TEST REPORT

Product Name	:	Smart Phone
Brand Name	:	LAGENIO
Model	:	A11
Series Model	:	A11 Pro
FCC ID	:	2BOJC-A11PRO
Applicant	:	**Shenzhen Tianruixiang Communication Equipment Co.,LTD**
Address	:	12/F, Building B, Longhua Digital Innovation Center, Longhua District, Shenzhen, China
Manufacturer	:	**Shenzhen Tianruixiang Communication Equipment Co.,LTD**
Address	:	12/F, Building B, Longhua Digital Innovation Center, Longhua District, Shenzhen, China
Standard(s)	:	FCC CFR Title 47 Part 2, Part 22H, Part 24E, Part 27 ANSI C63.26:2015 KDB 971168 D01
Date of Receipt	:	Mar. 13, 2025
Date of Test	:	Mar. 14, 2025~ Apr. 09, 2025
Issued Date	:	Apr. 10, 2025

Issued By: **Guangdong Asia Hongke Test Technology Limited**
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GUANGDONG ASIA TEST TECHNOLOGY LIMITED AiT TEST REPORT

Report Revise Record

Report Version	Issued Date	Notes
M1	Mar. 25, 2025	Initial Release

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1 TEST SUMMARY

1.1 Test Standards

The tests were performed according to following standards:

FCC Part 22: PRIVATE LAND MOBILE RADIO SERVICES.

FCC Part 24: PUBLIC MOBILE SERVICES

FCC Part 2: FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

ANSI C63.26:2015: American National Standard of procedures for compliance testing of transmitters used in licensed radio services.

ANSI C63.10-2013 Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz

KDB971168 D01:v03r01 MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

1.2 Test Summary

Test Item	Section of Regulations	Result
RF Output Power	2.1046	Pass
Effective Radiated Power	22.913 (a)(5), 24.232 (c), 27.50(d)(4)	Pass
Peak-to-Average Ratio	24.232 (d), 27.50(d)(5)	Pass
99% & -26 dB Occupied Bandwidth	2.1049,	Pass
Out of band emission, Band Edge	22.917(a), 24.238 (a), 27.53(h)	Pass
Spurious Emissions at Antenna Terminal	2.1051, 22.917(a), 24.238(a), 27.53(h)	Pass
Radiates Spurious Emission	2.1053, 22.917(a), 24.238(a), 27.53(h)	Pass
Frequency stability	2.1055, 22.355, 24.235, 27.54	Pass

1.3 Test Facility

Test Laboratory:
Guangdong Asia Hongke Test Technology Limited
B1/F, Building 11, Junfeng Industrial Park, Chongqing Road, Heping Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China

The test facility is recognized, certified or accredited by the following organizations:
FCC-Registration No.: 251906 Designation Number: CN1376
Guangdong Asia Hongke Test Technology Limited has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files.

IC —Registration No.: 31737 CAB identifier: CN0165
The 3m Semi-anechoic chamber of Guangdong Asia Hongke Test Technology Limited has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 31737

A2LA-Lab Cert. No.: 7133.01
Guangdong Asia Hongke Test Technology Limited has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2017 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

1.4 Measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report according to CISPR 16 - 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the Guangdong Asia Hongke Test Technology Limited’s quality system according to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.
Hereafter the best measurement capability for Asia Hongke laboratory is reported:

Test	Measurement Uncertainty	Notes
Power Line Conducted Emission	9KHz~30MHz ±1.20 dB	(1)
Radiated Emission	9KHz~30MHz ±3.10dB	(1)
Radiated Emission	30MHz ~1GHz ±3.75dB	(1)
Radiated Emission	1GHz~18GHz ±3.88 dB	(1)
Radiated Emission	18GHz-40GHz ±3.88dB	(1)
RF power, conducted	30MHz~6GHz ±0.16dB	(1)
RF power density, conducted	±0.24dB	(1)
Spurious emissions, conducted	±0.21dB	(1)
Temperature	±1℃	(1)
Humidity	±3%	(1)
DC and low frequency voltages	±1.5%	(1)
Time	±2%	(1)
Duty cycle	±2%	(1)

The report uncertainty of measurement y ± U, where expended uncertainty U is based on a standard uncertainty Multiplied by a coverage factor of k=2 , providing a level of confidence of approximately 95%

2 GENERAL INFORMATION

2.1 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2 General Description of EUT

