

RF TEST REPORT

Applicant	Asiatelco Technologies Co.
FCC ID	XYO-BTG600L
Product	GPS Asset TRACKER
Brand	BTG IoT
Model	BTG600L
Report No.	R2404A0348-R1
Issue Date	April 18, 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.

Prepared by: Zhu Chentao

Approved by: Xu Kai

Eurofins TA Technology (Shanghai) Co., Ltd.

Building 3, No.145, Jintang Rd, Pudong Shanghai, P.R.China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

TABLE OF CONTENT

1. Test Laboratory	4
1.1. Notes of the Test Report	4
1.2. Test Facility	4
1.3. Testing Location	4
2. General Description of Equipment Under Test	5
2.1. Applicant and Manufacturer Information	5
2.2. General Information	5
3. Applied Standards	7
4. Test Configuration	8
5. Test Case	9
5.1. RF Power Output and Effective Radiated Power	9
5.2. Radiated Spurious Emission	10
6. Test Result	13
6.1. RF Power Output and Effective Radiated Power	13
6.2. Radiated Spurious Emission	18
7. Main Test Instruments	21
ANNEX A: The EUT Appearance	22
ANNEX B: Test Setup Photos	23

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: April 9, 2024 ~ April 12, 2024 Date of Sample Received: March 19, 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 BTG600L in this report, and because of the change of antenna gain, Effective Radiated Power also re evaluated.

Other test items refer to the Module report (Report No.: R2401A0042-R1, 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
Country: P. R. China
Contact: Xu Kai
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	Asiateco Technologies Co.
Applicant address	289 Bisheng Road, Building 8, 3F, Zhang jiang Hi-Tech Park, Pudong, Shanghai 201204, China
Manufacturer	Asiateco 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	BTG600L		
Lab internal SN	R2404A0348/S01		
Hardware Version	p2		
Software Version	v5.6.9.23		
Power Supply	DC 12V		
Antenna Type	Internal Antenna		
Antenna Gain	4.00 dBi		
Test Mode(s)	GSM 850; WCDMA Band V; LTE Band 5		
Test Modulation	(GPRS)GMSK, (EGPRS) GMSK/ 8PSK; (WCDMA) BPSK, QPSK; (LTE) QPSK, 16QAM;		
GPRS Multislot Class	12		
EGPRS Multislot Class	12		
HSDPA UE Category	14		
HSUPA UE Category	6		
LTE Category	1		
Maximum E.R.P.	GSM 850	34.00 dBm	
	WCDMA Band V	23.87 dBm	
	LTE Band 5	24.75 dBm	
Rated Power Supply Voltage	3.7V		
Operating Voltage	Minimum: 3.4V Maximum: 4.2V		
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
	WCDMA Band V	824 ~ 849	869 ~ 894
	LTE Band 5	824 ~ 849	869 ~ 894
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 (Y axis, vertical polarization for GSM 850 and WCDMA Band V; X axis, horizontal polarization for LTE Band 5) 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/WCDMA/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	WCDMA Band V
RF Power Output and Effective Radiated power	GPRS EGPRS	RMC HSDPA/HSUPA
Radiated Spurious Emission	GPRS	RMC

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

Test items	Bandwidth (MHz)				Modulation		RB			Test Channel		
	1.4	3	5	10	QPSK	16QAM	1	50%	100%	L	M	H
RF power output and Effective Radiated power	O	O	O	O	O	O	O	O	O	O	O	O
Radiated Spurious Emission	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

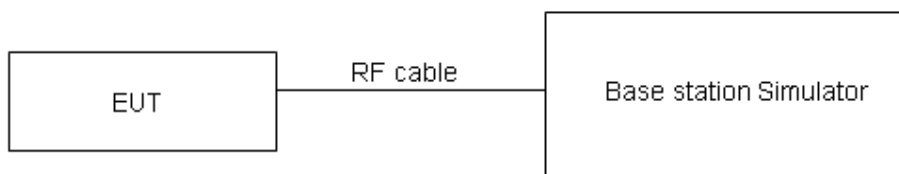
During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:

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

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

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	$\leq 7 \text{ W (38.45 dBm)}$
-------	--------------------------------

