TEST REPORT

REPORT NUMBER: 24B02W000007-001

ON

Type of Equipment:	IoT Module
Type of Designation:	L710GM
Brand Name：	LYNQ
Manufacturer:	Shanghai MobileTek Communication Ltd.
FCC ID:	2AK9D-L710GM

ACCORDING TO

FCC Part 2
FCC Part 22
FCC Part 24
FCC part 27
FCC Part 90
ANSI C63.26-2015

Chongqing Academy of Information and Communications Technology

Month date, year
Mar ,26, 2024

Signature

Jin Zhou

Director

Note:

The test results in this test report relate only to the devices specified in this report. This report shall not be reproduced except in full without the written approval of Chongqing Academy of Information and Communications Technology.

Revision Version

Report Number	Revision	Date
24B02W000007-001	00	2024-03-26

Chongqing Academy of Information and Communication Technology
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1. Test Laboratory

1.1. Testing Location

Name:	Chongqing Academy of Information and Communications Technology
Designation Number:	CN1239
Address:	No.19EastRoad,Xiantao Big-data Valley,Yubei District, Chongqing,People's Republic of China
Postal Code:	401336
Telephone:	0086-23-88069965
Fax:	0086-23-88608777

1.2. Testing Environment

Normal Temperature:	15-35℃
Relative Humidity:	30-70%

1.3. Project data

Testing Start Date:	2024-02-28
Testing End Date:	2024-03-14

1.4. Signature

2024-03-26

Junxin Dong — **Date**

(Prepared this test report)

2024-03-26

Lili Wang — **Date**

(Reviewed this test report)

2024-03-26

Jin Zhou — **Date**

Director of the laboratory
(Approved this test report)

2. Client Information

2.1. Applicant Information

Company name:	Shanghai MobileTek Communication Ltd.
Address /Post:	Free Trade Zone No. 33, No. 17 building 6H3 Xiya Road China (Shanghai)
City:	Shanghai
Country:	China
Telephone:	15821966417
Fax:	--
Email:	qh.zhang@mobiletek.cn
Contact Person:	Qinghua Zhang

2.2. Manufacturer Information

Company Name:	Shanghai MobileTek Communication Ltd.
Address /Post:	Free Trade Zone No. 33, No. 17 building 6H3 Xiya Road China (Shanghai)
City:	Shanghai
Country:	China
Telephone:	15821966417
Fax:	--
Email:	qh.zhang@mobiletek.cn
Contact Person:	Qinghua Zhang

3. Equipment under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

EUT Description	IoT Module
Model name	L710GM
Brand name	LYNQ
NB-IoT Frequency Band	2/4/5/12/13/26
CAT-M Frequency Band	2/4/5/12/13/26
Type of modulation	QPSK/BPSK/16QAM
Extreme Temperature	-40/+85℃
Nominal Test Voltage	DC 3.8V
Extreme Test High Voltage	DC 4.2V
Extreme Test Low Voltage	DC 3.4V

Note1: Photographs of EUT are shown in ANNEX A of this test report.
Note2: High and low voltage values in extreme condition test are given by manufacturer.
Note3: This project for L710GM is a variant project based on the I22W00076-NB-IoT RF-FCC-Rev2, model: L710, original FCC ID: 2AK9D-L710G, the difference statement see the Annex C.

3.2. Internal Identification of EUT used during the test

EUT ID	SN or IMEI	HW Version	SW Version	Date of receipt
24B02W000007#S1	IMEI:866238067759372	V4	L710v10.06b01GM.00	2024-02-26

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Outline of Equipment under Test

Technology	Band	UL Freq.(MHz)	DL Freq.(MHz)	Note
NB-IoT	Band2	1850 – 1910	1930 – 1990	The uplink frequency range is 1850.2–1909.8MHz; Downlink frequency range: 1930.2 –1989.8MHz
	Band4	1710-1755	2110-2155	The uplink frequency range is 1710.2–1754.8MHz; Downlink frequency range: 2110.2 –2154.8MHz
	Band5	824 – 849	869 – 894	Covered by Band26 (Band5 is a subset of Band26. Both Bands share the same hardware and have the same radio performance. Separate measurement in Band5 is not required.)The uplink frequency range is 824.2–848.8MHz; Downlink frequency range: 869.2 – 893.8MHz
	Band12	699 – 716	729 – 746	The uplink frequency range is 699.2–715.8MHz; Downlink frequency range: 729.2 –745.8MHz
	Band13	777 – 787	746 – 756	The uplink frequency range is 777.2–786.8MHz; Downlink frequency range: 746.2 –755.8MHz
	Band26	814 – 849	859 – 894	The uplink frequency range is 814.2–848.8MHz; Downlink frequency range: 859.2 –893.8MHz

