RF TEST REPORT

Applicant	Asiatelco Technologies Co.
FCC ID	XYO-BTG35L
Product	GPS TRACKER
Brand	BTG IoT
Model	BTG35L
Report No.	R2404A0349-R3
Issue Date	April 17, 2024

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 (2023)/ FCC CFR47 Part 27C (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Zhu Chentao

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Approved by: Xu Kai

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Summary of Measurement Results

Number	Test Case	Clause in FCC rules	Verdict
1	RF Power Output and Effective Isotropic Radiated Power	2.1046 /27.50(d)(4) /27.50(h)(2)	PASS
2	Radiated Spurious Emission	2.1053 /27.53(h) /27.53(m)	PASS
Date of Testing: April 9, 2024 ~ April 11, 2024 Date of Sample Received: March 11, 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 Radiated Spurious Emission is tested for BTG35L in this report, and because of the change of antenna gain, Effective Isotropic Radiated Power also re evaluated.
Other test items refer to the Module report (Report No.: R2401A0042-R3, FCC ID: XYO-AMA01R).

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.
Address:	Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China
City:	Shanghai
Post code:	201201
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Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	https://www.eurofins.com/electrical-and-electronics
E-mail:	Kain.Xu@cpt.eurofinscn.com

2 General Description of Equipment under Test

2.1 Applicant and Manufacturer Information

Applicant	Asiatelco Technologies Co.
Applicant address	289 Bisheng Road, Building 8, 3F, Zhang jiang Hi-Tech Park, Pudong, Shanghai 201204, China
Manufacturer	Asiatelco Technologies Co.
Manufacturer address	289 Bisheng Road, Building 8, 3F, Zhang jiang Hi-Tech Park, Pudong, Shanghai 201204, China

2.2 General information

EUT Description			
Model	BTG35L		
IMEI	862620060015379		
Hardware Version	p2		
Software Version	v5.6.9.23		
Power Supply	External power supply		
Antenna Type	Internal Antenna		
Antenna Gain	LTE Band 4	4.66 dBi	
	LTE Band 7	6.27 dBi	
Test Mode(s)	LTE Band 4/7		
Test Modulation	(LTE) QPSK, 16QAM		
LTE Category	1		
Maximum E.I.R.P	LTE Band 4	27.15 dBm	
	LTE Band 7	27.85 dBm	
Rated Power Supply Voltage	12V		
Operating Voltage	Minimum: 8V Maximum: 32V		
Operating Temperature	Lowest: -30°C Highest: +75°C		
Testing Temperature	Lowest: -30°C Highest: +50°C		
Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)
	LTE Band 4	1710 ~ 1755	2110 ~ 2155
	LTE Band 7	2500 ~ 2570	2620 ~ 2690
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 CFR47 Part 27C (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 (X axis, horizontal polarization) 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 LTE is set based on the maximum RF Output Power.
The following testing in different Bandwidth is set to detailin the following table:
Test modes are chosen to be reported as the worst case configuration below for LTE Band 4/7

Test items	Modes	Bandwidth (MHz)						Modulation		RB			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	1	50%	100%	L	M	H
RF Power Output and Effective Isotropic Radiated Power	LTE 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE 7	-	-	O	O	O	O	O	O	O	O	O	O	O	O
Radiated Spurious Emission	LTE 4	O	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE 7	-	-	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 Isotropic Radiated Power

Ambient condition

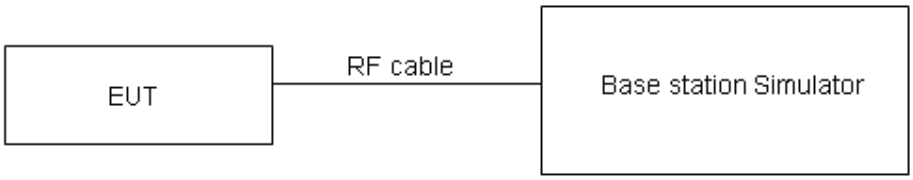
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

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:
EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi)
EIRP (dBm) = ERP (dBm) + 2.15 (dB.)

Test Setup



Limits

No specific RF power output requirements in part 2.1046.

Rule Part 27.50(d) (4) specifies that “Fixed, mobile and portable (hand-held) stations operating in the 1710–1755 MHz band are limited to 1 watt EIRP”
Rule Part 27.50(h) (2) specifies that “Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.”

Part 27.50(d)(4) Limit	≤ 1 W (30 dBm)
Part 27.50(h)(2) Limit	≤ 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 ERP/EIRP.