Product Name:	Smart Phone
Model/Type reference:	A11
Serial Model:	A11 Pro
Power Supply:	Input: DC 5V⎓2A DC 3.87V 5150mAh/19.93Wh Rechargeable Li-ion battery
Adapter information:	Model: TPA-418G050200UU01 Input: 100-240V~ 50/60Hz 0.3A Output: 5.0V⎓2.0A 10.0W
Hardware Version:	SC6019LU_MB_V2.0.0 20241223
Software Version:	N/A
Sample(s) Status:	AiTSZ-250313052-1(Normal sample) AiTSZ-250313052-2(Engineer sample)
GSM/WCDMA:	
Support Networks:	GSM,GPRS, EDGE, WCDMA, HSDPA, HSUPA
Frequency Bands:	☒GSM 850 ☒PCS1900 (U.S. Bands) ☐GSM 900 ☐DCS 1800 (Non-U.S. Bands) ☒WCDMA Band II ☒WCDMA Band IV ☒WCDMA Band V (U.S. Bands) ☐WCDMA Band I ☐WCDMA Band VIII (Non-U.S. Bands)
Type of Modulation:	GMSK,8PSK Modulation For GSM/GPRS/EDGE
	BPSK,QPSK Modulation For WCDMA/HSDPA/HSUPA
Frequency Range:	GSM/GPRS/EDGE 850: 824.2MHz-848.8 MHz
	GSM/GPRS/EDGE 1900: 1850.2MHz-1909.8 MHz
	WCDMA Band II: 1852.4MHz-1907.6 MHz
	WCDMA Band IV: 1712.4MHz-1752.6 MHz
	WCDMA Band V: 826.4-846.6 MHz
Antenna type:	FPC Antenna
Antenna gain:	GSM850: -1.34dBi, PCS1900: 1.37dBi WCDMA II: 1.37dBi, WCDMA IV: 0.72dBi WCDMA V: -1.34dBi
Remark: The above DUT's information was declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or the User's Manual.	

2.3 Description of Test Modes and Test Frequency

The EUT has been tested under typical operating condition. The CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing. Regards to the frequency band operation: the lowest、middle and highest frequency of channel were selected to perform the test, then shown on this report.

Test Frequency:

GSM 850		PCS1900	
Channel	Frequency (MHz)	Channel	Frequency (MHz)
128	824.20	512	1850.20
190	836.60	661	1880.00
251	848.80	810	1909.80

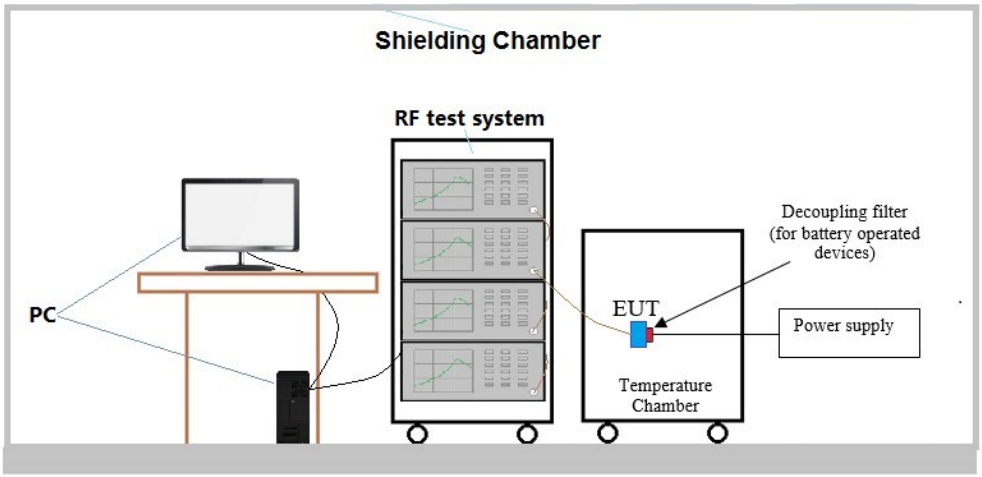
FDD Band II		FDD Band IV		FDD Band V	
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
9262	1852.4	1312	1712.4	4132	826.40
9400	1880.0	1413	1732.6	4182	836.60
9538	1907.6	1513	1752.6	4233	846.60

Exploratory testing was performed under each mode combination test channel; only the final measurement of the worst combination was made and recorded in this report.