Measurement Uncertainty

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

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=100kHz, VBW=300kHz, 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:

$$\text{Power (EIRP)} = \text{PMea} - \text{PAg} - \text{Pcl} + \text{Ga}$$

The measurement results are amend as described below:

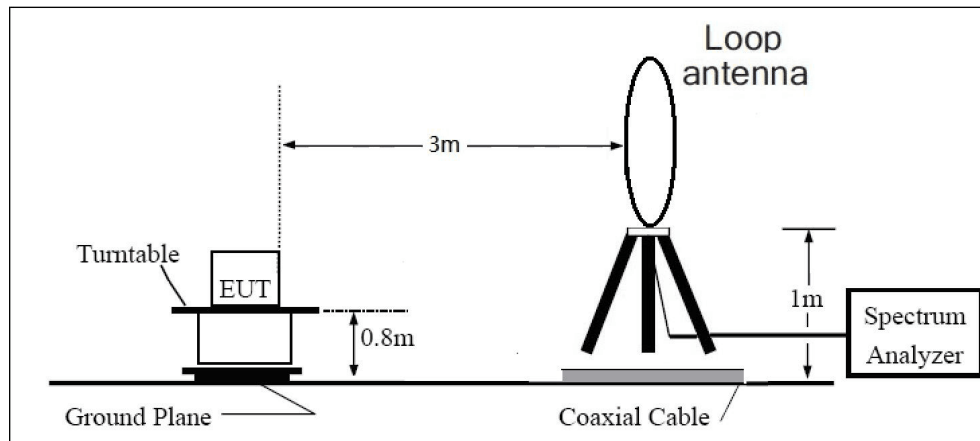
$$\text{Power (EIRP)} = \text{PMea} - \text{Pcl} + \text{Ga}$$
8. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dB) and known input power. ERP can be calculated from EIRP by subtracting the gain of the dipole, $\text{ERP} = \text{EIRP} - 2.15\text{dB}$.

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

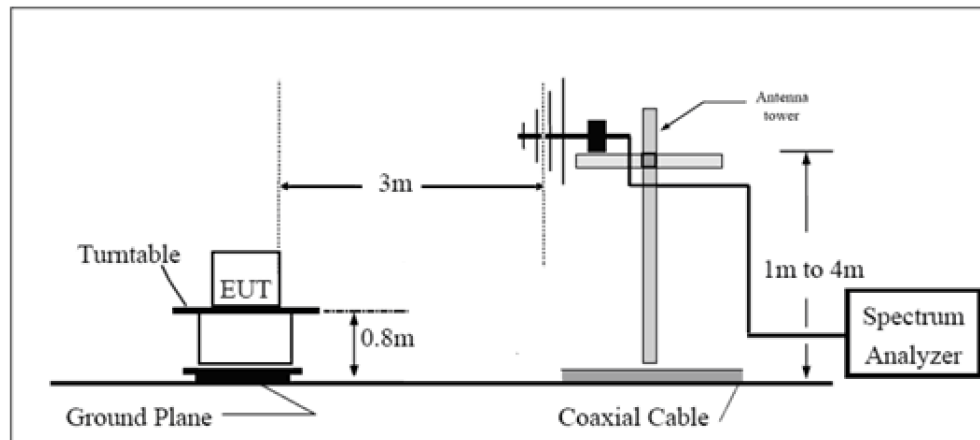
configuration.