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

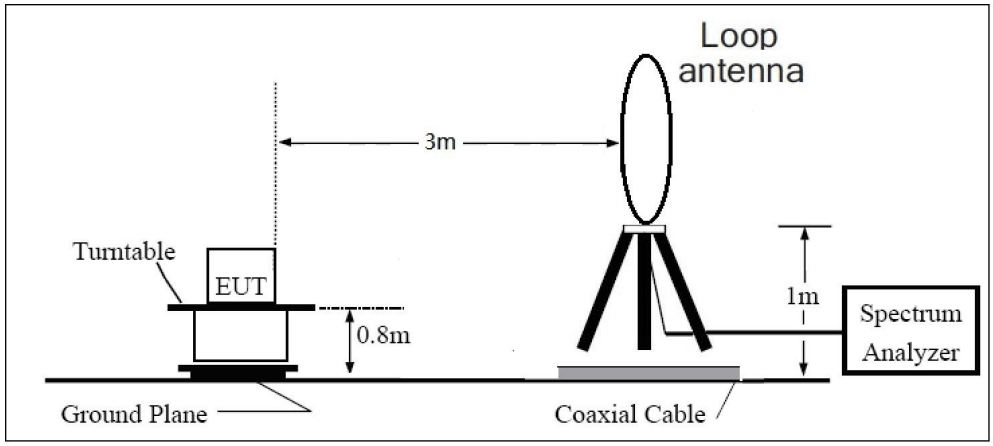
Method of Measurement

1. The testing follows FCC KDB 971168 D01 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=100kHz, VBW=300kHz for 30MHz to 1GHz and RBW=1MHz, VBW=3MHz for above 1GHz, 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 (Pcl) ,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.

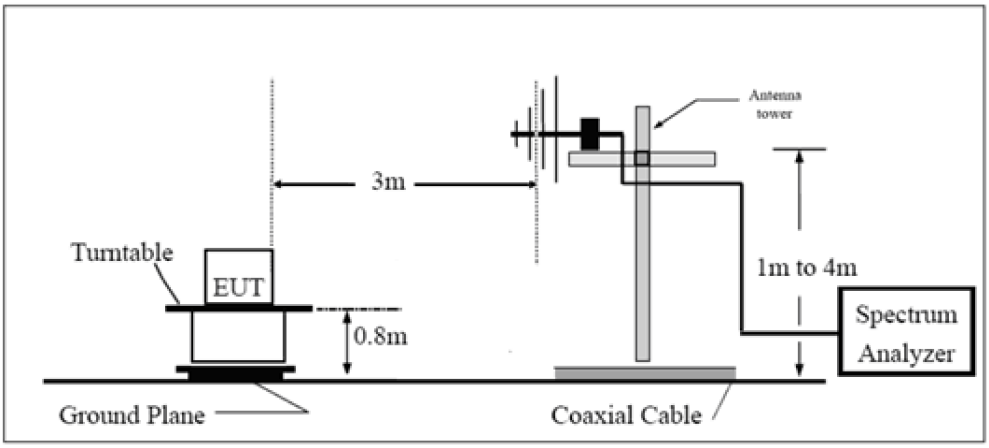
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

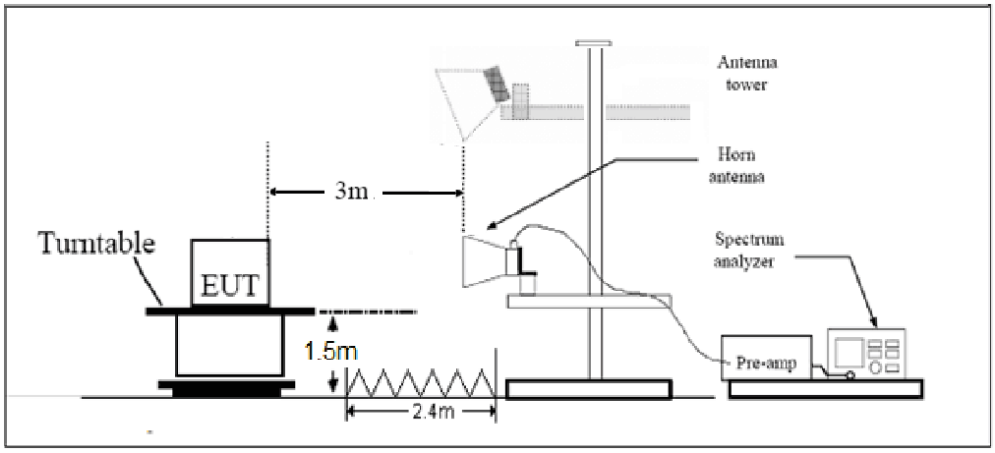
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

Rule Part 27.53(h) specifies that “for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, 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.”
Rule Part 27.53(m) 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)(4) of this section.