3.4. Internal Identification of AE used during the test

AE ID*	Description	Manufacturer	Model
AE1	SUB	Shanghai Mobiletek Communication Ltd.	L510
AE2	Antenna	Shanghai Jesoncom CommunicationEngineering Co.. Ltd.	5J002B

AE ID*: is used to identify the test sample in the lab internally.

AE info are provided customer.

Frequency Band	AntennaGain (dBi)	AntennaGain (dBd)
NB-IoT B2	2.0	N/A
NB-IoT B4	4.0	N/A
NB-IoT B12	4.0	1.85
NB-IoT B13	4.0	1.85
NB-IoT 26(824MHz-849MHz)	3.0	0.85
NB-IoT B26(814MHz-824MHz)	4.0	1.85

4. Reference Documents

4.1. Documents supplied by applicant

PICS/PIXIT, referring to Annex B for detailed information, is supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

Reference	Title	Version
FCC Part 2	FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS，e-CFR	--
FCC Part 22	PUBLIC MOBILE SERVICES	--
FCC Part 24	PERSONAL COMMUNICATIONS SERVICES,e-CFR,	--
FCC part 27	MISCELLANEOUS WIRELESS OMMUNICATIONS SERVICES，e-CFR,	--
FCC Part 90	PRIVATE LAND MOBILE RADIO SERVICES	--
ANSI C63.26	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services	2015

5. Test Equipments Utilized

5.1. RF Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	DC Power Supply	62015L-60-6	L02000001587	--	--	Chroma	2024-06-28
2	Universal Radio Communication Tester	CMW500	166779	--	--	R&S	2024-06-28
3	Splitter	--	--	--	--	--	--

5.2. RSE Test System

No.	Equipment	Model	SN	HW Version	SW Version	Manufacture	Cal.Due Date
1	Universal Radio Communication Tester	CMW500	128181	--	--	R&S	2024-06-28
2	Test Receiver	ESU40	100350	01	4.43 SP3	R&S	2024-06-28
3	Ultra-wideband Log Periodic Antenna	VULB 9163	9163-586	--	--	Schwarzbeck	2024-10-28
4	Double Ridged Guide Antenna	9120D	9120D-1103	--	--	Schwarzbeck	2024-05-05
5	Ultra-wideband Log Periodic Antenna	VULB 9163	00995	--	--	Schwarzbeck	2025-09-11
6	Double Ridged Guide Antenna	9120D	9120D-1083	--	--	Schwarzbeck	2024-12-14
7	High gain horn antenna	DATE 1152	LM7127			ETS	2024-09-06
8	Fully-Anechoic Chamber	FAC5	--	--	--	TDK	2024-09-22
9	Generator	SMU 200A	104517	--	--	R&S	2024-06-28
10	Amplifier1	SCU-08F1	8320027	--	--	R&S	--
11	Amplifier2	SCU-18F	180093	--	--	R&S	--

5.3. Climate Chamber

No.	Name	Type	SN	Manufacture	Cal.Due Date
--	--	--	--	--	--

5.4. Vibration table

No.	Name	Type	SN	Manufacture	Cal.Due Date
--	--	--	--	--	--

5.5. Test software

No.	Name	version	SN	Manufacture
1	T-RFS500	V2.0	--	Beijing Zhiwang Xince Technology Co., Ltd.
2	EMC32	V9.26.01	--	RS

6. Test Results

6.1. Summary of Test Results

A brief summary of the tests carried out is shown as following.