Test Setup

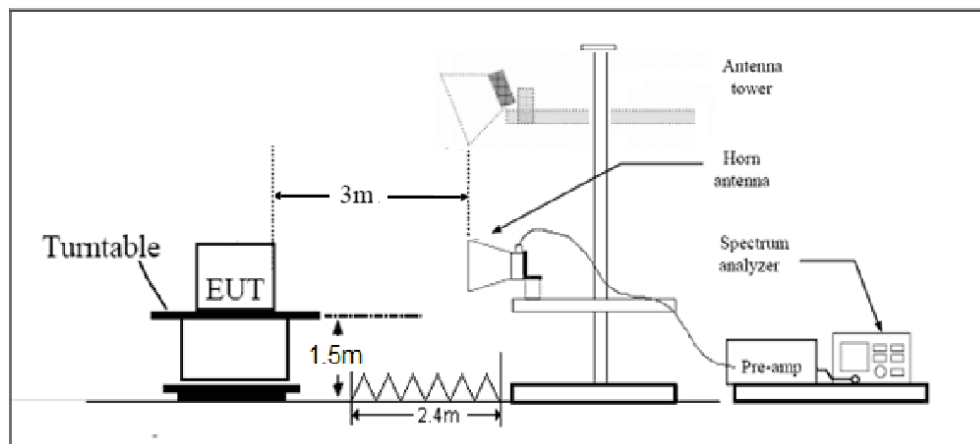
9KHz~ 30MHz



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
-------	---------

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	32.04	32.15	32.04	33.89	34.00	33.89
	2Txslots	32.03	32.15	32.02	33.88	34.00	33.87
	3Txslots	30.68	30.86	30.81	32.53	32.71	32.66
	4Txslots	28.95	29.09	29.06	30.80	30.94	30.91
EGPRS (8PSK)	1Txslot	25.77	25.73	25.74	27.62	27.58	27.59
	2Txslots	24.01	24.12	24.13	25.86	25.97	25.98
	3Txslots	21.97	22.01	21.95	23.82	23.86	23.80
	4Txslots	19.71	19.82	19.78	21.56	21.67	21.63

WCDMA Band V		Maximum Output Power (dBm)			ERP (dBm)		
		Channel 4132	Channel 4183	Channel 4233	Channel 4132	Channel 4183	Channel 4233
		826.4 (MHz)	836.6 (MHz)	846.6 (MHz)	826.4 (MHz)	836.6 (MHz)	846.6 (MHz)
RMC	12.2k	21.16	22.02	21.36	23.01	23.87	23.21
HSDPA	Sub - Test 1	20.58	21.44	20.78	22.43	23.29	22.63
	Sub - Test 2	20.57	21.43	20.77	22.42	23.28	22.62
	Sub - Test 3	20.06	20.92	20.26	21.91	22.77	22.11
	Sub - Test 4	20.05	20.91	20.25	21.90	22.76	22.10
HSUPA	Sub - Test 1	19.54	20.40	19.74	21.39	22.25	21.59
	Sub - Test 2	17.53	18.39	17.73	19.38	20.24	19.58
	Sub - Test 3	18.51	19.38	18.72	20.36	21.23	20.57
	Sub - Test 4	17.50	18.37	17.71	19.35	20.22	19.56
	Sub - Test 5	20.99	21.86	21.20	22.84	23.71	23.05