Part 27.53 (h) Limit	-13 dBm
Part 27.53(m) Limit	-25 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 Results

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

6 Test Results

6.1 RF Power Output and Effective Isotropic Radiated Power

LTE Band4						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
1.4	19957	1	#0	QPSK	22.31	26.97
1.4	19957	1	#Mid	QPSK	22.18	26.84
1.4	19957	1	#Max	QPSK	22.28	26.94
1.4	19957	3	#0	QPSK	22.03	26.69
1.4	19957	3	#Mid	QPSK	22.03	26.69
1.4	19957	3	#Max	QPSK	22.05	26.71
1.4	19957	6	#0	QPSK	21.14	25.80
1.4	19957	1	#0	16QAM	21.20	25.86
1.4	19957	1	#Mid	16QAM	21.15	25.81
1.4	19957	1	#Max	16QAM	21.32	25.98
1.4	19957	3	#0	16QAM	21.30	25.96
1.4	19957	3	#Mid	16QAM	21.30	25.96
1.4	19957	3	#Max	16QAM	21.33	25.99
1.4	19957	6	#0	16QAM	20.25	24.91
1.4	20175	1	#0	QPSK	22.46	27.12
1.4	20175	1	#Mid	QPSK	22.36	27.02
1.4	20175	1	#Max	QPSK	22.49	27.15
1.4	20175	3	#0	QPSK	22.39	27.05
1.4	20175	3	#Mid	QPSK	22.39	27.05
1.4	20175	3	#Max	QPSK	22.36	27.02
1.4	20175	6	#0	QPSK	21.43	26.09
1.4	20175	1	#0	16QAM	21.73	26.39
1.4	20175	1	#Mid	16QAM	21.57	26.23
1.4	20175	1	#Max	16QAM	21.76	26.42
1.4	20175	3	#0	16QAM	21.44	26.10
1.4	20175	3	#Mid	16QAM	21.49	26.15
1.4	20175	3	#Max	16QAM	21.43	26.09
1.4	20175	6	#0	16QAM	20.50	25.16
1.4	20393	1	#0	QPSK	22.24	26.90
1.4	20393	1	#Mid	QPSK	22.18	26.84
1.4	20393	1	#Max	QPSK	22.31	26.97
1.4	20393	3	#0	QPSK	22.12	26.78
1.4	20393	3	#Mid	QPSK	22.11	26.77
1.4	20393	3	#Max	QPSK	22.11	26.77

1.4	20393	6	#0	QPSK	21.14	25.80
1.4	20393	1	#0	16QAM	21.11	25.77
1.4	20393	1	#Mid	16QAM	21.06	25.72
1.4	20393	1	#Max	16QAM	21.18	25.84
1.4	20393	3	#0	16QAM	21.08	25.74
1.4	20393	3	#Mid	16QAM	21.08	25.74
1.4	20393	3	#Max	16QAM	21.13	25.79
1.4	20393	6	#0	16QAM	20.19	24.85
3	19965	1	#0	QPSK	22.02	26.68
3	19965	1	#Mid	QPSK	22.02	26.68
3	19965	1	#Max	QPSK	22.02	26.68
3	19965	8	#0	QPSK	21.13	25.79
3	19965	8	#Mid	QPSK	21.13	25.79
3	19965	8	#Max	QPSK	21.15	25.81
3	19965	15	#0	QPSK	21.17	25.83
3	19965	1	#0	16QAM	21.34	26.00
3	19965	1	#Mid	16QAM	21.40	26.06
3	19965	1	#Max	16QAM	21.37	26.03
3	19965	8	#0	16QAM	20.19	24.85
3	19965	8	#Mid	16QAM	20.20	24.86
3	19965	8	#Max	16QAM	20.22	24.88
3	19965	15	#0	16QAM	20.18	24.84
3	20175	1	#0	QPSK	22.41	27.07
3	20175	1	#Mid	QPSK	22.40	27.06
3	20175	1	#Max	QPSK	22.32	26.98
3	20175	8	#0	QPSK	21.41	26.07
3	20175	8	#Mid	QPSK	21.42	26.08
3	20175	8	#Max	QPSK	21.38	26.04
3	20175	15	#0	QPSK	21.40	26.06
3	20175	1	#0	16QAM	21.58	26.24
3	20175	1	#Mid	16QAM	21.58	26.24
3	20175	1	#Max	16QAM	21.50	26.16
3	20175	8	#0	16QAM	20.53	25.19
3	20175	8	#Mid	16QAM	20.54	25.20
3	20175	8	#Max	16QAM	20.50	25.16
3	20175	15	#0	16QAM	20.45	25.11
3	20385	1	#0	QPSK	22.00	26.66
3	20385	1	#Mid	QPSK	22.06	26.72
3	20385	1	#Max	QPSK	22.11	26.77
3	20385	8	#0	QPSK	20.97	25.63
3	20385	8	#Mid	QPSK	20.97	25.63
3	20385	8	#Max	QPSK	21.08	25.74
3	20385	15	#0	QPSK	21.09	25.75