FCC Rules	Name of Test	Result
2.1046,22.913(a),24.232(c),27.50,90.635(b)	Conducted RF Power Output	Pass[Note1/Note2]
2.1046,22.913(a),24.232(c),27.50,90.635(b)	ERP and EIRP	Pass[note1]
2.1049,22.917(b), 24.238(b),90.209	Occupied Bandwidth	Pass[note1]
2.1051,24.238,2.1053,22.917, 27.53,90.691	Conducted spurious emissions	Pass[note1]
2.1051,24.238,2.1053,22.917, 27.53,90.691	Radiated Spurious Emission	Pass
2.1051,24.238, 2.1053, 22.917, 27.53,90.691	Band Edge	Pass[note1]
2.1055, 22.355,24.235, 27.54,90.213	Frequency Stability	Pass[note1]
24.232, 27.50	Peak to Average Ratio	Pass[note1]
Note 1: Test Data Reference Report I22W00076-NB-IoT RF-FCC-Rev2. Note 2:The test data in this report is validation data for worst mode.		

6.2. Conducted RF Power Output

Specifications:	FCC Part 2.1046,22.913,24.232,27.50,90.635
DUT Serial Number:	IMEI:866238067759372
Test conditions:	Ambient Temperature:15℃-35℃ Relative Humidity:30%-70% Air pressure: 86-106kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.913(a), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

According to Part24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to Part 27.50(c), portable stations (hand-held devices) in the 600 MHz uplink Band and the 698-746 MHz Band, and fixed and mobile stations in the 600 MHz uplink Band are limited to 3 watts ERP.

According to Part 27.50(b): Portable stations (hand-held devices) transmitting in the 746–757 MHz, 776–788 MHz, and 805–806 MHz bands are limited to 3 watts ERP.

According to Part 27.50(d), fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz Band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz Bands are limited to 1 watt EIRP.

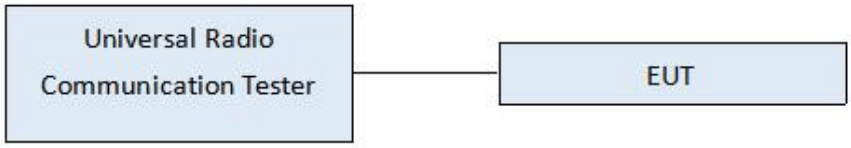
According to Part 90.635 (b),The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty	0.6 dB (k=2)

Test Setup:

During the test, the EUT was controlled via the Wireless Telecommunications Test Set to ensure max power transmission and proper modulation



Test Method:

The EUT is connected to the Universal Radio Communication Tester through the RF cable, and the average

power and peak power are obtained through the Universal Radio Communication Tester

Note: --

6.2.1 Conducted RF Power Output Results

Note: The difference between original and verified conducted power is less than 3dB that meets the requirement of KDB 484596 D01 data reference, The power listed in the original certifictes still apllies to this case.

Verify power data:

NB-IoT Band 2

Sub-carrierSpacing[KHz]	Modulation	N_{tones}	Channel	Original result(dBm)	Test result(dBm)	deviation(dB)= Original result-Test result
3.75	BPSK	1@0	MID	21.21	20.85	0.36
3.75	BPSK	1@0	HIGH	21.51	21.25	0.26
3.75	BPSK	1@47	MID	21.23	21.11	0.12
3.75	BPSK	1@47	HIGH	21.52	21.18	0.34
3.75	QPSK	1@0	MID	21.30	21.26	0.04
3.75	QPSK	1@47	MID	21.24	21.17	0.07
3.75	QPSK	1@47	HIGH	21.49	21.23	0.26
15	BPSK	1@0	HIGH	21.78	20.99	0.79
15	BPSK	1@11	HIGH	21.74	20.90	0.84
15	QPSK	1@0	LOW	21.84	20.93	0.91
15	QPSK	1@0	MID	21.15	20.89	0.26
15	QPSK	1@11	HIGH	21.73	20.83	0.90

NB-IoT Band 4

Sub-carrierSpacing [KHz]	Modulation	Ntones	Channel	Original result(dBm)	Test result(dBm)	deviation(dB)=Original result-Test result
3.75	BPSK	1@0	LOW	21.97	21.23	0.74
3.75	BPSK	1@47	MID	21.30	20.91	0.39
3.75	QPSK	1@0	LOW	21.01	21.16	-0.15
3.75	QPSK	1@47	LOW	21.92	21.09	0.83
3.75	QPSK	1@47	MID	21.30	20.84	0.46
15	BPSK	1@0	LOW	21.32	21.21	0.11
15	BPSK	1@0	HIGH	21.42	21.21	0.21
15	BPSK	1@11	HIGH	21.40	21.22	0.18
15	QPSK	1@11	LOW	21.27	21.21	0.06
15	QPSK	1@11	MID	21.49	21.21	0.28

