

RF TEST REPORT

Applicant	Asiatelco Technologies Co.
FCC ID	XYO-AD21
Product	GPS Tracker
Brand	ATEL
Model	AD21
Report No.	EFTA25060143-IE-01-R1
Issue Date	July 3, 2025

Eurofins TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 2 / FCC CFR 47 Part 22H / FCC CFR 47 Part 24E / FCC CFR47 Part 27C**. 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

Test Case	Clause in FCC rules	Limits	Verdict
LTE-M Band 5			
RF Power Output and Effective Radiated Power	2.1046 22.913(a)(5)	$\leq 7 \text{ W}$ (38.45 dBm)	PASS
Occupied Bandwidth	Refer to the Module report (Report No.: R2108A0769-R1V1; FCC ID: XMR202007BG95M6, Grant date: 12/02/2021)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 22.917 (a)	$\leq -13 \text{ dBm}$	PASS
LTE-M Band 2			
RF Power Output and Effective Isotropic Radiated Power	2.1046 24.232(c)	$\leq 2 \text{ W}$ (33 dBm)	PASS
Occupied Bandwidth	Refer to the Module report (Report No.: R2108A0769-R2V1; FCC ID: XMR202007BG95M6, Grant date: 12/02/2021)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 24.238(a)	$\leq -13 \text{ dBm}$	PASS
LTE-M Band 4			
RF Power Output and Effective Isotropic Radiated Power	2.1046 27.50(d)(4)	$\leq 1 \text{ W}$ (30 dBm)	PASS
Occupied Bandwidth	Refer to the Module report (Report No.: R2108A0769-R3V1; FCC ID: XMR202007BG95M6, Grant date: 12/02/2021)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 27.53(h)	$\leq -13 \text{ dBm}$	PASS

Test Case	Clause in FCC rules	Limits	Verdict
LTE-M Band 12			
RF Power Output and Effective Radiated Power	2.1046 27.50(c)(10)	≤ 3 W (34.77 dBm)	PASS
Occupied Bandwidth	Refer to the Module report (Report No.: R2108A0769-R3V1; FCC ID: XMR202007BG95M6, Grant date: 12/02/2021)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 27.53(g)	≤ -13 dBm	PASS
LTE-M Band 13			
RF Power Output and Effective Radiated Power	2.1046 27.50(b)(10)	≤ 3 W (34.77 dBm)	PASS
Occupied Bandwidth	Refer to the Module report (Report No.: R2108A0769-R3V1; FCC ID: XMR202007BG95M6, Grant date: 12/02/2021)		
Band Edge Compliance			
Peak-to-Average Power Ratio			
Frequency Stability			
Spurious Emissions at Antenna Terminals			
Radiated Spurious Emission	2.1053 27.53(c) 27.53(f)	Limit out of the band 1559-1610 MHz ≤ -13 dBm	PASS
		Limit in the band 1559-1610 MHz ≤ -40 dBm	
Date of Testing: June 20, 2025 ~ June 24, 2025			
Date of Sample Received: June 11, 2025			
Note:			
1. Because of the change of antenna gain, ERP/EIRP need to be re-evaluated.			
2. 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.			

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	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	AD21			
Lab internal SN	EFTA25060143-IE-02/S01			
Hardware Version	3.0.0			
Software Version	5.6.8.17			
Power Supply	DC power supply			
Antenna Type	PIFA Antenna			
Rated Power Supply Voltage	12VDC			
Operating Voltage	Minimum: 8VDC Maximum: 24VDC			
Operating Temperature	Lowest: 0°C Highest: +35°C			
Testing Temperature	Lowest: -40°C Highest: +65°C			
Operating Frequency Range(s)	Mode	Tx (MHz)	Rx (MHz)	Gain (dBi)
	LTE-M Band 2	1850 ~ 1910	1930 ~ 1990	0.87
	LTE-M Band 4	1710 ~ 1755	2110 ~ 2155	1.41
	LTE-M Band 5	824 ~ 849	869 ~ 894	-7.97
	LTE-M Band 12	699 ~ 716	729 ~ 746	-3.85
	LTE-M Band 13	777 ~ 787	746 ~ 756	-0.39
Test Modulation	(LTE) QPSK, 16QAM;			
LTE Category	M1			
Power Class	LTE: 3			
Maximum E.I.R.P./ E.R.P.	LTE-M Band 2	24.51 dBm		
	LTE-M Band 4	25.17 dBm		
	LTE-M Band 5	13.86 dBm		
	LTE-M Band 12	17.60 dBm		
	LTE-M Band 13	20.79 dBm		
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 2 (2024)

FCC CFR 47 Part 22H (2024)

FCC CFR 47 Part 24E (2024)

FCC CFR 47 Part 27C (2024)

Reference standard:

ANSI C63.26-2015

KDB 971168 D01 Power Meas License Digital Systems v03r01

4 Test Configuration

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-M is set based on the maximum RF Output Power.