Test case	Exploratory measurement		Final measurement Recorded In Report	
	Network	Link type	Network	Link type
RF Output Power	GSM GPSR EGRPS WCDMA WCDMA WCDMA	1 tx solt 1~4 tx solt 1~4 tx solt 12.2kbps RMC HSDPA subset 1~4 HSDPA subset 1~5	GSM GPSR EGRPS WCDMA WCDMA WCDMA	All modes
Effective Radiated Power			GSM GPSR EGRPS WCDMA WCDMA WCDMA	All modes
Peak-to-Average Ratio			GSM GPSR EGRPS WCDMA WCDMA WCDMA	1 tx solt 4 tx solt 4 tx solt 12.2kbps RMC HSDPA subset 1 HSDPA subset 1
99% & -26 dB Occupied Bandwidth			GSM GPSR EGRPS WCDMA WCDMA WCDMA	1 tx solt 1 tx solt 1 tx solt 12.2kbps RMC HSDPA subset 1 HSDPA subset 1
Out of band emission, Band Edge			GSM GPSR EGRPS WCDMA WCDMA WCDMA	1 tx solt 1 tx solt 1 tx solt 12.2kbps RMC HSDPA subset 1 HSDPA subset 1
Spurious Emissions at Antenna Terminal			GSM GPSR EGRPS WCDMA WCDMA WCDMA	1 tx solt 1 tx solt 1 tx solt 12.2kbps RMC HSDPA subset 1 HSDPA subset 1
Radiates Spurious Emission			GSM GPSR EGRPS WCDMA WCDMA WCDMA	1 tx solt 1 tx solt 1 tx solt 12.2kbps RMC HSDPA subset 1 HSDPA subset 1