NB-IoT Band 12

Sub-carrierSpacing[KHz]	Modulation	Ntones	Channel	Original result(dBm)	Test result(dBm)	deviation(dB)=Original result-Test result
3.75	BPSK	1@0	LOW	21.49	21.33	0.16
3.75	BPSK	1@0	MID	21.41	21.38	0.03
3.75	BPSK	1@47	LOW	21.44	21.18	0.26
3.75	QPSK	1@0	LOW	21.22	21.30	-0.08
3.75	QPSK	1@47	LOW	21.26	21.24	0.02
3.75	QPSK	1@47	MID	21.12	21.35	-0.23
15	BPSK	1@0	LOW	21.23	21.32	-0.09
15	BPSK	1@11	HIGH	21.35	21.28	0.07
15	QPSK	1@0	LOW	21.42	21.01	0.41
15	QPSK	1@0	MID	21.40	21.05	0.35
15	QPSK	1@11	HIGH	21.48	21.25	0.23

NB-IoT Band 13

Sub-carrierSpacing[KHz]	Modulation	Ntones	Channel	Original result(dBm)	Test result(dBm)	deviation(dB)=Original result-Test result
3.75	BPSK	1@0	LOW	21.76	21.55	0.21
3.75	BPSK	1@0	HIGH	21.51	21.56	-0.05
3.75	BPSK	1@47	HIGH	21.52	21.47	0.05
3.75	QPSK	1@0	HIGH	21.56	21.60	-0.04
3.75	QPSK	1@47	HIGH	21.49	21.53	-0.04
15	BPSK	1@0	LOW	21.90	21.62	0.28
15	BPSK	1@11	HIGH	21.74	21.51	0.23
15	QPSK	1@0	HIGH	21.85	21.50	0.35
15	QPSK	1@11	LOW	21.82	21.61	0.21
15	QPSK	1@11	HIGH	21.73	21.58	0.15

NB-IoT Band 26(824MHz-849MHz)

Sub-carrierSpacing[KHz]	Modulation	Ntones	Channel	Original result(dBm)	Test result(dBm)	deviation(dB)=Original result-Test result
3.75	BPSK	1@0	LOW	21.84	21.55	0.29
3.75	BPSK	1@0	HIGH	21.02	21.52	-0.50
3.75	QPSK	1@0	LOW	21.82	21.14	0.68
3.75	QPSK	1@0	MID	21.79	21.11	0.68
3.75	QPSK	1@47	HIGH	21.84	21.02	0.82
15	BPSK	1@0	LOW	21.48	21.38	0.10
15	BPSK	1@11	MID	21.95	21.23	0.72
15	BPSK	1@11	HIGH	21.24	21.21	0.03
15	QPSK	1@0	LOW	21.44	21.44	0.00
15	QPSK	1@11	MID	21.14	21.34	-0.20

NB-IoT Band 26(814MHz-824MHz)

Sub-carrierSpacing[KHz]	Modulation	Ntones	Channel	Original result(dBm)	Test result(dBm)	deviation(dB)=Original result-Test result
3.75	BPSK	1@0	LOW	21.80	21.48	0.32
3.75	BPSK	1@0	MID	21.78	21.48	0.30
3.75	BPSK	1@47	HIGH	21.66	21.48	0.18
3.75	QPSK	1@0	LOW	21.94	21.63	0.31
3.75	QPSK	1@47	HIGH	21.71	21.44	0.27
15	BPSK	1@0	LOW	21.15	21.28	-0.13
15	BPSK	1@11	HIGH	21.82	21.22	0.60
15	QPSK	1@0	LOW	21.10	21.41	-0.31
15	QPSK	1@11	HIGH	21.87	21.33	0.54

6.3. Radiated Spurious Emission

Specifications:	FCC Part 2.1051,2.1053,27.53
DUT Serial Number:	IMEI:866238067759372
Test conditions:	Ambient Temperature:19.3℃-22.6℃ Relative Humidity:50.0%-53.0% Air pressure: 96.5kPa-96.7kPa
Test Results:	Pass

Limit Level Construction:

According to Part 22.917 (a), i.e., Out of Band emissions. 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.