3	20385	1	#0	16QAM	20.79	25.45
3	20385	1	#Mid	16QAM	20.98	25.64
3	20385	1	#Max	16QAM	21.01	25.67
3	20385	8	#0	16QAM	20.02	24.68
3	20385	8	#Mid	16QAM	20.03	24.69
3	20385	8	#Max	16QAM	20.14	24.80
3	20385	15	#0	16QAM	20.17	24.83
5	19975	1	#0	QPSK	22.00	26.66
5	19975	1	#Mid	QPSK	22.15	26.81
5	19975	1	#Max	QPSK	22.10	26.76
5	19975	12	#0	QPSK	21.03	25.69
5	19975	12	#Mid	QPSK	21.03	25.69
5	19975	12	#Max	QPSK	21.19	25.85
5	19975	25	#0	QPSK	21.22	25.88
5	19975	1	#0	16QAM	21.30	25.96
5	19975	1	#Mid	16QAM	21.51	26.17
5	19975	1	#Max	16QAM	21.48	26.14
5	19975	12	#0	16QAM	20.08	24.74
5	19975	12	#Mid	16QAM	20.05	24.71
5	19975	12	#Max	16QAM	20.21	24.87
5	19975	25	#0	16QAM	20.24	24.90
5	20175	1	#0	QPSK	22.33	26.99
5	20175	1	#Mid	QPSK	22.39	27.05
5	20175	1	#Max	QPSK	22.26	26.92
5	20175	12	#0	QPSK	21.41	26.07
5	20175	12	#Mid	QPSK	21.42	26.08
5	20175	12	#Max	QPSK	21.38	26.04
5	20175	25	#0	QPSK	21.37	26.03
5	20175	1	#0	16QAM	21.54	26.20
5	20175	1	#Mid	16QAM	21.63	26.29
5	20175	1	#Max	16QAM	21.51	26.17
5	20175	12	#0	16QAM	20.48	25.14
5	20175	12	#Mid	16QAM	20.50	25.16
5	20175	12	#Max	16QAM	20.46	25.12
5	20175	25	#0	16QAM	20.50	25.16
5	20375	1	#0	QPSK	21.85	26.51
5	20375	1	#Mid	QPSK	21.93	26.59
5	20375	1	#Max	QPSK	21.96	26.62
5	20375	12	#0	QPSK	20.88	25.54
5	20375	12	#Mid	QPSK	20.88	25.54
5	20375	12	#Max	QPSK	20.99	25.65
5	20375	25	#0	QPSK	20.97	25.63
5	20375	1	#0	16QAM	21.02	25.68

5	20375	1	#Mid	16QAM	21.20	25.86
5	20375	1	#Max	16QAM	21.26	25.92
5	20375	12	#0	16QAM	19.96	24.62
5	20375	12	#Mid	16QAM	19.98	24.64
5	20375	12	#Max	16QAM	20.10	24.76
5	20375	25	#0	16QAM	20.02	24.68
10	20000	1	#0	QPSK	21.68	26.34
10	20000	1	#Mid	QPSK	21.99	26.65
10	20000	1	#Max	QPSK	21.86	26.52
10	20000	25	#0	QPSK	20.84	25.50
10	20000	25	#Mid	QPSK	20.84	25.50
10	20000	25	#Max	QPSK	20.90	25.56
10	20000	50	#0	QPSK	20.88	25.54
10	20000	1	#0	16QAM	20.97	25.63
10	20000	1	#Mid	16QAM	21.38	26.04
10	20000	1	#Max	16QAM	21.27	25.93
10	20000	25	#0	16QAM	19.97	24.63
10	20000	25	#Mid	16QAM	19.93	24.59
10	20000	25	#Max	16QAM	20.05	24.71
10	20000	50	#0	16QAM	19.93	24.59
10	20175	1	#0	QPSK	22.06	26.72
10	20175	1	#Mid	QPSK	22.20	26.86
10	20175	1	#Max	QPSK	21.89	26.55
10	20175	25	#0	QPSK	21.08	25.74
10	20175	25	#Mid	QPSK	21.09	25.75
10	20175	25	#Max	QPSK	21.03	25.69
10	20175	50	#0	QPSK	21.08	25.74
10	20175	1	#0	16QAM	21.25	25.91
10	20175	1	#Mid	16QAM	21.43	26.09
10	20175	1	#Max	16QAM	21.10	25.76
10	20175	25	#0	16QAM	20.23	24.89
10	20175	25	#Mid	16QAM	20.24	24.90
10	20175	25	#Max	16QAM	20.17	24.83
10	20175	50	#0	16QAM	20.19	24.85
10	20350	1	#0	QPSK	21.61	26.27
10	20350	1	#Mid	QPSK	21.81	26.47
10	20350	1	#Max	QPSK	21.77	26.43
10	20350	25	#0	QPSK	20.54	25.20
10	20350	25	#Mid	QPSK	20.55	25.21
10	20350	25	#Max	QPSK	20.64	25.30
10	20350	50	#0	QPSK	20.64	25.30
10	20350	1	#0	16QAM	20.42	25.08
10	20350	1	#Mid	16QAM	20.71	25.37