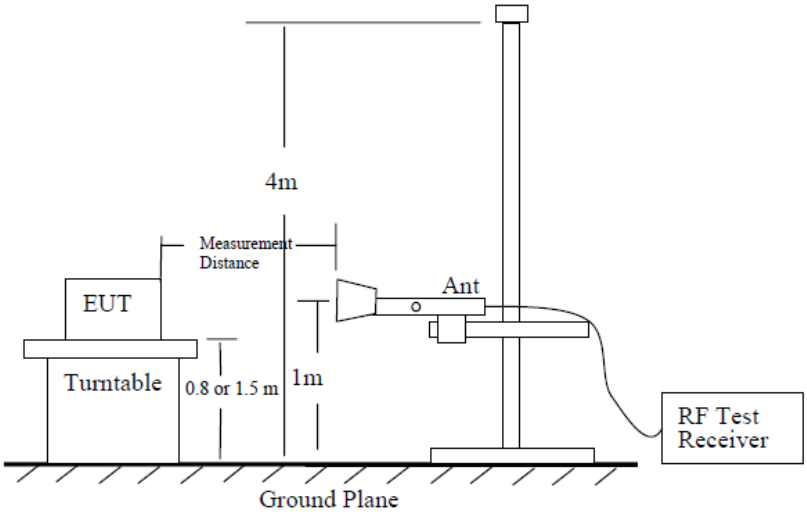
2.4 Test Setup and Conditions

2.4.1 Conducted Measurement Test Setup

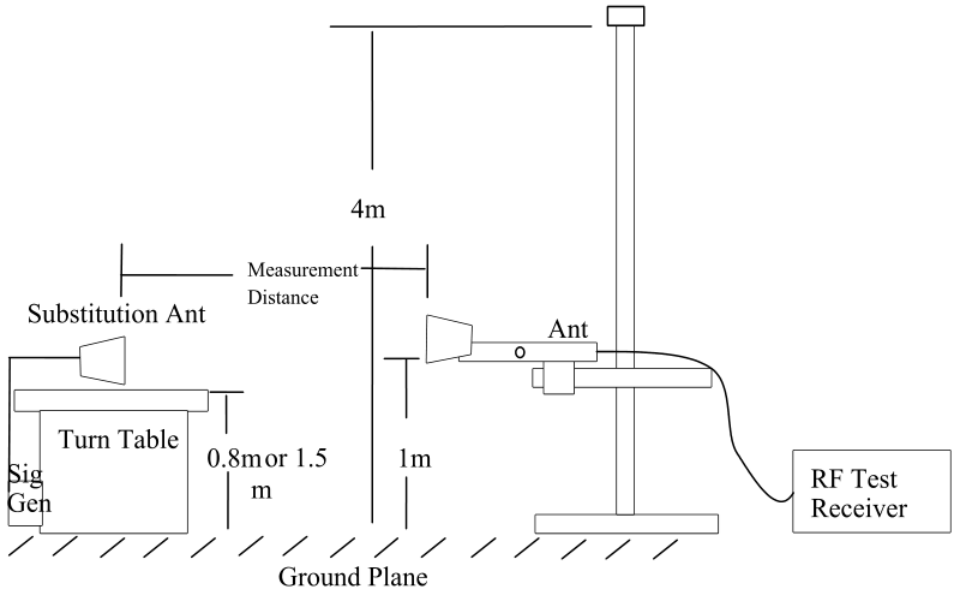


2.4.2 Radiated Measurement Test Setup

Step 1: Pre-test



Step 2: Substitution method to verify the maximum ERP/EIRP



2.5 Equipment List for the Test

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	EMI Measuring Receiver	R&S	ESR	101160	2024.09.25	2025.09.24
2	Spectrum Analyzer	R&S	FSV40	101470	2024.09.23	2025.09.22
3	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00282	2024.09.25	2025.09.24
4	Low Noise Pre Amplifier	SCHWARZBECK	BBV 9745	00283	2024.09.25	2025.09.24
5	Low Noise Pre Amplifier	CESHENG	CSKJLNA231016A	CSKJLNA231016A	2024.09.25	2025.09.24
6	Passive Loop	ETS	6512	00165355	2024.08.29	2027.08.28
7	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2027.08.28
8	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2027.08.28
9	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	453	2024.08.29	2027.08.28
10	Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA9170367	2024.08.28	2027.08.27
11	6dB Attenuator	JFW	50FPE-006	4360846-949-1	2024.09.24	2025.09.23
12	EMI Test Receiver	R&S	ESPI	100771	2024.09.25	2025.09.24
13	LISN	R&S	NNLK 8129	8130179	2024.09.24	2025.09.23
14	LISN	R&S	ESH3-Z5	892785/016	2024.09.23	2025.09.22
15	Pulse Limiter	R&S	ESH3-Z2	102789	2024.09.24	2025.09.23
16	RF Automatic Test system	TST	TSTPASS	21033016	2024.09.25	2025.09.24
17	Vector Signal Generator	Agilent	N5182A	MY50143009	2024.09.25	2025.09.24
18	Analog signal generator	Agilent	E8257	MY51554256	2024.09.25	2025.09.24
19	Spectrum Analyzer	Agilent	N9020A	MY51289843	2024.09.25	2025.09.24
20	Spectrum Analyzer	Agilent	N9020A	MY53421570	2024.09.25	2025.09.24
21	Power Sensor	Agilent	8481A	MY41097697	2024.09.25	2025.09.24
22	Wideband Radio communication tester	R&S	CMW500	1201.0002K50	2024.09.24	2025.09.23
23	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	2024.09.24	2025.09.23
24	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A
25	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A
26	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A
27	RF Software	cesheng	WCS-WCN	Version 2024.6.20	N/A	N/A
28	temporary antenna connector(Note)	NTS	R001	N/A	N/A	N/A
Note: The temporary antenna connector is soldered on the PCB board in order to perform conducted tests and this temporary antenna connector is listed in the equipment list.						

3 TEST CONDITIONS AND RESULTS

3.1 Output Power

LIMIT

GSM850/WCDMA Band V: 7W ERP
PCS1900/WCDMA Band II: 2W EIRP
WCDMA Band IV: 1W EIRP
The Peak-to-Average Ratio (PAR) of the transmission may not exceed 13 dB.

MEASUREMENT SETUP

Test set up as section 2.4.1& 2.4.2.

TEST PROCEDURE

The EUT was setup according to ANSI C63.26:2015

Conducted Power Measurement:

a) Place the EUT on a bench and set it in transmitting mode.

b) Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.

c) EUT Communicate with CMW500 then selects a channel for testing.

d) Add a correction factor to the display of spectrum, and then test.

Radiated Power Measurement:
Determining ERP and/or EIRP from conducted RF output power measurements according to ANSI C63.26 2015 Section 5.2.5.5.
In many cases, RF output power limits are specified in terms of the ERP or the EIRP. Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are defined as the product of the power supplied to the antenna and its gain (relative to a dipole antenna in the case of ERP, and relative to an isotropic antenna in the case of EIRP); however, when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).
The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

ERP or EIRP = PMeas + G_T
ERP= EIRP-2.15
where
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas}, e.g., dBm or dBW)
P_{Meas} measured transmitter output power or PSD, in dBm or dBW
G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

For devices utilizing multiple antennas, see 6.4 for guidance with respect to determining the effective array transmit antenna gain term to be used in the above equation.
The following equations demonstrate the mathematical relationship between ERP and EIRP:
a) ERP = EIRP − 2.15, where ERP and EIRP are expressed in consistent units.
b) EIRP = ERP + 2.15, where ERP and EIRP are expressed in consistent units.