Band	Bandwidth (MHz)	UL Channel	RB Size	RB Position	Modulation	Power (dBm)	ERP (dBm)
LTE Band5	1.4	20407	1	#0	QPSK	22.14	23.99
LTE Band5	1.4	20407	1	#Mid	QPSK	21.86	23.71
LTE Band5	1.4	20407	1	#Max	QPSK	21.83	23.68
LTE Band5	1.4	20407	3	#0	QPSK	21.81	23.66
LTE Band5	1.4	20407	3	#Mid	QPSK	21.81	23.66
LTE Band5	1.4	20407	3	#Max	QPSK	21.68	23.53
LTE Band5	1.4	20407	6	#0	QPSK	20.78	22.63
LTE Band5	1.4	20407	1	#0	16QAM	21.13	22.98
LTE Band5	1.4	20407	1	#Mid	16QAM	20.95	22.80
LTE Band5	1.4	20407	1	#Max	16QAM	20.89	22.74
LTE Band5	1.4	20407	3	#0	16QAM	21.07	22.92
LTE Band5	1.4	20407	3	#Mid	16QAM	21.08	22.93
LTE Band5	1.4	20407	3	#Max	16QAM	21.01	22.86
LTE Band5	1.4	20407	6	#0	16QAM	19.95	21.80
LTE Band5	1.4	20525	1	#0	QPSK	22.90	24.75
LTE Band5	1.4	20525	1	#Mid	QPSK	22.80	24.65
LTE Band5	1.4	20525	1	#Max	QPSK	22.89	24.74
LTE Band5	1.4	20525	3	#0	QPSK	22.75	24.60
LTE Band5	1.4	20525	3	#Mid	QPSK	22.75	24.60
LTE Band5	1.4	20525	3	#Max	QPSK	22.78	24.63
LTE Band5	1.4	20525	6	#0	QPSK	21.79	23.64
LTE Band5	1.4	20525	1	#0	16QAM	22.14	23.99
LTE Band5	1.4	20525	1	#Mid	16QAM	22.01	23.86
LTE Band5	1.4	20525	1	#Max	16QAM	22.18	24.03
LTE Band5	1.4	20525	3	#0	16QAM	21.90	23.75
LTE Band5	1.4	20525	3	#Mid	16QAM	21.90	23.75
LTE Band5	1.4	20525	3	#Max	16QAM	21.90	23.75
LTE Band5	1.4	20525	6	#0	16QAM	20.77	22.62
LTE Band5	1.4	20643	1	#0	QPSK	22.27	24.12
LTE Band5	1.4	20643	1	#Mid	QPSK	22.33	24.18
LTE Band5	1.4	20643	1	#Max	QPSK	22.67	24.52
LTE Band5	1.4	20643	3	#0	QPSK	22.10	23.95
LTE Band5	1.4	20643	3	#Mid	QPSK	22.06	23.91
LTE Band5	1.4	20643	3	#Max	QPSK	22.33	24.18
LTE Band5	1.4	20643	6	#0	QPSK	21.21	23.06
LTE Band5	1.4	20643	1	#0	16QAM	21.01	22.86
LTE Band5	1.4	20643	1	#Mid	16QAM	21.18	23.03
LTE Band5	1.4	20643	1	#Max	16QAM	21.53	23.38
LTE Band5	1.4	20643	3	#0	16QAM	21.10	22.95
LTE Band5	1.4	20643	3	#Mid	16QAM	21.07	22.92
LTE Band5	1.4	20643	3	#Max	16QAM	21.32	23.17

LTE Band5	1.4	20643	6	#0	16QAM	20.14	21.99
LTE Band5	3	20415	1	#0	QPSK	21.85	23.70
LTE Band5	3	20415	1	#Mid	QPSK	21.50	23.35
LTE Band5	3	20415	1	#Max	QPSK	21.26	23.11
LTE Band5	3	20415	8	#0	QPSK	20.80	22.65
LTE Band5	3	20415	8	#Mid	QPSK	20.82	22.67
LTE Band5	3	20415	8	#Max	QPSK	20.54	22.39
LTE Band5	3	20415	15	#0	QPSK	20.60	22.45
LTE Band5	3	20415	1	#0	16QAM	21.21	23.06
LTE Band5	3	20415	1	#Mid	16QAM	20.91	22.76
LTE Band5	3	20415	1	#Max	16QAM	20.65	22.50
LTE Band5	3	20415	8	#0	16QAM	19.94	21.79
LTE Band5	3	20415	8	#Mid	16QAM	19.98	21.83
LTE Band5	3	20415	8	#Max	16QAM	19.69	21.54
LTE Band5	3	20415	15	#0	16QAM	19.76	21.61
LTE Band5	3	20525	1	#0	QPSK	22.83	24.68
LTE Band5	3	20525	1	#Mid	QPSK	22.81	24.66
LTE Band5	3	20525	1	#Max	QPSK	22.90	24.75
LTE Band5	3	20525	8	#0	QPSK	21.83	23.68
LTE Band5	3	20525	8	#Mid	QPSK	21.83	23.68
LTE Band5	3	20525	8	#Max	QPSK	21.97	23.82
LTE Band5	3	20525	15	#0	QPSK	21.79	23.64
LTE Band5	3	20525	1	#0	16QAM	22.01	23.86
LTE Band5	3	20525	1	#Mid	16QAM	22.03	23.88
LTE Band5	3	20525	1	#Max	16QAM	22.15	24.00
LTE Band5	3	20525	8	#0	16QAM	20.89	22.74
LTE Band5	3	20525	8	#Mid	16QAM	20.89	22.74
LTE Band5	3	20525	8	#Max	16QAM	21.05	22.90
LTE Band5	3	20525	15	#0	16QAM	20.71	22.56
LTE Band5	3	20635	1	#0	QPSK	21.48	23.33
LTE Band5	3	20635	1	#Mid	QPSK	21.94	23.79
LTE Band5	3	20635	1	#Max	QPSK	22.53	24.38
LTE Band5	3	20635	8	#0	QPSK	20.62	22.47
LTE Band5	3	20635	8	#Mid	QPSK	20.58	22.43
LTE Band5	3	20635	8	#Max	QPSK	21.08	22.93
LTE Band5	3	20635	15	#0	QPSK	20.75	22.60
LTE Band5	3	20635	1	#0	16QAM	20.30	22.15
LTE Band5	3	20635	1	#Mid	16QAM	20.77	22.62
LTE Band5	3	20635	1	#Max	16QAM	21.29	23.14
LTE Band5	3	20635	8	#0	16QAM	19.72	21.57
LTE Band5	3	20635	8	#Mid	16QAM	19.71	21.56
LTE Band5	3	20635	8	#Max	16QAM	20.13	21.98
LTE Band5	3	20635	15	#0	16QAM	19.95	21.80
LTE Band5	5	20425	1	#0	QPSK	21.89	23.74