The following testing in different Bandwidth is set to detail in the following table:

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

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-M 2	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE-M 4	O	O	O	O	O	O	O	O	O	O	O	O	O	O
	LTE-M 5	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE-M 12	O	O	O	O	-	-	O	O	O	O	O	O	O	O
	LTE-M 13	-	-	O	O	-	-	O	O	O	O	O	O	O	O
Radiated Spurious Emission	LTE-M 2	O	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE-M 4	O	-	O	-	-	O	O	-	O	-	-	-	O	-
	LTE-M 5	O	-	O	O	-	-	O	-	O	-	-	-	O	-
	LTE-M 12	O	-	O	O	-	-	O	-	O	-	-	-	O	-
	LTE-M 13	-	-	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.														

Test Case

4.1 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

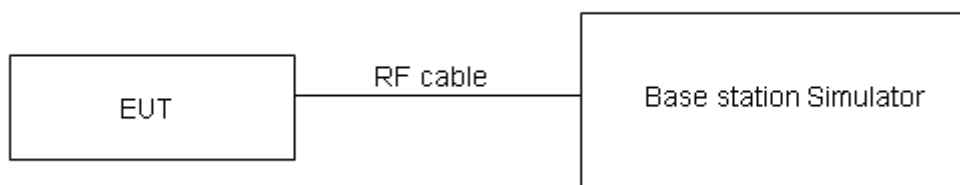
During the process of the testing, The EUT was connected to the Base Station Simulator with a known loss. The EUT is controlled by the Base Station Simulator test set to ensure max power transmission with proper modulation.

ERP can then be calculated as follows:

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

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

Test Setup



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/EIRP.

Test Results

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

4.2 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:

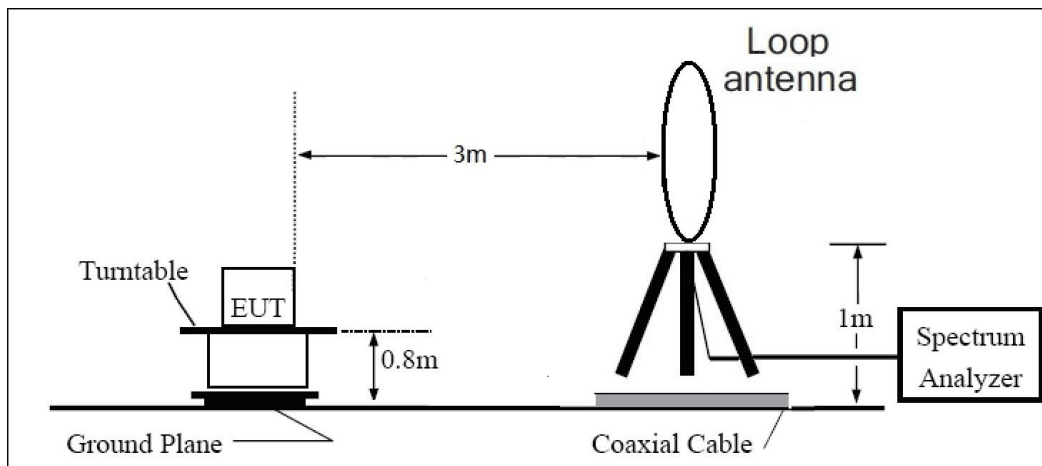
$$\text{Power(EIRP)} = \text{PMea} - \text{PAG} - \text{Pcl} + \text{Ga}$$
The measurement results are amend as described below:

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

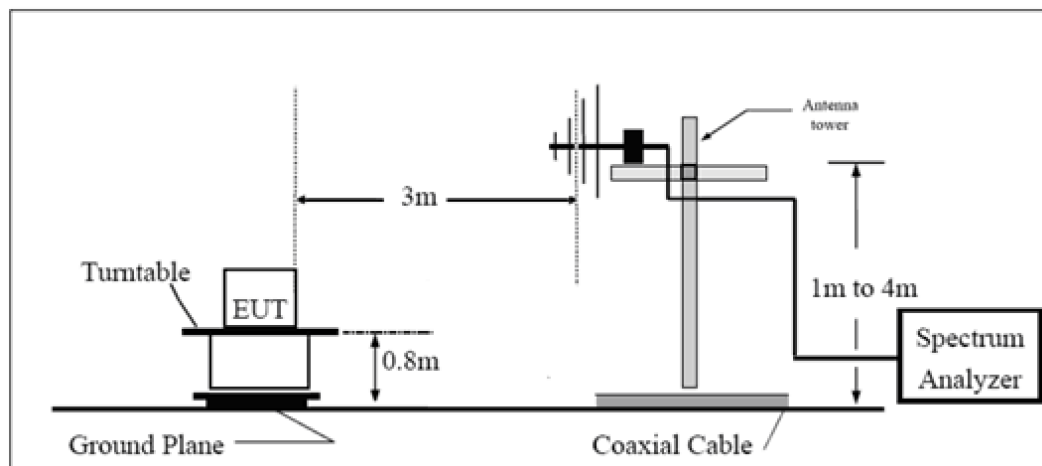
The modulation mode and RB allocation refer to section 5.1, using the maximum output power configuration.

Test setup

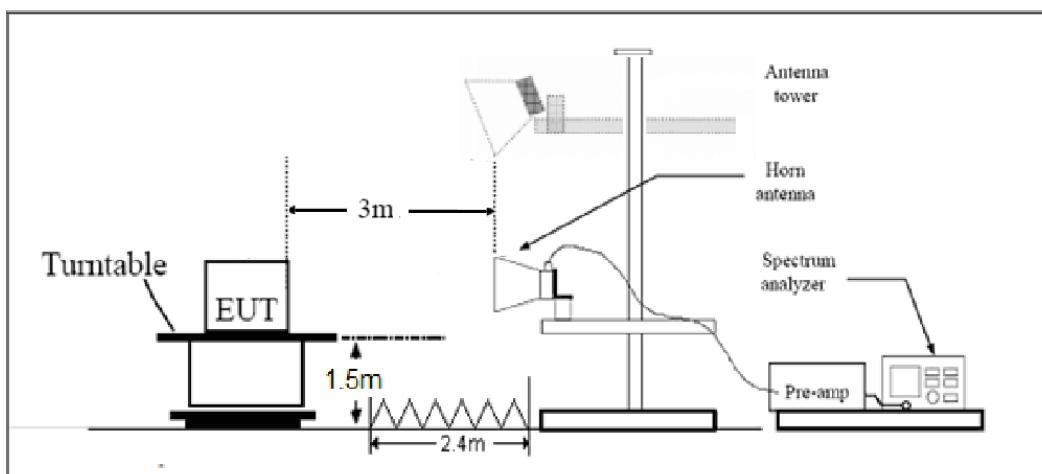
9KHz~ 30MHz



30MHz~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Measurement Uncertainty

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

Test Results

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

5 Test Results

5.1 RF Power Output and Effective (Isotropic) Radiated Power

LTE-M Band 2							
	Channel/ Frequency (MHz)	Index	RB# RBstart	Conducted Power (dBm)		EIRP POWER (dBm)	
				QPSK	16QAM	QPSK	16QAM
1.4MHz	18607/1850.7	0	1#0	23.05	22.25	23.92	23.12
		0	6#0	21.13	21.11	22.00	21.98
	18900/1880	0	1#0	23.09	22.00	23.96	22.87
		0	6#0	20.96	21.02	21.83	21.89
	19193/1909.3	0	1#5	23.50	23.58	24.37	24.45
		0	6#0	21.57	21.72	22.44	22.59
3MHz	18615/1851.5	0	1#0	23.44	22.05	24.31	22.92
		0	6#0	21.12	21.33	21.99	22.20
	18900/1880	0	1#0	23.32	22.01	24.19	22.88
		0	6#0	20.96	21.26	21.83	22.13
	19185/1908.5	0	1#5	23.01	21.99	23.88	22.86
		0	6#0	20.91	20.88	21.78	21.75
5MHz	18625/1852.5	0	1#0	23.14	23.31	24.01	24.18
		0	6#0	22.07	21.11	22.94	21.98
	18900/1880	0	1#0	23.00	23.14	23.87	24.01
		0	6#0	21.93	21.03	22.80	21.90
	19175/1907.5	0	1#5	23.37	23.35	24.24	24.22
		0	6#0	22.54	21.55	23.41	22.42
10MHz	18650/1855	0	1#0	23.03	23.24	23.90	24.11
		0	4#0	23.08	21.81	23.95	22.68
	18900/1880	0	1#0	23.07	23.23	23.94	24.10
		0	4#0	23.05	21.89	23.92	22.76
	19150/1905	0	1#5	23.30	23.64	24.17	24.51
		0	4#2	23.45	22.51	24.32	23.38
15MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	18675/1857.5	0	1#0	23.08	23.22	23.95	24.09