TEST RESULTS

Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for GSM and WCDMA.

3.2 PEAK-TO-AVERAGE RATIO

LIMIT

The peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

MEASUREMENT SETUP

Test set up as section 2.4.1.

TEST PROCEDURE

For GSM

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest, middle, and highest channels for each band and different modulation.
5. Measure the maximum PK burst power and maximum Avg. burst power.
6. Calculate PAR by maximum PK burst power minus maximum Avg. burst power.

For WCDMA

CCDF Procedure for PAPR :

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Set the measurement interval as follows:
   -for continuous transmissions, set to 1 ms,
   -or burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
4. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for GSM and WCDMA.

3.3 Occupied Bandwidth

LIMIT

N/A

MEASUREMENT SETUP

Test set up as section 2.4.1.

TEST PROCEDURE

1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99%occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
2. RBW = 1 – 5% of the expected OBW
3. VBW ≥ 3 x RBW
4. Detector = Peak
5. Trace mode = max hold
6. Sweep = auto couple
7. The trace was allowed to stabilize
8. If necessary, steps 2 – 7 were repeated after changing the RBW such that it would be within 1 – 5% of the 99% occupied bandwidth observed in Step 7

TEST RESULTS

Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for GSM and WCDMA.

3.4 Band Edge compliance

LIMIT

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 + 10log (P) dB.

MEASUREMENT SETUP

Test set up as section 2.4.1.

TEST PROCEDURE

GSM:
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot

2. Span was set large enough so as to capture all out of band emissions near the band edge

3. RBW > 1% of the emission bandwidth = 10KHZ

4. VBW > 3 x RBW =30KHZ

5. Detector = RMS

6. Number of sweep points ≥ 2 x Span/RBW = 1001

7. Trace mode = trace average

8. Sweep time = 2ms

9. Sweep =Single

WCDMA:
1. Start and stop frequency were set such that the band edge would be placed in the center of the plot

2. Span was set large enough so as to capture all out of band emissions near the band edge

3. RBW > 1% of the emission bandwidth = 100KHZ

4. VBW > 3 x RBW =300KHZ

5. Detector = RMS

6. Number of sweep points ≥ 2 x Span/RBW = 1001

7. Trace mode = trace average

8. Sweep time = 1.01ms

9. Sweep =Single

TEST RESULTS

Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for GSM and WCDMA.

3.5 Spurious Emission

LIMIT

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 + 10log (P) dB.

MEASUREMENT SETUP

Test set up as section 2.4.1& 2.4.2.

TEST PROCEDURE

The EUT was setup according to ANSI C63.26:2015

Conducted Spurious Measurement:

Test Settings (GSM)

1. RBW = 1 MHz
2. VBW ≥ 3 MHz
3. Detector = RMS
4. Trace Mode = Trace average
5. Sweep time > (number of points in sweep) × (symbol period)
6. Number of points in sweep ≥ 2 x Span / RBW
7. Sweep =Single

Test Settings (WCDMA)

1. RBW = 1 MHz
2. VBW ≥ 3 MHz
3. Detector = RMS
4. Trace Mode = trace average
5. Sweep time > (number of points in sweep) × (symbol period)
6. Number of points in sweep ≥ 2 x Span / RBW
7. Sweep =Single

Radiated Spurious Measurement:

1. The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
3. The output of the test antenna shall be connected to the measuring receiver.
4. The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.

5. The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.

6. The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

7. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.

8. The maximum signal level detected by the measuring receiver shall be noted.

9. The transmitter shall be replaced by a substitution antenna.

10. The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.

11. The substitution antenna shall be connected to a calibrated signal generator.

12. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

13. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.

14. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.

15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

16. The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.

17. The frequency range need checked up to 10th harmonic.

Final measurement calculation as below:
The relevant equation for determining the ERP/EIRP from the radiated RF output power is:
ERP/EIRP (dBm) = SA Read Value (dBm) + Correction Factor (dB)
where:
ERP/EIRP = effective or equivalent radiated power, in dBm;
SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;
Correction Factor = total correction factor including cable loss, in dB;

TEST RESULTS

Conducted Measurement result:

Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for GSM and WCDMA.