10	20350	1	#Max	16QAM	20.64	25.30
10	20350	25	#0	16QAM	19.56	24.22
10	20350	25	#Mid	16QAM	19.58	24.24
10	20350	25	#Max	16QAM	19.70	24.36
10	20350	50	#0	16QAM	19.70	24.36
15	20025	1	#0	QPSK	21.87	26.53
15	20025	1	#Mid	QPSK	22.17	26.83
15	20025	1	#Max	QPSK	22.16	26.82
15	20025	36	#0	QPSK	21.01	25.67
15	20025	36	#Mid	QPSK	21.00	25.66
15	20025	36	#Max	QPSK	21.19	25.85
15	20025	75	#0	QPSK	21.14	25.80
15	20025	1	#0	16QAM	21.15	25.81
15	20025	1	#Mid	16QAM	21.54	26.20
15	20025	1	#Max	16QAM	21.53	26.19
15	20025	36	#0	16QAM	20.14	24.80
15	20025	36	#Mid	16QAM	20.14	24.80
15	20025	36	#Max	16QAM	20.37	25.03
15	20025	75	#0	16QAM	20.27	24.93
15	20175	1	#0	QPSK	22.20	26.86
15	20175	1	#Mid	QPSK	22.30	26.96
15	20175	1	#Max	QPSK	21.89	26.55
15	20175	36	#0	QPSK	21.25	25.91
15	20175	36	#Mid	QPSK	21.21	25.87
15	20175	36	#Max	QPSK	21.12	25.78
15	20175	75	#0	QPSK	21.16	25.82
15	20175	1	#0	16QAM	21.37	26.03
15	20175	1	#Mid	16QAM	21.48	26.14
15	20175	1	#Max	16QAM	21.12	25.78
15	20175	36	#0	16QAM	20.32	24.98
15	20175	36	#Mid	16QAM	20.34	25.00
15	20175	36	#Max	16QAM	20.24	24.90
15	20175	75	#0	16QAM	20.29	24.95
15	20325	1	#0	QPSK	21.88	26.54
15	20325	1	#Mid	QPSK	21.87	26.53
15	20325	1	#Max	QPSK	21.89	26.55
15	20325	36	#0	QPSK	20.78	25.44
15	20325	36	#Mid	QPSK	20.80	25.46
15	20325	36	#Max	QPSK	20.86	25.52
15	20325	75	#0	QPSK	20.86	25.52
15	20325	1	#0	16QAM	20.86	25.52
15	20325	1	#Mid	16QAM	20.90	25.56
15	20325	1	#Max	16QAM	20.99	25.65

15	20325	36	#0	16QAM	19.83	24.49
15	20325	36	#Mid	16QAM	19.86	24.52
15	20325	36	#Max	16QAM	19.90	24.56
15	20325	75	#0	16QAM	19.93	24.59
20	20050	1	#0	QPSK	21.79	26.45
20	20050	1	#Mid	QPSK	22.14	26.80
20	20050	1	#Max	QPSK	22.05	26.71
20	20050	50	#0	QPSK	20.97	25.63
20	20050	50	#Mid	QPSK	20.96	25.62
20	20050	50	#Max	QPSK	21.10	25.76
20	20050	100	#0	QPSK	21.10	25.76
20	20050	1	#0	16QAM	21.01	25.67
20	20050	1	#Mid	16QAM	21.46	26.12
20	20050	1	#Max	16QAM	21.32	25.98
20	20050	50	#0	16QAM	20.06	24.72
20	20050	50	#Mid	16QAM	20.06	24.72
20	20050	50	#Max	16QAM	20.33	24.99
20	20050	100	#0	16QAM	20.32	24.98
20	20175	1	#0	QPSK	22.29	26.95
20	20175	1	#Mid	QPSK	22.35	27.01
20	20175	1	#Max	QPSK	21.82	26.48
20	20175	50	#0	QPSK	21.14	25.80
20	20175	50	#Mid	QPSK	21.15	25.81
20	20175	50	#Max	QPSK	21.02	25.68
20	20175	100	#0	QPSK	21.05	25.71
20	20175	1	#0	16QAM	21.12	25.78
20	20175	1	#Mid	16QAM	21.23	25.89
20	20175	1	#Max	16QAM	20.72	25.38
20	20175	50	#0	16QAM	20.23	24.89
20	20175	50	#Mid	16QAM	20.24	24.90
20	20175	50	#Max	16QAM	20.06	24.72
20	20175	100	#0	16QAM	20.19	24.85
20	20300	1	#0	QPSK	22.06	26.72
20	20300	1	#Mid	QPSK	21.87	26.53
20	20300	1	#Max	QPSK	21.82	26.48
20	20300	50	#0	QPSK	20.72	25.38
20	20300	50	#Mid	QPSK	20.75	25.41
20	20300	50	#Max	QPSK	20.78	25.44
20	20300	100	#0	QPSK	20.77	25.43
20	20300	1	#0	16QAM	20.80	25.46
20	20300	1	#Mid	16QAM	20.71	25.37
20	20300	1	#Max	16QAM	20.62	25.28
20	20300	50	#0	16QAM	19.87	24.53

20	20300	50	#Mid	16QAM	19.90	24.56
20	20300	50	#Max	16QAM	19.89	24.55
20	20300	100	#0	16QAM	19.91	24.57