According to Part 24.238 (a), i.e., Out of Band emissions. 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, so the limit level is: P(dBm)– (43 + 10 log(P)) dB= -13dBm.

According to Part 27.53(c):

On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

According to Part 27.53(f):

For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

According to Part 27.53(h):

Except as otherwise specified below, 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.

According to Part 27.53(g):

For operations in the 600 MHz Band and the 698-746 MHz Band, the power of any emission outside a licensee's frequency Band(s) of operation shall be attenuated below the transmitter power (P) within the licensed Band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution Bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz Bands immediately outside and adjacent to a licensee's frequency block, a resolution Bandwidth of at least 30 kHz may be employed.

According to Part 90.691:

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as

follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log10(f/6.1) decibels or 50 + 10 Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 43 + 10Log10(P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 37.5 kHz.

(b) When an emission outside of the authorized bandwidth causes harmful interference, the Commission may, at its discretion, require greater attenuation than specified in this section.

Limits for Radiated spurious emissions(UE)	
Frequency range	**Limit Level /Resolution Bandwidth**
30 MHz to 20000 MHz	-13dBm/1MHz

Measurement Uncertainty:

Item	Uncertainty
Expanded Uncertainty（30MHz-150MHz）	3.8 dB (k=2)
Expanded Uncertainty（150MHz-1GHz）	4.0dB (k=2)
Expanded Uncertainty（1GHz-3GHz）	3.1dB (k=2)
Expanded Uncertainty（3GHz-6GHz）	3.2dB (k=2)
Expanded Uncertainty（6GHz-20GHz）	3.9dB (k=2)

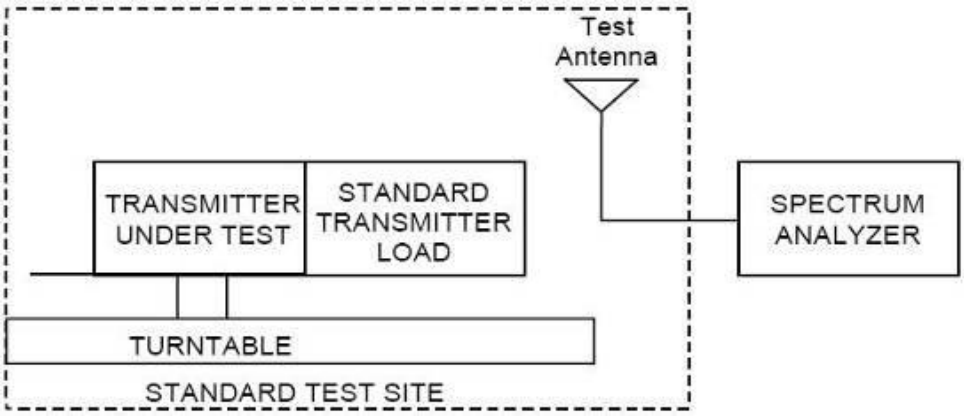
Test Setup:

The EUT was placed in an anechoic chamber. The Wireless Communications Test Set was used to set the TX channel and power level and modulate the TX signal with different bit patterns.

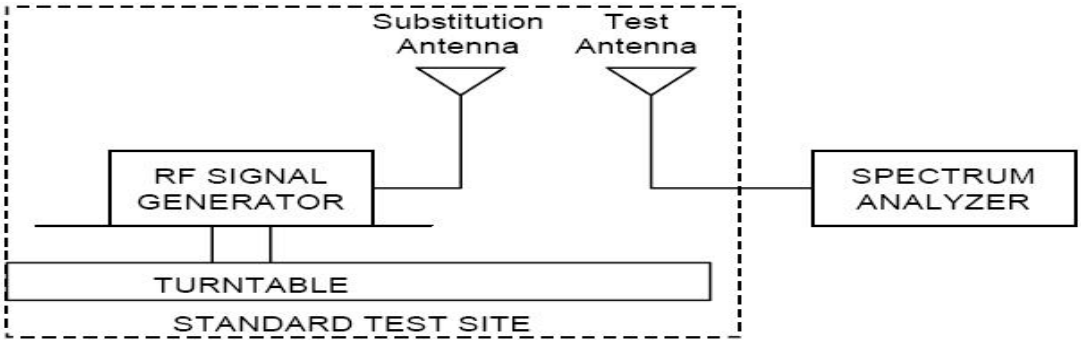
Test Method:

The measurement method is substitution method accordance with section 2.2.12 of ANSI/TIA-603-E: Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

(a) Connect the equipment as illustrated and measure the spurious emissions as the method as above. The distance from the device to the antenna is 3 m .