Radiated Measurement:

GSM850

GSM 850: (30-9000)MHz							
The Worst Test Results Channel 128/824.2 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1649.00	-43.38	9.31	3.02	-37.09	-13.00	-24.09	H
2473.25	-47.10	10.40	3.96	-40.66	-13.00	-27.66	H
3296.55	-54.27	11.07	4.74	-47.94	-13.00	-34.94	H
1649.00	-42.92	9.31	3.02	**-36.63**	-13.00	-23.63	V
2473.25	-46.57	10.40	3.96	-40.13	-13.00	-27.13	V
3296.55	-53.59	11.07	4.74	-47.26	-13.00	-34.26	V
The Worst Test Results Channel 190/836.6 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1674.35	-44.77	9.49	3.07	-38.35	-13.00	-25.35	H
2509.60	-48.94	10.41	4.00	-42.53	-13.00	-29.53	H
3346.40	-49.42	11.24	4.81	-42.99	-13.00	-29.99	H
1674.35	-44.12	9.49	3.07	**-37.70**	-13.00	-24.70	V
2509.60	-48.28	10.41	4.00	-41.87	-13.00	-28.87	V
3346.40	-48.47	11.24	4.81	-42.04	-13.00	-29.04	V
The Worst Test Results Channel 251/848.8 MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1698.05	-44.29	9.66	3.11	-37.74	-13.00	-24.74	H
2546.80	-45.87	10.41	4.04	-39.50	-13.00	-26.50	H
3395.40	-50.63	11.41	4.88	-44.10	-13.00	-31.10	H
1698.05	-43.78	9.66	3.11	**-37.23**	-13.00	-24.23	V
2546.80	-45.59	10.41	4.04	-39.22	-13.00	-26.22	V
3395.40	-49.67	11.41	4.88	-43.14	-13.00	-30.14	V

PCS1900

PCS 1900: (30-20000)MHz							
The Worst Test Results for Channel 512/1850.2MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3701.20	-44.19	11.63	5.22	-37.78	-13.00	-24.78	H
5550.95	-44.79	12.19	6.34	-38.94	-13.00	-25.94	H
7400.30	-47.04	11.12	7.58	-43.50	-13.00	-30.50	H
3701.20	-43.53	11.63	5.22	**-37.12**	-13.00	-24.12	V
5550.95	-43.85	12.19	6.34	-38.00	-13.00	-25.00	V
7400.30	-46.05	11.12	7.58	-42.51	-13.00	-29.51	V
The Worst Test Results for Channel 661/1880.0MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3760.30	-43.90	11.55	5.29	-37.64	-13.00	-24.64	H
5639.85	-45.01	12.11	6.34	-39.24	-13.00	-26.24	H
7519.85	-50.49	11.35	7.64	-46.78	-13.00	-33.78	H
3760.30	-43.75	11.55	5.29	**-37.49**	-13.00	-24.49	V
5639.85	-44.29	12.11	6.34	-38.52	-13.00	-25.52	V
7519.85	-49.56	11.35	7.64	-45.85	-13.00	-32.85	V
The Worst Test Results for Channel 810/1909.8MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3820.00	-42.41	11.48	5.33	-36.26	-13.00	-23.26	H
5729.95	-48.13	11.93	6.36	-42.56	-13.00	-29.56	H
7639.40	-48.61	11.43	7.69	-44.87	-13.00	-31.87	H
3820.00	-42.30	11.48	5.33	**-36.15**	-13.00	-23.15	V
5729.95	-47.52	11.93	6.36	-41.95	-13.00	-28.95	V
7639.40	-48.58	11.43	7.69	-44.84	-13.00	-31.84	V