LTE Band5	5	20425	1	#Mid	QPSK	21.36	23.21
LTE Band5	5	20425	1	#Max	QPSK	21.12	22.97
LTE Band5	5	20425	12	#0	QPSK	20.61	22.46
LTE Band5	5	20425	12	#Mid	QPSK	20.63	22.48
LTE Band5	5	20425	12	#Max	QPSK	20.25	22.10
LTE Band5	5	20425	25	#0	QPSK	20.40	22.25
LTE Band5	5	20425	1	#0	16QAM	21.15	23.00
LTE Band5	5	20425	1	#Mid	16QAM	20.78	22.63
LTE Band5	5	20425	1	#Max	16QAM	20.50	22.35
LTE Band5	5	20425	12	#0	16QAM	19.69	21.54
LTE Band5	5	20425	12	#Mid	16QAM	19.73	21.58
LTE Band5	5	20425	12	#Max	16QAM	19.36	21.21
LTE Band5	5	20425	25	#0	16QAM	19.62	21.47
LTE Band5	5	20525	1	#0	QPSK	22.74	24.59
LTE Band5	5	20525	1	#Mid	QPSK	22.83	24.68
LTE Band5	5	20525	1	#Max	QPSK	22.84	24.69
LTE Band5	5	20525	12	#0	QPSK	21.86	23.71
LTE Band5	5	20525	12	#Mid	QPSK	21.85	23.70
LTE Band5	5	20525	12	#Max	QPSK	21.90	23.75
LTE Band5	5	20525	25	#0	QPSK	21.69	23.54
LTE Band5	5	20525	1	#0	16QAM	22.00	23.85
LTE Band5	5	20525	1	#Mid	16QAM	22.07	23.92
LTE Band5	5	20525	1	#Max	16QAM	22.12	23.97
LTE Band5	5	20525	12	#0	16QAM	20.89	22.74
LTE Band5	5	20525	12	#Mid	16QAM	20.88	22.73
LTE Band5	5	20525	12	#Max	16QAM	20.95	22.80
LTE Band5	5	20525	25	#0	16QAM	20.69	22.54
LTE Band5	5	20625	1	#0	QPSK	21.32	23.17
LTE Band5	5	20625	1	#Mid	QPSK	21.50	23.35
LTE Band5	5	20625	1	#Max	QPSK	22.29	24.14
LTE Band5	5	20625	12	#0	QPSK	20.31	22.16
LTE Band5	5	20625	12	#Mid	QPSK	20.31	22.16
LTE Band5	5	20625	12	#Max	QPSK	20.78	22.63
LTE Band5	5	20625	25	#0	QPSK	20.50	22.35
LTE Band5	5	20625	1	#0	16QAM	20.55	22.40
LTE Band5	5	20625	1	#Mid	16QAM	20.78	22.63
LTE Band5	5	20625	1	#Max	16QAM	21.57	23.42
LTE Band5	5	20625	12	#0	16QAM	19.48	21.33
LTE Band5	5	20625	12	#Mid	16QAM	19.50	21.35
LTE Band5	5	20625	12	#Max	16QAM	19.94	21.79
LTE Band5	5	20625	25	#0	16QAM	19.67	21.52
LTE Band5	10	20450	1	#0	QPSK	21.43	23.28
LTE Band5	10	20450	1	#Mid	QPSK	21.06	22.91
LTE Band5	10	20450	1	#Max	QPSK	22.07	23.92