(b) Reconnect the equipment as illustrated.



(c) Remove the transmitter and replace it with a substitution antenna. The center of the substitution antenna should be approximately at the same location as the center of the transmitter.

(d) Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a non-radiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.

(e) Repeat step d) with both antennas vertically polarized for each spurious frequency.

(f) Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps d) and e) by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula:

P_d(dBm) = P_g(dBm) – cable loss (dB) + antenna gain (dB)

where:

Pd is the dipole equivalent power and Pg is the generator output power into the substitution antenna.

Test frequency: 30MHz- 20GHz

All modes were tested,only the worst case was reported.

6.3.1 NB loT Radiated Spurious Emission Results

NB loT B2 Radiated Spurious Emission Results

Test Data （15KHz bandwidth 18602 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
125.004000	-85.98	0.4	3.9	-82.48	V
1673.600000	-66.75	1.1	9.7	-58.15	H
2026.400000	-59.59	1.2	9.2	-51.59	H
3700.161290	-72.15	2.3	12.3	-62.15	V
8052.096774	-71.57	2.3	11.2	-62.67	V
10664.000000	-65.91	2.8	11.0	-57.71	V

NB loT B2 Radiated Spurious Emission Results

Test Data （15KHz bandwidth 18900 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1700.900000	-65.68	1.1	10.0	-56.78	H
2059.300000	-62.16	1.2	10.1	-53.26	H
2744.500000	-66.17	1.4	11.0	-56.57	H
5105.806452	-76.76	2.1	12.4	-66.46	V
7162.741936	-73.17	2.2	11.4	-63.97	V
9010.500000	-67.68	2.8	11.5	-58.98	V

NB loT B2 Radiated Spurious Emission Results

Test Data （15KHz bandwidth 19198 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
124.962000	-87.02	0.4	3.9	-83.52	V
274.986000	-95.17	0.3	5.6	-89.87	V
2091.500000	-59.92	1.1	9.6	-51.42	H
3819.193548	-76.23	2.4	12.5	-66.13	V
6981.290323	-75.07	2.6	12.0	-65.67	V
9191.500000	-66.87	3.1	10.9	-59.07	V

NB loT B4 Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 19952 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1560.900000	-57.78	1.0	8.6	-50.18	H
1859.100000	-53.77	1.0	9.7	-45.07	H
2743.000000	-66.29	1.3	11.0	-56.59	V
3420.000000	-64.40	1.5	12.5	-53.40	H
5130.483871	-76.19	1.9	12.8	-65.29	H
9175.500000	-67.07	3.1	11.1	-59.07	V

NB loT B4 Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 19952 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
96.864000	-81.70	0.2	-1.8	-83.70	V
1581.900000	-58.27	1.0	8.6	-50.67	H
1882.900000	-54.30	1.0	9.6	-45.70	H
3464.516129	-58.03	1.5	12.3	-47.23	H
9173.000000	-67.05	3.1	11.1	-59.05	V
10571.500000	-65.82	3.1	11.0	-57.92	V

NB loT B4 Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 20338 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1596.600000	-58.17	1.0	10.4	-48.77	H
1901.100000	-58.72	1.0	9.6	-50.12	H
2188.100000	-61.99	1.1	9.0	-54.09	H
3497.419355	-65.70	1.7	12.2	-55.20	H
5246.129032	-76.31	2.8	13.4	-65.71	H
9239.000000	-65.70	3.3	10.8	-58.20	V

NB IoT B12 Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 23012 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
125.004000	-85.78	0.4	3.9	-82.28	V
275.028000	-95.89	0.3	6.3	-89.89	V
2450.000000	-61.03	1.3	10.8	-51.53	V
7096.935484	-73.76	2.2	11.4	-64.56	V
9198.500000	-66.18	3.1	10.9	-58.38	V
10571.500000	-65.72	3.1	11.0	-57.82	V