WCDMA Band II

WCDMA Band 2: (30-20000)MHz							
The Worst Test Results for Channel 9262/1852.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3704.55	-41.01	11.63	5.22	-34.60	-13.00	-21.60	H
5558.50	-47.84	12.19	6.34	-41.99	-13.00	-28.99	H
7410.00	-45.34	11.14	7.58	-41.78	-13.00	-28.78	H
3704.55	-40.16	11.63	5.22	**-33.75**	-13.00	-20.75	V
5558.50	-46.81	12.19	6.34	-40.96	-13.00	-27.96	V
7410.00	-44.71	11.14	7.58	-41.15	-13.00	-28.15	V
The Worst Test Results for Channel 9400/1880MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3759.60	-43.79	11.55	5.29	-37.53	-13.00	-24.53	H
5639.95	-47.39	12.11	6.34	-41.62	-13.00	-28.62	H
7520.75	-49.99	11.35	7.64	-46.28	-13.00	-33.28	H
3759.60	-42.78	11.55	5.29	**-36.52**	-13.00	-23.52	V
5639.95	-47.35	12.11	6.34	-41.58	-13.00	-28.58	V
7520.75	-49.50	11.35	7.64	-45.79	-13.00	-32.79	V
The Worst Test Results for Channel 9538/1907.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3815.70	-42.36	11.49	5.33	-36.20	-13.00	-23.20	H
5722.45	-45.91	11.95	6.36	-40.32	-13.00	-27.32	H
7630.40	-46.73	11.43	7.69	-42.99	-13.00	-29.99	H
3815.70	-41.53	11.49	5.33	**-35.37**	-13.00	-22.37	V
5722.45	-45.18	11.95	6.36	-39.59	-13.00	-26.59	V
7630.40	-45.64	11.43	7.69	-41.90	-13.00	-28.90	V

WCDMA Band IV

WCDMA Band 4: (30-18000)MHz							
The Worst Test Results for Channel 1312/1712.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3424.40	-43.79	11.48	4.90	-37.21	-13.00	-24.21	H
5137.65	-45.02	11.42	5.72	-39.32	-13.00	-26.32	H
6850.25	-45.87	11.06	6.89	-41.70	-13.00	-28.70	H
3424.40	-43.09	11.48	4.90	**-36.51**	-13.00	-23.51	V
5137.65	-44.98	11.42	5.72	-39.28	-13.00	-26.28	V
6850.25	-44.93	11.06	6.89	-40.76	-13.00	-27.76	V
The Worst Test Results for Channel 1450/1740.0MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3479.50	-44.00	11.61	4.94	-37.33	-13.00	-24.33	H
5219.40	-47.83	11.61	5.90	-42.12	-13.00	-29.12	H
6959.85	-47.13	11.06	6.94	-43.01	-13.00	-30.01	H
3479.50	-43.21	11.61	4.94	**-36.54**	-13.00	-23.54	V
5219.40	-47.58	11.61	5.90	-41.87	-13.00	-28.87	V
6959.85	-46.09	11.06	6.94	-41.97	-13.00	-28.97	V
The Worst Test Results for Channel 1513/1752.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3506.00	-43.66	11.66	4.96	-36.96	-13.00	-23.96	H
5257.60	-46.88	11.71	5.92	-41.09	-13.00	-28.09	H
7010.55	-47.01	11.03	6.97	-42.95	-13.00	-29.95	H
3506.00	-43.01	11.66	4.96	**-36.31**	-13.00	-23.31	V
5257.60	-46.31	11.71	5.92	-40.52	-13.00	-27.52	V
7010.55	-46.73	11.03	6.97	-42.67	-13.00	-29.67	V

WCDMA Band V

WCDMA Band 5: (30-9000)MHz							
The worst test results channel 4132/826.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1652.35	-41.98	9.33	3.02	-35.67	-13.00	-22.67	H
2480.70	-46.70	10.40	3.97	-40.27	-13.00	-27.27	H
3305.30	-49.46	11.10	4.75	-43.11	-13.00	-30.11	H
1652.35	-41.12	9.33	3.02	**-34.81**	-13.00	-21.81	V
2480.70	-45.83	10.40	3.97	-39.40	-13.00	-26.40	V
3305.30	-48.96	11.10	4.75	-42.61	-13.00	-29.61	V
The Worst Test Results Channel 4182/836.4MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1673.15	-43.46	9.48	3.06	-37.04	-13.00	-24.04	H
2510.75	-47.49	10.41	4.01	-41.09	-13.00	-28.09	H
3346.30	-49.65	11.24	4.81	-43.22	-13.00	-30.22	H
1673.15	-43.44	9.48	3.06	**-37.02**	-13.00	-24.02	V
2510.75	-47.45	10.41	4.01	-41.05	-13.00	-28.05	V
3346.30	-49.42	11.24	4.81	-42.99	-13.00	-29.99	V
The Worst Test Results Channel 4233/846.6MHz							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1693.60	-44.73	9.63	3.10	-38.20	-13.00	-25.20	H
2539.70	-46.67	10.41	4.03	-40.29	-13.00	-27.29	H
3387.65	-49.51	11.38	4.87	-43.00	-13.00	-30.00	H
1693.60	-44.31	9.63	3.10	**-37.78**	-13.00	-24.78	V
2539.70	-46.54	10.41	4.03	-40.16	-13.00	-27.16	V
3387.65	-49.23	11.38	4.87	-42.72	-13.00	-29.72	V