		0	6#0	23.14	23.24	24.01	24.11
	18900/1880	0	1#0	23.09	23.17	23.96	24.04
		0	6#0	23.03	23.06	23.90	23.93
	19125/1902.5	0	1#5	23.01	22.96	23.88	23.83
		0	6#0	23.01	23.15	23.88	24.02
20MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	18700/1860	0	1#0	23.11	23.25	23.98	24.12
		0	6#0	23.11	23.17	23.98	24.04
	18900/1880	0	1#0	23.10	23.24	23.97	24.11
		0	6#0	23.00	23.08	23.87	23.95
	19100/1900	0	1#5	23.01	22.61	23.88	23.48
		0	6#0	22.96	23.07	23.83	23.94

LTE-M Band 4							
	Channel/ Frequency (MHz)	Index	RB# RBstart	Conducted Power (dBm)		EIRP POWER(dBm)	
				QPSK	16QAM	QPSK	16QAM
1.4MHz	19957/1710.7	0	1#0	23.48	22.74	24.89	24.15
		0	6#0	21.52	21.40	22.93	22.81
	20175/1732.5	0	1#0	23.69	22.52	25.10	23.93
		0	6#0	21.37	21.56	22.78	22.97
	20393/1754.3	0	1#5	23.12	22.42	24.53	23.83
		0	6#0	21.41	21.13	22.82	22.54
3MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	19965/1711.5	0	1#0	23.62	22.85	25.03	24.26
		0	6#0	21.55	21.54	22.96	22.95
	20175/1732.5	0	1#0	23.42	22.50	24.83	23.91
		0	6#0	21.36	21.24	22.77	22.65
	20385/1753.5	0	1#5	23.25	22.63	24.66	24.04
		0	6#0	21.41	21.24	22.82	22.65
5MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	19975/1712.5	0	1#0	23.56	23.76	24.97	25.17
		0	6#0	22.54	21.42	23.95	22.83
	20175/1732.5	0	1#0	23.43	23.15	24.84	24.56
		0	6#0	22.38	21.48	23.79	22.89
	20375/1752.5	0	1#5	23.27	23.11	24.68	24.52
		0	6#0	22.44	21.51	23.85	22.92
10MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	20000/1715	0	1#0	23.66	23.37	25.07	24.78

		0	4#0	23.66	22.62	25.07	24.03
	20175/1732.5	0	1#0	23.41	23.62	24.82	25.03
		0	4#0	23.40	22.17	24.81	23.58
	20350/1750	0	1#5	23.26	23.14	24.67	24.55
		0	4#2	23.54	22.55	24.95	23.96
15MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	20025/1717.5	0	1#0	23.62	23.27	25.03	24.68
		0	6#0	23.64	23.65	25.05	25.06
	20175/1732.5	0	1#0	23.55	23.17	24.96	24.58
		0	6#0	23.54	23.58	24.95	24.99
	20325/1747.5	0	1#5	23.27	23.12	24.68	24.53
		0	6#0	23.47	23.49	24.88	24.90
20MHz	Channel/ Frequency (MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	20050/1720	0	1#0	23.58	23.36	24.99	24.77
		0	6#0	23.55	23.61	24.96	25.02
	20175/1732.5	0	1#0	23.57	23.17	24.98	24.58
		0	6#0	23.57	23.56	24.98	24.97
	20300/1745	0	1#5	23.31	23.16	24.72	24.57
		0	6#0	23.41	23.45	24.82	24.86

LTE-M Band 5							
	Channel/ Frequency(MHz)	Index	RB# RBstart	Conducted Power (dBm)		ERP POWER(dBm)	
				QPSK	16QAM	QPSK	16QAM
1.4MHz	20407/824.7	0	1#0	23.22	23.04	13.10	12.92
		0	6#0	21.57	21.33	11.45	11.21
	20525/836.5	0	1#0	23.04	22.58	12.92	12.46
		0	6#0	21.27	21.13	11.15	11.01
	20643/848.3	0	1#5	23.64	23.13	13.52	13.01
		0	6#0	21.97	21.90	11.85	11.78
3MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	20415/825.5	0	1#0	23.57	23.00	13.45	12.88
		0	6#0	21.46	21.58	11.34	11.46
	20525/836.5	0	1#0	23.65	22.32	13.53	12.20
		0	6#0	21.24	21.70	11.12	11.58
	20635/847.5	0	1#5	23.75	23.21	13.63	13.09
		0	6#0	22.01	22.02	11.89	11.90
5MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	20425/826.5	0	1#0	23.42	23.65	13.30	13.53