NB IoT B12 Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 23095 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
74.982000	-86.01	0.1	-2.8	-88.91	V
165.660000	-90.90	0.4	5.9	-85.40	H
1848.600000	-71.37	1.0	9.7	-62.67	H
7098.870968	-72.48	2.2	10.4	-64.28	V
9261.000000	-66.06	3.3	10.8	-58.56	V
11314.000000	-65.92	3.8	11.6	-58.12	V

NB loT B12 Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 23178 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
121.854000	-84.86	0.4	2.1	-83.16	V
1431.200000	-71.76	0.9	7.7	-64.96	H
2448.000000	-64.79	1.3	10.8	-55.29	V
5109.677419	-76.95	2.1	12.4	-66.65	V
7127.903226	-72.55	2.2	10.4	-64.35	V
10450.500000	-64.74	3.0	10.2	-57.54	V

NB loT B13 Radiated Spurious Emission Results

Test Data （15KHz bandwidth 23182 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
119.670000	-85.33	0.4	2.1	-83.63	H
1553.900000	-58.78	1.0	8.6	-51.18	H
2812.000000	-65.01	1.4	10.9	-55.51	H
4662.580645	-77.07	2.0	12.6	-66.47	H
9082.000000	-67.25	3.2	11.3	-59.15	V
10879.500000	-65.94	3.0	11.2	-57.74	V

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1590.300000	-75.60	1.00	10.4	-66.2	H

The max radiated power of 1559-1610 MHz is -66.2dBm＜-40dBm（-70dBW/MHz）.

There is no signal that bandwidth is less than 700 Hz bandwidth

NB loT B13 Radiated Spurious Emission Results

Test Data （15KHz bandwidth 23230 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
831.960000	-68.41	0.7	7.3	-61.81	H
1563.700000	-58.95	1.0	8.6	-51.35	H
2798.500000	-65.16	1.4	10.9	-55.66	V
3575.322581	-74.86	1.6	12.2	-64.26	H
9196.500000	-66.24	3.1	10.9	-58.44	V
12103.333333	-68.64	2.7	12.9	-58.44	V

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1590.300000	-75.50	1.00	10.4	-66.10	H

The max radiated power of 1559-1610 MHz is -75.50dBm＜-40dBm（-70dBW/MHz）.

There is no signal that bandwidth is less than 700 Hz bandwidth

NB loT B13 Radiated Spurious Emission Results

Test Data （15KHz bandwidth 23278 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
96.864000	-81.93	0.2	-1.8	-83.93	V
825.200000	-64.17	0.6	7.3	-57.47	H
1573.500000	-58.76	1.0	8.6	-51.16	H
4720.161290	-76.41	2.1	12.7	-65.81	H
9234.000000	-65.68	3.3	10.8	-58.18	V
11085.000000	-67.17	2.8	11.8	-58.17	V

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1590.3	-75.70	1.00	10.4	-66.30	V

The max radiated power of 1559-1610 MHz is -75.70dBm＜-40dBm（-70dBW/MHz）.

There is no signal that bandwidth is less than 700 Hz bandwidth

NB IoT B26(814MHz-824MHz) Radiated Spurious Emission Results

Test Data （15KHz bandwidth 26692 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
165.786000	-92.41	0.3	5.9	-86.81	H
1628.100000	-59.41	1.0	9.7	-50.71	H
2201.600000	-65.19	1.2	9.0	-57.39	H
3564.193548	-80.77	1.6	12.2	-70.17	V
5112.096774	-76.92	2.1	12.4	-66.62	V
9196.500000	-66.24	3.1	10.9	-58.44	V

NB IoT B26(814MHz-824MHz) Radiated Spurious Emission Results

Test Data （15KHz bandwidth 26740 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
165.156000	-93.04	0.3	5.9	-87.44	H
1637.900000	-62.18	1.0	9.7	-53.48	H
2809.000000	-64.86	1.4	10.9	-55.36	V
4913.225806	-77.28	2.3	12.5	-67.08	H
9237.000000	-65.88	3.3	10.8	-58.38	V
11540.500000	-67.00	2.8	11.9	-57.90	V