Remark:

1. PMea = S G.Lev + Ant - Loss
2. Margin = PMea – Limit
3. *Other emission levels are attenuated 20dB below the limit and not recorded in report.*

3.6 Frequency Stability under Temperature & Voltage Variations

LIMIT

FCC: Cellular Band: ±2.5ppm PCS Band: Within the authorized frequency block

TEST CONFIGURATION

Test set up as section 2.4.1.

TEST PROCEDURE

The EUT was setup according to ANSI C63.26:2015

Frequency Stability under Temperature Variations:
The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20℃ operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30℃. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10℃ increased per stage until the highest temperature of +50℃ reached.

Frequency Stability under Voltage Variations:
Set chamber temperature to 20℃. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.
Reduce the input voltage to specify extreme voltage variation (±15%) and endpoint, record the maximum frequency change.

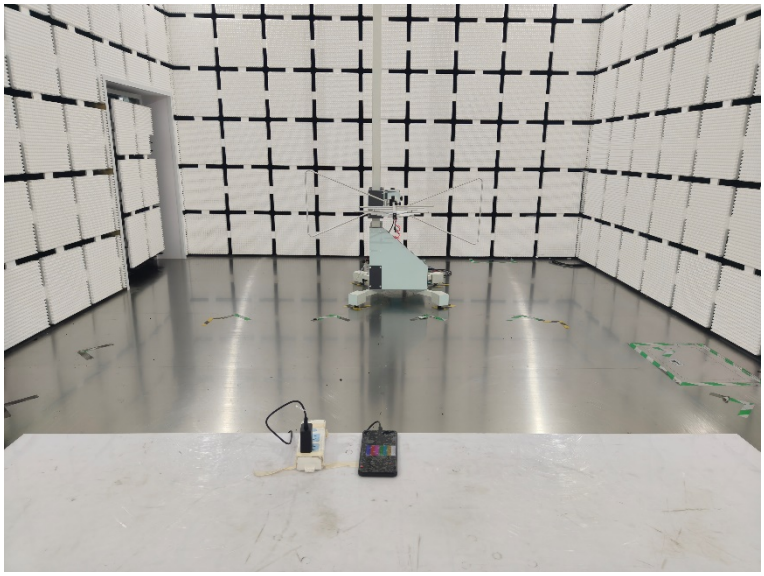
TEST RESULTS

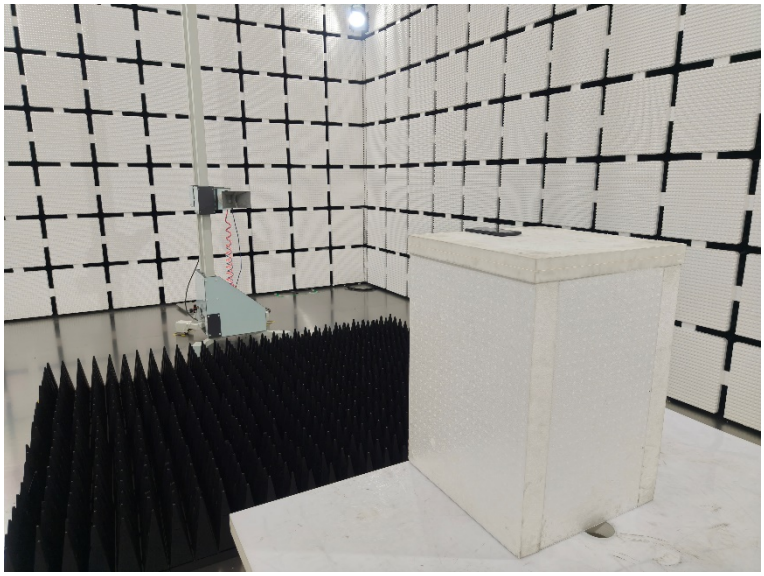
Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for GSM and WCDMA.

4 Test Setup Photographs of EUT





5 Photos of EUT

Please refer to test Report No.: AiTSZ-250313052FW1.

********** **End of Report** **********