LTE Band5	10	20450	25	#0	QPSK	20.04	21.89
LTE Band5	10	20450	25	#Mid	QPSK	20.06	21.91
LTE Band5	10	20450	25	#Max	QPSK	20.35	22.20
LTE Band5	10	20450	50	#0	QPSK	20.19	22.04
LTE Band5	10	20450	1	#0	16QAM	20.78	22.63
LTE Band5	10	20450	1	#Mid	16QAM	20.45	22.30
LTE Band5	10	20450	1	#Max	16QAM	21.37	23.22
LTE Band5	10	20450	25	#0	16QAM	19.23	21.08
LTE Band5	10	20450	25	#Mid	16QAM	19.26	21.11
LTE Band5	10	20450	25	#Max	16QAM	19.54	21.39
LTE Band5	10	20450	50	#0	16QAM	19.40	21.25
LTE Band5	10	20525	1	#0	QPSK	21.59	23.44
LTE Band5	10	20525	1	#Mid	QPSK	22.54	24.39
LTE Band5	10	20525	1	#Max	QPSK	21.97	23.82
LTE Band5	10	20525	25	#0	QPSK	21.48	23.33
LTE Band5	10	20525	25	#Mid	QPSK	21.46	23.31
LTE Band5	10	20525	25	#Max	QPSK	21.50	23.35
LTE Band5	10	20525	50	#0	QPSK	21.13	22.98
LTE Band5	10	20525	1	#0	16QAM	20.85	22.70
LTE Band5	10	20525	1	#Mid	16QAM	21.81	23.66
LTE Band5	10	20525	1	#Max	16QAM	21.25	23.10
LTE Band5	10	20525	25	#0	16QAM	20.62	22.47
LTE Band5	10	20525	25	#Mid	16QAM	20.60	22.45
LTE Band5	10	20525	25	#Max	16QAM	20.64	22.49
LTE Band5	10	20525	50	#0	16QAM	20.17	22.02
LTE Band5	10	20600	1	#0	QPSK	22.49	24.34
LTE Band5	10	20600	1	#Mid	QPSK	21.32	23.17
LTE Band5	10	20600	1	#Max	QPSK	21.90	23.75
LTE Band5	10	20600	25	#0	QPSK	20.75	22.60
LTE Band5	10	20600	25	#Mid	QPSK	20.81	22.66
LTE Band5	10	20600	25	#Max	QPSK	20.19	22.04
LTE Band5	10	20600	50	#0	QPSK	20.46	22.31
LTE Band5	10	20600	1	#0	16QAM	21.37	23.22
LTE Band5	10	20600	1	#Mid	16QAM	20.25	22.10
LTE Band5	10	20600	1	#Max	16QAM	20.72	22.57
LTE Band5	10	20600	25	#0	16QAM	19.87	21.72
LTE Band5	10	20600	25	#Mid	16QAM	19.94	21.79
LTE Band5	10	20600	25	#Max	16QAM	19.30	21.15
LTE Band5	10	20600	50	#0	16QAM	19.71	21.56

6.2.

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	1673.20	-41.17	1.70	8.70	Vertical	-36.32	-13.00	23.32	95
3	2509.80	-60.69	2.30	12.00	Vertical	-53.14	-13.00	40.14	180
4	3346.40	-65.39	2.70	12.70	Vertical	-57.54	-13.00	44.54	49
5	4183.00	-65.57	3.00	12.50	Vertical	-58.22	-13.00	45.22	106
6	5019.60	-57.25	3.40	12.50	Vertical	-50.30	-13.00	37.30	247
7	5856.20	-60.52	3.40	12.80	Vertical	-53.27	-13.00	40.27	315
8	6692.80	-57.59	4.10	11.50	Vertical	-52.34	-13.00	39.34	29
9	7529.40	-54.56	4.20	12.20	Vertical	-48.71	-13.00	35.71	81
10	8366.00	-54.49	4.30	12.50	Vertical	-48.44	-13.00	35.44	137
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 Vertical position.									