		0	6#0	22.67	21.66	12.55	11.54
	20525/836.5	0	1#0	23.36	23.04	13.24	12.92
		0	6#0	22.41	21.73	12.29	11.61
	20625/846.5	0	1#5	23.98	23.55	13.86	13.43
		0	6#0	22.99	22.51	12.87	12.39
10MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	20450/829	0	1#0	23.60	23.16	13.48	13.04
		0	4#0	23.65	23.03	13.53	12.91
	20525/836.5	0	1#0	23.51	23.10	13.39	12.98
		0	4#0	23.41	22.85	13.29	12.73
	20600/844	0	1#5	23.81	23.98	13.69	13.86
		0	4#2	23.95	23.24	13.83	13.12

LTE-M Band 12							
1.4MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	Conducted Power (dBm)		ERP POWER(dBm)	
				QPSK	16QAM	QPSK	16QAM
	23017/699.7	0	1#0	23.00	22.41	17.00	16.41
		0	6#0	21.23	21.09	15.23	15.09
	23095/707.5	0	1#0	23.01	22.28	17.01	16.28
		0	6#0	21.13	20.89	15.13	14.89
	23173/715.3	0	1#5	23.03	22.21	17.03	16.21
		0	6#0	21.14	20.98	15.14	14.98
3MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	23025/700.5	0	1#0	23.60	22.23	17.60	16.23
		0	6#0	21.16	21.56	15.16	15.56
	23095/707.5	0	1#0	23.41	22.05	17.41	16.05
		0	6#0	21.08	21.45	15.08	15.45
	23165/714.5	0	1#5	23.30	22.02	17.30	16.02
		0	6#0	21.12	21.51	15.12	15.51
5MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	23035/701.5	0	1#0	23.24	23.12	17.24	17.12
		0	6#0	22.26	21.58	16.26	15.58
	23095/707.5	0	1#0	23.18	22.98	17.18	16.98
		0	6#0	22.19	21.47	16.19	15.47
	23155/713.5	0	1#5	23.14	22.83	17.14	16.83
		0	6#0	22.01	20.63	16.01	14.63
10MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
	23060/704	3	1#0	23.23	23.02	17.23	17.02

	23095/707.5	0	4#0	23.33	22.56	17.33	16.56
		0	1#0	23.25	23.04	17.25	17.04
		0	4#0	23.18	22.72	17.18	16.72
	23130/711	4	1#5	23.03	23.21	17.03	17.21
		7	4#2	23.16	21.81	17.16	15.81

LTE-M Band 13							
5MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	Conducted Power (dBm)		ERP POWER(dBm)	
				QPSK	16QAM	QPSK	16QAM
	23205/779.5	0	1#0	23.08	23.33	20.54	20.79
		0	6#0	22.32	21.27	19.78	18.73
5MHz	23230/782	0	1#0	23.30	22.91	20.76	20.37
		0	6#0	22.28	21.65	19.74	19.11
	23255/784.5	0	1#5	23.02	22.70	20.48	20.16
		0	6#0	22.22	21.47	19.68	18.93
10MHz	Channel/ Frequency(MHz)	Index	RB# RBstart	QPSK	16QAM	QPSK	16QAM
				23230/782	23.25	22.87	20.71
	23230/782	3	1#0				
		0	4#0	23.23	22.59	20.69	20.05

5.2 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.

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 and worst Antenna was recorded.