LTE Band7						
Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	EIRP (dBm)
5	20775	1	#0	QPSK	21.33	27.60
5	20775	1	#Mid	QPSK	21.58	27.85
5	20775	1	#Max	QPSK	21.52	27.79
5	20775	12	#0	QPSK	20.60	26.87
5	20775	12	#Mid	QPSK	20.60	26.87
5	20775	12	#Max	QPSK	20.67	26.94
5	20775	25	#0	QPSK	20.60	26.87
5	20775	1	#0	16QAM	20.59	26.86
5	20775	1	#Mid	16QAM	20.78	27.05
5	20775	1	#Max	16QAM	20.74	27.01
5	20775	12	#0	16QAM	19.50	25.77
5	20775	12	#Mid	16QAM	19.52	25.79
5	20775	12	#Max	16QAM	19.58	25.85
5	20775	25	#0	16QAM	19.58	25.85
5	21100	1	#0	QPSK	21.18	27.45
5	21100	1	#Mid	QPSK	21.15	27.42
5	21100	1	#Max	QPSK	21.01	27.28
5	21100	12	#0	QPSK	20.29	26.56
5	21100	12	#Mid	QPSK	20.29	26.56
5	21100	12	#Max	QPSK	20.15	26.42
5	21100	25	#0	QPSK	20.24	26.51
5	21100	1	#0	16QAM	20.46	26.73
5	21100	1	#Mid	16QAM	20.55	26.82
5	21100	1	#Max	16QAM	20.34	26.61
5	21100	12	#0	16QAM	19.33	25.60
5	21100	12	#Mid	16QAM	19.35	25.62
5	21100	12	#Max	16QAM	19.22	25.49
5	21100	25	#0	16QAM	19.26	25.53
5	21425	1	#0	QPSK	21.58	27.85
5	21425	1	#Mid	QPSK	21.58	27.85
5	21425	1	#Max	QPSK	21.26	27.53
5	21425	12	#0	QPSK	20.62	26.89
5	21425	12	#Mid	QPSK	20.62	26.89
5	21425	12	#Max	QPSK	20.41	26.68
5	21425	25	#0	QPSK	20.51	26.78
5	21425	1	#0	16QAM	20.89	27.16
5	21425	1	#Mid	16QAM	20.87	27.14
5	21425	1	#Max	16QAM	20.48	26.75
5	21425	12	#0	16QAM	19.63	25.90

5	21425	12	#Mid	16QAM	19.68	25.95
5	21425	12	#Max	16QAM	19.48	25.75
5	21425	25	#0	16QAM	19.69	25.96
10	20800	1	#0	QPSK	21.12	27.39
10	20800	1	#Mid	QPSK	21.49	27.76
10	20800	1	#Max	QPSK	21.41	27.68
10	20800	25	#0	QPSK	20.25	26.52
10	20800	25	#Mid	QPSK	20.26	26.53
10	20800	25	#Max	QPSK	20.43	26.70
10	20800	50	#0	QPSK	20.38	26.65
10	20800	1	#0	16QAM	20.02	26.29
10	20800	1	#Mid	16QAM	20.36	26.63
10	20800	1	#Max	16QAM	20.26	26.53
10	20800	25	#0	16QAM	19.33	25.60
10	20800	25	#Mid	16QAM	19.34	25.61
10	20800	25	#Max	16QAM	19.47	25.74
10	20800	50	#0	16QAM	19.43	25.70
10	21100	1	#0	QPSK	20.95	27.22
10	21100	1	#Mid	QPSK	21.04	27.31
10	21100	1	#Max	QPSK	20.68	26.95
10	21100	25	#0	QPSK	20.10	26.37
10	21100	25	#Mid	QPSK	20.11	26.38
10	21100	25	#Max	QPSK	19.91	26.18
10	21100	50	#0	QPSK	19.99	26.26
10	21100	1	#0	16QAM	20.27	26.54
10	21100	1	#Mid	16QAM	20.45	26.72
10	21100	1	#Max	16QAM	20.09	26.36
10	21100	25	#0	16QAM	19.17	25.44
10	21100	25	#Mid	16QAM	19.18	25.45
10	21100	25	#Max	16QAM	18.96	25.23
10	21100	50	#0	16QAM	19.00	25.27
10	21400	1	#0	QPSK	21.33	27.60
10	21400	1	#Mid	QPSK	21.53	27.80
10	21400	1	#Max	QPSK	21.02	27.29
10	21400	25	#0	QPSK	20.33	26.60
10	21400	25	#Mid	QPSK	20.31	26.58
10	21400	25	#Max	QPSK	20.27	26.54
10	21400	50	#0	QPSK	20.35	26.62
10	21400	1	#0	16QAM	20.40	26.67
10	21400	1	#Mid	16QAM	20.68	26.95
10	21400	1	#Max	16QAM	20.21	26.48
10	21400	25	#0	16QAM	19.44	25.71
10	21400	25	#Mid	16QAM	19.43	25.70