NB loT B26(814MHz-824MHz) Radiated Spurious Emission Results

Test Data （15KHz bandwidth 26788 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
745.225000	-90.24	0.5	6.8	-83.94	V
1647.000000	-61.32	1.0	9.7	-52.62	H
2200.000000	-65.09	1.2	9.0	-57.29	H
5114.032258	-76.87	2.1	12.4	-66.57	V
7123.064516	-73.76	2.2	11.4	-64.56	V
9194.000000	-66.25	3.1	10.9	-58.45	V

NB IoT B26(824MHz-849MHz) Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 26792 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1102.800000	-76.29	0.7	6.8	-70.19	V
1933.300000	-57.36	1.1	9.9	-48.56	H
2443.600000	-66.95	1.3	10.8	-57.45	V
7231.451613	-73.21	2.2	11.4	-64.01	V
9237.000000	-66.17	2.8	10.8	-58.17	V
11515.500000	-65.90	3.9	11.9	-57.90	V

NB IoT B26(824MHz-849MHz) Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 26915 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
166.584000	-92.07	0.3	5.9	-86.47	V
1672.900000	-72.83	1.0	9.7	-64.13	H
2425.600000	-66.95	1.3	10.8	-57.45	H
5111.612903	-76.61	1.9	12.4	-66.11	V
7253.225807	-72.76	2.2	11.4	-63.56	V
12115.416667	-68.16	2.7	12.9	-57.96	V

NB loT B26(824MHz-849MHz) Radiated Spurious Emission Results

Test Data （3.75KHz bandwidth 27038 BPSK Mode）

Frequency [MHz]	Generator output power(Pg) [dBm]	Cable loss [dB]	Antenna Gain [dB]	Spurious Emission Power (Pd) [dBm]	Antenna Polarization [H/V]
1105.600000	-76.15	0.7	6.7	-70.15	V
1850.700000	-71.24	1.0	9.7	-62.54	H
2200.000000	-65.18	1.2	9.0	-57.38	H
3394.838710	-78.69	1.6	12.5	-67.79	H
8049.677419	-71.45	2.3	11.2	-62.55	H
10443.000000	-65.40	3.1	11.2	-57.30	H

ANNEX A EUT Photos

See the document” 24B02W000007-External Photos”.
See the document” 24B02W000007-Internal Photos ”.

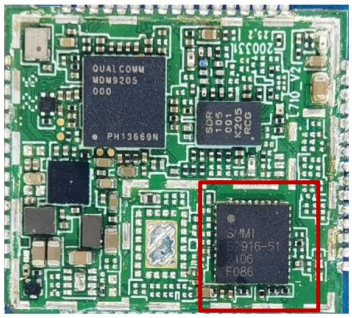
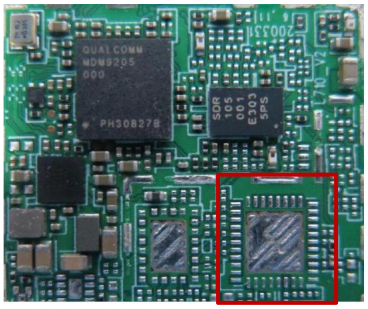
ANNEX B Deviations from Prescribed Test Methods

No deviation from Prescribed Test Methods.

ANNEX C Difference Statement

Modular declaration letter

Applicant's complete, legal business name: Shanghai MobileTek Communication Ltd.
Applicant's mailing address: Free Trade Zone No. 33, No. 17 building 6H3 Xiya Road China (Shanghai)
We declare that compared with the Parent (model: L710, FCC ID: 2AK9D-L710G, Approval Date: 2023-01-10), the Variant (model: L710GM, FCC ID: 2AK9D-L710GM) that the GSM is removed by hardware, and the others are unchanged.
The differences are listed below:

Items	Before	After	Remark
Hardware	V4.0	V4	Remove GSM chip
Software	L710v09.01b01G_FGP.01	L710v10.06b01GM.00	
Before and after chart			The GSM chip in the red box was removed

Please contact me if you have any questions or need future information regarding this application.

Sincerely,

Printed Name:Bin Yang
Company:Shanghai MobileTek Communication Ltd.
Job Title:manager
Email:b.yang@mobiletek.cn
Telephone: 18616835910

END OF REPORT