LTE Band 2 CH-Middle

Band width	Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
1.4MHz	2	3759.00	-57.67	2.60	12.50	Horizontal	-47.77	-13.00	34.77	25
	3	5638.88	-49.93	3.30	12.50	Horizontal	-40.73	-13.00	27.73	36
	4	7520.00	-56.32	4.20	12.20	Horizontal	-48.32	-13.00	35.32	76
	5	9400.00	-52.71	4.30	11.10	Horizontal	-45.91	-13.00	32.91	22
	6	11280.00	-52.40	5.90	11.90	Horizontal	-46.40	-13.00	33.40	175
	7	13160.00	-50.51	5.70	14.00	Horizontal	-42.21	-13.00	29.21	25
	8	15040.00	-54.34	5.80	13.10	Horizontal	-47.04	-13.00	34.04	36
	9	16920.00	-50.47	6.10	14.60	Horizontal	-41.97	-13.00	28.97	7
	10	18800.00	--	--	--	--	--	--	--	--
5MHz	2	3755.40	-44.73	2.60	12.50	Horizontal	-34.83	-13.00	21.83	21
	3	5632.10	-46.37	3.30	12.50	Horizontal	-37.17	-13.00	24.17	135
	4	7509.20	-54.90	4.20	12.20	Horizontal	-46.90	-13.00	33.90	251
	5	9388.20	-52.07	4.30	11.10	Horizontal	-45.27	-13.00	32.27	46
	6	11265.00	-52.32	5.90	11.90	Horizontal	-46.32	-13.00	33.32	87
	7	13152.60	-50.41	5.70	14.00	Horizontal	-42.11	-13.00	29.11	12
	8	15040.20	-54.42	5.80	13.10	Horizontal	-47.12	-13.00	34.12	254
	9	16926.20	-50.46	6.10	14.60	Horizontal	-41.96	-13.00	28.96	13
	10	18800.00	--	--	--	--	--	--	--	--
20MHz	2	3742.13	-48.88	2.60	12.50	Horizontal	-38.98	-13.00	25.98	14
	3	5613.38	-52.51	3.30	12.50	Horizontal	-43.31	-13.00	30.31	23
	4	7484.63	-54.76	4.20	12.20	Horizontal	-46.76	-13.00	33.76	76
	5	9355.33	-51.96	4.30	11.10	Horizontal	-45.16	-13.00	32.16	185
	6	11226.39	-51.90	5.90	11.90	Horizontal	-45.90	-13.00	32.90	3
	7	13097.46	-51.32	5.70	14.00	Horizontal	-43.02	-13.00	30.02	75
	8	14968.52	-53.29	5.80	13.10	Horizontal	-45.99	-13.00	32.99	2
	9	16938.59	-51.67	6.10	14.60	Horizontal	-43.17	-13.00	30.17	96
	10	18800.00	--	--	--	--	--	--	--	--

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 4 CH-Middle

Band width	Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
1.4MHz	2	3464.25	-54.27	2.70	12.70	Horizontal	-46.42	-13.00	33.42	142
	3	5197.50	-58.57	3.20	12.50	Horizontal	-51.42	-13.00	38.42	78
	4	6930.00	-65.21	4.20	11.80	Horizontal	-59.76	-13.00	46.76	0
	5	8662.50	-60.13	4.40	12.50	Horizontal	-54.18	-13.00	41.18	23
	6	10395.00	-60.26	4.70	11.30	Horizontal	-55.81	-13.00	42.81	1
	7	12127.50	-59.98	5.20	13.80	Horizontal	-53.53	-13.00	40.53	214
	8	13860.00	-56.14	5.70	11.30	Horizontal	-52.69	-13.00	39.69	14
	9	15592.50	-67.28	6.10	16.80	Horizontal	-58.73	-13.00	45.73	90
	10	17325.00	-57.64	6.10	14.20	Horizontal	-51.69	-13.00	38.69	158
5MHz	2	3460.50	-53.69	2.70	12.70	Horizontal	-45.84	-13.00	32.84	142
	3	5191.50	-57.23	3.20	12.50	Horizontal	-50.08	-13.00	37.08	78
	4	6930.00	-65.72	4.20	11.80	Horizontal	-60.27	-13.00	47.27	0
	5	8662.50	-59.62	4.40	12.50	Horizontal	-53.67	-13.00	40.67	23
	6	10380.00	-60.45	4.70	11.30	Horizontal	-56.00	-13.00	43.00	1
	7	12110.00	-59.77	5.20	13.80	Horizontal	-53.32	-13.00	40.32	214
	8	13840.00	-54.87	5.70	11.30	Horizontal	-51.42	-13.00	38.42	14
	9	15570.00	-66.56	6.10	16.80	Horizontal	-58.01	-13.00	45.01	90
	10	17300.00	-57.40	6.10	14.20	Horizontal	-51.45	-13.00	38.45	158
20MHz	2	3447.75	-54.07	2.70	12.70	Horizontal	-46.22	-13.00	33.22	142
	3	5170.88	-60.83	3.20	12.50	Horizontal	-53.68	-13.00	40.68	78
	4	6930.00	-64.44	4.20	11.80	Horizontal	-58.99	-13.00	45.99	0
	5	8662.50	-60.68	4.40	12.50	Horizontal	-54.73	-13.00	41.73	23
	6	10395.00	-60.97	4.70	11.30	Horizontal	-56.52	-13.00	43.52	1
	7	12127.50	-60.34	5.20	13.80	Horizontal	-53.89	-13.00	40.89	214
	8	13860.00	-54.80	5.70	11.30	Horizontal	-51.35	-13.00	38.35	14
	9	15592.50	-66.94	6.10	16.80	Horizontal	-58.39	-13.00	45.39	90
	10	17325.00	-57.43	6.10	14.20	Horizontal	-51.48	-13.00	38.48	158