10	21400	25	#Max	16QAM	19.41	25.68
10	21400	50	#0	16QAM	19.36	25.63
15	20825	1	#0	QPSK	21.08	27.35
15	20825	1	#Mid	QPSK	21.47	27.74
15	20825	1	#Max	QPSK	21.42	27.69
15	20825	36	#0	QPSK	20.44	26.71
15	20825	36	#Mid	QPSK	20.45	26.72
15	20825	36	#Max	QPSK	20.57	26.84
15	20825	75	#0	QPSK	20.47	26.74
15	20825	1	#0	16QAM	20.42	26.69
15	20825	1	#Mid	16QAM	20.82	27.09
15	20825	1	#Max	16QAM	20.72	26.99
15	20825	36	#0	16QAM	19.47	25.74
15	20825	36	#Mid	16QAM	19.49	25.76
15	20825	36	#Max	16QAM	19.66	25.93
15	20825	75	#0	16QAM	19.56	25.83
15	21100	1	#0	QPSK	21.08	27.35
15	21100	1	#Mid	QPSK	21.09	27.36
15	21100	1	#Max	QPSK	20.82	27.09
15	21100	36	#0	QPSK	20.23	26.50
15	21100	36	#Mid	QPSK	20.24	26.51
15	21100	36	#Max	QPSK	20.01	26.28
15	21100	75	#0	QPSK	20.05	26.32
15	21100	1	#0	16QAM	20.29	26.56
15	21100	1	#Mid	16QAM	20.36	26.63
15	21100	1	#Max	16QAM	20.12	26.39
15	21100	36	#0	16QAM	19.30	25.57
15	21100	36	#Mid	16QAM	19.31	25.58
15	21100	36	#Max	16QAM	19.05	25.32
15	21100	75	#0	16QAM	19.13	25.40
15	21375	1	#0	QPSK	20.92	27.19
15	21375	1	#Mid	QPSK	21.51	27.78
15	21375	1	#Max	QPSK	21.22	27.49
15	21375	36	#0	QPSK	20.30	26.57
15	21375	36	#Mid	QPSK	20.26	26.53
15	21375	36	#Max	QPSK	20.43	26.70
15	21375	75	#0	QPSK	20.39	26.66
15	21375	1	#0	16QAM	19.89	26.16
15	21375	1	#Mid	16QAM	20.57	26.84
15	21375	1	#Max	16QAM	20.22	26.49
15	21375	36	#0	16QAM	19.36	25.63
15	21375	36	#Mid	16QAM	19.35	25.62
15	21375	36	#Max	16QAM	19.57	25.84

15	21375	75	#0	16QAM	19.51	25.78
20	20850	1	#0	QPSK	21.09	27.36
20	20850	1	#Mid	QPSK	21.49	27.76
20	20850	1	#Max	QPSK	21.27	27.54
20	20850	50	#0	QPSK	20.31	26.58
20	20850	50	#Mid	QPSK	20.31	26.58
20	20850	50	#Max	QPSK	20.45	26.72
20	20850	100	#0	QPSK	20.38	26.65
20	20850	1	#0	16QAM	20.34	26.61
20	20850	1	#Mid	16QAM	20.75	27.02
20	20850	1	#Max	16QAM	20.50	26.77
20	20850	50	#0	16QAM	19.43	25.70
20	20850	50	#Mid	16QAM	19.44	25.71
20	20850	50	#Max	16QAM	19.49	25.76
20	20850	100	#0	16QAM	19.50	25.77
20	21100	1	#0	QPSK	21.17	27.44
20	21100	1	#Mid	QPSK	21.18	27.45
20	21100	1	#Max	QPSK	20.86	27.13
20	21100	50	#0	QPSK	20.14	26.41
20	21100	50	#Mid	QPSK	20.15	26.42
20	21100	50	#Max	QPSK	19.89	26.16
20	21100	100	#0	QPSK	19.94	26.21
20	21100	1	#0	16QAM	20.04	26.31
20	21100	1	#Mid	16QAM	20.10	26.37
20	21100	1	#Max	16QAM	19.76	26.03
20	21100	50	#0	16QAM	19.18	25.45
20	21100	50	#Mid	16QAM	19.20	25.47
20	21100	50	#Max	16QAM	18.94	25.21
20	21100	100	#0	16QAM	19.03	25.30
20	21350	1	#0	QPSK	20.73	27.00
20	21350	1	#Mid	QPSK	21.49	27.76
20	21350	1	#Max	QPSK	21.20	27.47
20	21350	50	#0	QPSK	19.88	26.15
20	21350	50	#Mid	QPSK	19.84	26.11
20	21350	50	#Max	QPSK	20.35	26.62
20	21350	100	#0	QPSK	20.31	26.58
20	21350	1	#0	16QAM	19.47	25.74
20	21350	1	#Mid	16QAM	20.30	26.57
20	21350	1	#Max	16QAM	19.99	26.26
20	21350	50	#0	16QAM	19.04	25.31
20	21350	50	#Mid	16QAM	19.03	25.30
20	21350	50	#Max	16QAM	19.49	25.76
20	21350	100	#0	16QAM	19.44	25.71

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.