WCDMA Band V CH-Middle

Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	ERP Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
2	1671.20	-53.49	1.70	8.70	Vertical	-48.64	-13.00	35.64	139
3	2510.40	-66.56	2.30	12.00	Vertical	-59.01	-13.00	46.01	73
4	3346.40	-67.72	2.70	12.70	Vertical	-59.87	-13.00	46.87	66
5	4183.00	-64.86	3.00	12.50	Vertical	-57.51	-13.00	44.51	142
6	5019.60	-63.39	3.40	12.50	Vertical	-56.44	-13.00	43.44	28
7	5856.20	-61.93	3.40	12.80	Vertical	-54.68	-13.00	41.68	90
8	6692.80	-57.65	4.10	11.50	Vertical	-52.40	-13.00	39.40	86
9	7529.40	-54.36	4.20	12.20	Vertical	-48.51	-13.00	35.51	187
10	8366.00	-54.09	4.30	12.50	Vertical	-48.04	-13.00	35.04	205
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 Vertical 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	-42.32	1.70	8.70	Horizontal	-37.47	-13.00	24.47	54
3	2509.50	-60.99	2.30	12.00	Horizontal	-53.44	-13.00	40.44	315
4	3346.00	-63.03	2.70	12.70	Horizontal	-55.18	-13.00	42.18	54
5	4182.50	-62.35	3.00	12.50	Horizontal	-55.00	-13.00	42.00	124
6	5019.00	-61.97	3.40	12.50	Horizontal	-55.02	-13.00	42.02	67
7	5855.50	-62.54	3.40	12.80	Horizontal	-55.29	-13.00	42.29	247
8	6692.00	-58.32	4.10	11.50	Horizontal	-53.07	-13.00	40.07	257
9	7528.50	-56.06	4.20	12.20	Horizontal	-50.21	-13.00	37.21	157
10	8365.00	-54.05	4.30	12.50	Horizontal	-48.00	-13.00	35.00	134

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	-41.94	1.70	8.70	Horizontal	-37.09	-13.00	24.09	42
3	2503.30	-57.56	2.30	12.00	Horizontal	-50.01	-13.00	37.01	67
4	3337.50	-59.19	2.70	12.70	Horizontal	-51.34	-13.00	38.34	85
5	4171.88	-63.30	3.00	12.50	Horizontal	-55.95	-13.00	42.95	94
6	5006.25	-62.21	3.40	12.50	Horizontal	-55.26	-13.00	42.26	24
7	5840.63	-62.35	3.40	12.80	Horizontal	-55.10	-13.00	42.10	67
8	6675.00	-58.57	4.10	11.50	Horizontal	-53.32	-13.00	40.32	43
9	7509.38	-56.13	4.20	12.20	Horizontal	-50.28	-13.00	37.28	242
10	8343.75	-54.17	4.30	12.50	Horizontal	-48.12	-13.00	35.12	144

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	-43.41	1.70	8.70	Horizontal	-38.56	-13.00	25.56	62
3	2496.60	-58.19	2.30	12.00	Horizontal	-50.64	-13.00	37.64	35
4	3326.00	-60.09	2.70	12.70	Horizontal	-52.24	-13.00	39.24	223
5	4157.50	-63.37	3.00	12.50	Horizontal	-56.02	-13.00	43.02	54
6	4989.00	-62.30	3.40	12.50	Horizontal	-55.35	-13.00	42.35	246
7	5820.50	-62.41	3.40	12.80	Horizontal	-55.16	-13.00	42.16	242
8	6652.00	-58.34	4.10	11.50	Horizontal	-53.09	-13.00	40.09	143
9	7483.50	-55.75	4.20	12.20	Horizontal	-49.90	-13.00	36.90	147
10	8315.00	-54.44	4.30	12.50	Horizontal	-48.39	-13.00	35.39	68
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
Wireless Communication Tester	Agilent	E5515C	MY48367192	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
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 *******