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 CH-Middle

Band width	Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
1.4MHz	2	1673.00	-68.21	1.70	8.70	Horizontal	-63.36	-13.00	50.36	289
	3	2509.50	-64.35	2.30	12.00	Horizontal	-56.80	-13.00	43.80	14
	4	3346.00	-64.91	2.70	12.70	Horizontal	-57.06	-13.00	44.06	1
	5	4182.50	-61.10	3.00	12.50	Horizontal	-53.75	-13.00	40.75	23
	6	5019.00	-57.96	3.40	12.50	Horizontal	-51.01	-13.00	38.01	185
	7	5855.50	-58.91	3.40	12.80	Horizontal	-51.66	-13.00	38.66	41
	8	6692.00	-55.23	4.10	11.50	Horizontal	-49.98	-13.00	36.98	59
	9	7528.50	-54.00	4.20	12.20	Horizontal	-48.15	-13.00	35.15	26
	10	8365.00	-52.85	4.30	12.50	Horizontal	-46.80	-13.00	33.80	0
5MHz	2	1668.60	-67.33	1.70	8.70	Horizontal	-62.48	-13.00	49.48	289
	3	2503.30	-63.54	2.30	12.00	Horizontal	-55.99	-13.00	42.99	14
	4	3337.50	-62.68	2.70	12.70	Horizontal	-54.83	-13.00	41.83	1
	5	4171.88	-61.02	3.00	12.50	Horizontal	-53.67	-13.00	40.67	23
	6	5006.25	-56.02	3.40	12.50	Horizontal	-49.07	-13.00	36.07	185
	7	5840.63	-58.38	3.40	12.80	Horizontal	-51.13	-13.00	38.13	41
	8	6675.00	-55.88	4.10	11.50	Horizontal	-50.63	-13.00	37.63	59
	9	7509.38	-53.63	4.20	12.20	Horizontal	-47.78	-13.00	34.78	26
	10	8343.75	-53.29	4.30	12.50	Horizontal	-47.24	-13.00	34.24	0
10MHz	2	1664.40	-67.69	1.70	8.70	Horizontal	-62.84	-13.00	49.84	289
	3	2496.60	-64.66	2.30	12.00	Horizontal	-57.11	-13.00	44.11	14
	4	3326.00	-65.77	2.70	12.70	Horizontal	-57.92	-13.00	44.92	1
	5	4157.50	-60.97	3.00	12.50	Horizontal	-53.62	-13.00	40.62	23
	6	4989.00	-58.60	3.40	12.50	Horizontal	-51.65	-13.00	38.65	185
	7	5820.50	-59.09	3.40	12.80	Horizontal	-51.84	-13.00	38.84	41
	8	6652.00	-56.02	4.10	11.50	Horizontal	-50.77	-13.00	37.77	59
	9	7483.50	-53.16	4.20	12.20	Horizontal	-47.31	-13.00	34.31	26
	10	8315.00	-53.47	4.30	12.50	Horizontal	-47.42	-13.00	34.42	0