LTE Band 4 QPSK 1.4MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3463.60	-58.86	2.70	12.70	Horizontal	-48.86	-13.00	35.86	38
3	5195.40	-56.18	3.20	12.50	Horizontal	-46.88	-13.00	33.88	176
4	6927.20	-54.39	4.20	11.80	Horizontal	-46.79	-13.00	33.79	95
5	8659.00	-61.89	4.40	12.50	Horizontal	-53.79	-13.00	40.79	237
6	10390.80	-58.52	4.70	11.30	Horizontal	-51.92	-13.00	38.92	156
7	12122.60	-63.81	5.20	13.80	Horizontal	-55.21	-13.00	42.21	99
8	13854.40	-56.57	5.70	11.30	Horizontal	-50.97	-13.00	37.97	104
9	15586.20	-67.98	6.10	16.80	Horizontal	-57.28	-13.00	44.28	61
10	17318.00	-62.17	6.10	14.20	Horizontal	-54.07	-13.00	41.07	294
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 4 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3460.00	-60.39	2.70	12.70	Horizontal	-50.39	-13.00	37.39	47
3	5190.00	-59.11	3.20	12.50	Horizontal	-49.81	-13.00	36.81	62
4	6920.00	-53.27	4.20	11.80	Horizontal	-45.67	-13.00	32.67	151
5	8650.00	-62.09	4.40	12.50	Horizontal	-53.99	-13.00	40.99	82
6	10380.00	-59.94	4.70	11.30	Horizontal	-53.34	-13.00	40.34	49
7	12110.00	-63.76	5.20	13.80	Horizontal	-55.16	-13.00	42.16	236
8	13840.00	-56.41	5.70	11.30	Horizontal	-50.81	-13.00	37.81	129
9	15570.00	-67.20	6.10	16.80	Horizontal	-56.50	-13.00	43.50	165
10	17300.00	-61.43	6.10	14.20	Horizontal	-53.33	-13.00	40.33	309
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 4 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	3447.00	-61.16	2.70	12.70	Horizontal	-51.16	-13.00	38.16	13
3	5170.90	-58.02	3.20	12.50	Horizontal	-48.72	-13.00	35.72	74
4	6894.40	-51.05	4.20	11.80	Horizontal	-43.45	-13.00	30.45	124
5	8618.00	-59.05	4.40	12.50	Horizontal	-50.95	-13.00	37.95	296
6	10341.40	-56.48	4.70	11.30	Horizontal	-49.88	-13.00	36.88	315
7	12057.50	-63.65	5.20	13.80	Horizontal	-55.05	-13.00	42.05	136
8	13788.60	-55.92	5.70	11.30	Horizontal	-50.32	-13.00	37.32	62
9	15502.50	-67.16	6.10	16.80	Horizontal	-56.46	-13.00	43.46	91
10	17225.00	-61.83	6.10	14.20	Horizontal	-53.73	-13.00	40.73	45
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 7 QPSK 5MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5050.00	-57.31	3.40	12.50	Horizontal	-48.21	-25.00	23.21	162
3	7575.00	-40.65	4.40	12.20	Horizontal	-32.85	-25.00	7.85	37
4	10100.00	-45.85	4.70	11.30	Horizontal	-39.25	-25.00	14.25	92
5	12625.00	-51.52	5.40	13.20	Horizontal	-43.72	-25.00	18.72	104
6	15150.00	-52.12	6.10	13.10	Horizontal	-45.12	-25.00	20.12	225
7	17675.00	-51.82	6.10	14.20	Horizontal	-43.72	-25.00	18.72	307
8	20280.00	--	--	--	--	--	--	--	--
9	22815.00	--	--	--	--	--	--	--	--
10	25350.00	--	--	--	--	--	--	--	--
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 7 QPSK 20MHz CH-Middle, RB 1

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	EIRP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	5065.00	-58.77	3.40	12.50	Horizontal	-49.67	-25.00	24.67	315
3	7597.50	-41.39	4.40	12.20	Horizontal	-33.59	-25.00	8.59	0
4	10130.00	-50.40	4.70	11.30	Horizontal	-43.80	-25.00	18.80	78
5	12662.50	-51.41	5.40	13.20	Horizontal	-43.61	-25.00	18.61	203
6	15195.00	-50.02	6.10	13.10	Horizontal	-43.02	-25.00	18.02	196
7	17727.50	-52.28	6.10	14.20	Horizontal	-44.18	-25.00	19.18	142
8	20208.80	--	--	--	--	--	--	--	--
9	22734.90	--	--	--	--	--	--	--	--
10	25261.00	--	--	--	--	--	--	--	--

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	R&S	CMW500	150415	2023-05-12	2024-05-11
Radiated Spurious Emission					
Spectrum Analyzer	R&S	FSV30	100815	2023-12-05	2024-12-04
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	391	2022-09-29	2025-09-28
Horn Antenna	SCHWARZBECK	BBHA 9120D	1594	2023-12-05	2026-12-04
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Software	R&S	EMC32	10.35.10	/	/

ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.

ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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