	-52.20	-13.00	39.20	174
9	7483.50	-53.24	4.20	12.20	Horizontal	-47.39	-13.00	34.39	36
10	8315.00	-53.31	4.30	12.50	Horizontal	-47.26	-13.00	34.26	17

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.

LTE Band 26 1.4MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1673.00	-49.37	1.70	8.70	Horizontal	-44.52	-13.00	31.52	15
3	2509.50	-50.96	2.30	12.00	Horizontal	-43.41	-13.00	30.41	228
4	3346.00	-61.79	2.70	12.70	Horizontal	-53.94	-13.00	40.94	14
5	4182.50	-54.89	3.00	12.50	Horizontal	-47.54	-13.00	34.54	76
6	5019.00	-56.47	3.40	12.50	Horizontal	-49.52	-13.00	36.52	46
7	5855.50	-60.21	3.40	12.80	Horizontal	-52.96	-13.00	39.96	7
8	6692.00	-56.73	4.10	11.50	Horizontal	-51.48	-13.00	38.48	135
9	7528.50	-54.35	4.20	12.20	Horizontal	-48.50	-13.00	35.50	29
10	8365.00	-55.34	4.30	12.50	Horizontal	-49.29	-13.00	36.29	76

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.

LTE Band 26 5MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1668.00	-52.56	1.70	8.70	Horizontal	-47.71	-13.00	34.71	36
3	2502.00	-49.92	2.30	12.00	Horizontal	-42.37	-13.00	29.37	28
4	3336.00	-62.03	2.70	12.70	Horizontal	-54.18	-13.00	41.18	186
5	4170.00	-55.48	3.00	12.50	Horizontal	-48.13	-13.00	35.13	224
6	5004.00	-58.18	3.40	12.50	Horizontal	-51.23	-13.00	38.23	27
7	5838.00	-60.17	3.40	12.80	Horizontal	-52.92	-13.00	39.92	16
8	6672.00	-57.35	4.10	11.50	Horizontal	-52.10	-13.00	39.10	38
9	7506.00	-53.52	4.20	12.20	Horizontal	-47.67	-13.00	34.67	17
10	8340.00	-54.88	4.30	12.50	Horizontal	-48.83	-13.00	35.83	49

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.

LTE Band 26 15MHz CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1658.00	-44.52	1.70	8.70	Horizontal	-39.67	-13.00	26.67	25
3	2489.60	-53.18	2.30	12.00	Horizontal	-45.63	-13.00	32.63	186
4	3316.00	-62.00	2.70	12.70	Horizontal	-54.15	-13.00	41.15	14
5	4145.00	-53.07	3.00	12.50	Horizontal	-45.72	-13.00	32.72	263
6	4974.00	-58.36	3.40	12.50	Horizontal	-51.41	-13.00	38.41	28
7	5803.00	-61.03	3.40	12.80	Horizontal	-53.78	-13.00	40.78	76
8	6632.00	-58.00	4.10	11.50	Horizontal	-52.75	-13.00	39.75	49
9	7461.00	-53.86	4.20	12.20	Horizontal	-48.01	-13.00	35.01	186
10	8290.00	-53.98	4.30	12.50	Horizontal	-47.93	-13.00	34.93	38

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.

7. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Wireless Communication Tester	Anritsu	MT8821C	6201538758	2024-05-08	2025-05-07
Wireless Communication Tester	R&S	CMW500	150415	2024-05-07	2025-05-06
Radiated Spurious Emission					
Spectrum Analyzer	R&S	FSV30	104028	2024-05-07	2025-05-06
High-pass filter	Chengyi	HPF 1000MHz	2024021	2024-02-21	2025-02-21
High-pass filter	R&S	HPF 1500MHz	HPF 002	2024-02-21	2025-02-21
High-pass filter	R&S	HPF 3000MHz	HPF 003	2024-02-21	2025-02-21
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2022-09-29	2025-09-28
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
Horn Antenna	SCHWARZBECK	BBHA 9120D	1594	2023-12-05	2026-12-04
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance is submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos is submitted separately.

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