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 12 CH-Middle

Band width	Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
1.4MHz	2	1413.60	-69.04	1.70	8.70	Horizontal	-64.19	-13.00	51.19	2
	3	2120.40	-69.43	2.10	11.10	Horizontal	-62.58	-13.00	49.58	78
	4	2827.20	-67.99	2.30	13.10	Horizontal	-59.34	-13.00	46.34	125
	5	3537.50	-63.48	2.60	12.70	Horizontal	-55.53	-13.00	42.53	28
	6	4245.00	-60.12	3.30	12.50	Horizontal	-53.07	-13.00	40.07	69
	7	4952.50	-59.31	3.40	12.50	Horizontal	-52.36	-13.00	39.36	14
	8	5660.00	-58.34	3.30	12.50	Horizontal	-51.29	-13.00	38.29	135
	9	6367.50	-57.83	3.80	11.50	Horizontal	-52.28	-13.00	39.28	2
	10	7075.00	-56.55	4.20	11.80	Horizontal	-51.10	-13.00	38.10	76
5MHz	2	1410.60	-69.44	1.70	8.70	Horizontal	-64.59	-13.00	51.59	2
	3	2115.90	-69.04	2.10	11.10	Horizontal	-62.19	-13.00	49.19	78
	4	2820.00	-67.90	2.30	13.10	Horizontal	-59.25	-13.00	46.25	125
	5	3525.00	-63.46	2.60	12.70	Horizontal	-55.51	-13.00	42.51	28
	6	4230.00	-60.34	3.30	12.50	Horizontal	-53.29	-13.00	40.29	69
	7	4935.00	-58.81	3.40	12.50	Horizontal	-51.86	-13.00	38.86	14
	8	5640.00	-59.50	3.30	12.50	Horizontal	-52.45	-13.00	39.45	135
	9	6345.00	-57.31	3.80	11.50	Horizontal	-51.76	-13.00	38.76	2
	10	7050.00	-56.78	4.20	11.80	Horizontal	-51.33	-13.00	38.33	76
10MHz	2	1405.00	-69.91	1.70	8.70	Horizontal	-65.06	-13.00	52.06	2
	3	2107.50	-68.41	2.10	11.10	Horizontal	-61.56	-13.00	48.56	78
	4	2810.00	-68.20	2.30	13.10	Horizontal	-59.55	-13.00	46.55	125
	5	3512.50	-63.56	2.60	12.70	Horizontal	-55.61	-13.00	42.61	28
	6	4215.00	-60.16	3.30	12.50	Horizontal	-53.11	-13.00	40.11	69
	7	4917.50	-59.06	3.40	12.50	Horizontal	-52.11	-13.00	39.11	14
	8	5620.00	-58.49	3.30	12.50	Horizontal	-51.44	-13.00	38.44	135
	9	6322.50	-57.89	3.80	11.50	Horizontal	-52.34	-13.00	39.34	2
	10	7025.00	-57.38	4.20	11.80	Horizontal	-51.93	-13.00	38.93	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 13 CH-Middle

Band width	Harmonic	Frequency (MHz)	SG (dBm)	Cable Loss (dB)	Gain (dBi)	Antenna Polarization	Result Level (dBm)	Limit (dBm)	Margin (dB)	Azimuth (deg)
5MHz	2	1559.88	-65.23	1.70	8.70	Horizontal	-58.23	-40.00	18.23	22
	3	2339.57	-43.62	2.10	12.00	Horizontal	-35.87	-13.00	22.87	17
	4	3118.00	-62.16	2.30	13.10	Horizontal	-53.51	-13.00	40.51	56
	5	3897.50	-62.14	2.90	12.50	Horizontal	-54.69	-13.00	41.69	178
	6	4677.00	-60.39	3.10	12.50	Horizontal	-53.14	-13.00	40.14	12
	7	5456.50	-60.34	3.30	12.50	Horizontal	-53.29	-13.00	40.29	26
	8	6236.00	-59.50	3.50	12.80	Horizontal	-52.35	-13.00	39.35	76
	9	7015.50	-58.12	4.20	11.80	Horizontal	-52.67	-13.00	39.67	123
	10	7795.00	-54.41	4.40	12.30	Horizontal	-48.66	-13.00	35.66	28
10MHz	2	1563.53	-80.71	1.70	8.70	Horizontal	-73.71	-40.00	33.71	22
	3	2333.32	-41.52	2.10	12.00	Horizontal	-33.77	-13.00	20.77	17
	4	3108.00	-65.96	2.30	13.10	Horizontal	-57.31	-13.00	44.31	56
	5	3885.00	-61.98	2.90	12.50	Horizontal	-54.53	-13.00	41.53	178
	6	4662.00	-60.55	3.10	12.50	Horizontal	-53.30	-13.00	40.30	12
	7	5439.00	-59.16	3.30	12.50	Horizontal	-52.11	-13.00	39.11	26
	8	6216.00	-56.52	3.50	12.80	Horizontal	-49.37	-13.00	36.37	76
	9	6993.00	-57.36	4.20	11.80	Horizontal	-51.91	-13.00	38.91	123
	10	7770.00	-54.66	4.40	12.30	Horizontal	-48.91	-13.00	35.91	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.

6 Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Wideband radio communication tester	R&S	CMW500	113645	2024-12-02	2025-12-01
Spectrum Analyzer	R&S	FSV30	100815	2024-12-02	2025-12-01
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	2024-09-24	2027-09-23
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 *****