TEST REPORT

Product Name	:	Tablet pc
Brand Name	:	Leaderhub 会参谋 / KEP
Model	:	S21
Series Model	:	See page 6
FCC ID	:	2BLLU-S21
Applicant	:	**Shenzhen KEP Technology CO., LTD**
Address	:	No. 109, Reservoir Road, Fenghuanggang Community, Xixiang Street, Baoan District, Shenzhen
Manufacturer	:	**Shenzhen KEP Technology CO., LTD**
Address	:	No. 109, Reservoir Road, Fenghuanggang Community, Xixiang Street, Baoan District, Shenzhen
Standard(s)	:	FCC CFR Title 47 Part 2, Part 22H, Part 24E, and Part 27 ANSI C63.26:2015 KDB 971168 D01
Date of Receipt	:	Sep. 30, 2024
Date of Test	:	Oct. 08, 2024~ Oct. 24, 2024
Issued Date	:	Oct. 25, 2024

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	Oct. 25, 2024	Initial Release

Contents

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

Part 27: MISCELLANEOUS WIRELESS COMMUNICATIONS 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

Band2 (1850-1910MHz paired with 1930-1990MHz)

Test Item	FCC Rule No.	Requirements	Verdict (Note1)
Effective (Isotropic) Radiated Power Output Data	Part 2.1046, 24.232	EIRP ≤ 2 W	Pass
Peak-Average Ratio	Part 2.1046, 24.232	Limit≤13 dB	Pass
Bandwidth	Part 2.1049	OBW: No limit. EBW: No limit.	Pass
Band Edges Compliance	Part 2.1051, 24.238	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Pass
Spurious Emission at Antenna Terminals	Part 2.1051, 24.238	≤ -13 dBm/1 MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass
Field Strength of Spurious Radiation	Part 2.1053, 24.238	≤ -13 dBm/1 MHz.	Pass
Frequency Stability	Part 2.1055, 24.235	≤ ± 2.5 ppm.	Pass
Note1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.			

Band4 (1710-1755MHz paired with 2110-2155MHz)

Test Item	FCC Rule No.	Requirements	Verdict (Note1)
Effective(Isotropic) Radiated Power Output Data	Part 2.1046, 27.50(d)	EIRP ≤ 1W	Pass
Peak-Average Ratio	Part 2.1046, 27.50(d)	Limit≤13 dB	Pass
Bandwidth	Part 2.1049	OBW:No limit. EBW:No limit.	Pass
Band Edges Compliance	Part 2.1051, 27.53(h)	≤ -13 dBm/1%*EBW,in1MHz bands immediately outside and adjacent to the frequency block.	Pass
Spurious Emission at Antenna Terminals	Part 2.1051, 27.53(h)	≤ -13 dBm/1MHz,from9 kHz to 10th harmonics but out sideathorized operating frequency ranges.	Pass
Field Strength of Spurious Radiation	Part 2.1053, 27.53(h)	≤ -13 dBm/1MHz.	Pass
Frequency Stability	Part 2.1055, 27.54	≤ ±2.5ppm.	Pass
Note1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.			

Band5 (824-849MHz paired with 869-894MHz)

Test Item	FCC Rule No.	Requirements	Verdict (Note1)
Effective(Isotropic) Radiated Power Output Data	Part 2.1046, 22.913(a)	EIRP ≤ 1W	Pass
Peak-Average Ratio	--	Limit≤13 dB	Pass
Bandwidth	Part 2.1049	OBW:No limit. EBW:No limit.	Pass
Band Edges Compliance	Part 2.1051, 22.917(a)	≤ -13 dBm/1%*EBW,in1MHz bands immediately outside and adjacent to the frequency block.	Pass
Spurious Emission at Antenna Terminals	Part 2.1051, 22.917(a)	≤ -13 dBm/1MHz,from9 kHz to 10th harmonics but out sideathorized operating frequency ranges.	Pass
Field Strength of Spurious Radiation	Part 2.1051, 22.917(a)	≤ -13 dBm/1MHz.	Pass
Frequency Stability	Part 2.1055, 22.355	≤ ±2.5ppm.	Pass
Note1: For the verdict, the “N/A” denotes “not applicable”, the “N/T” denotes “not tested”.			

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	150KHz~30MHz ±1.20 dB	(1)
Radiated Emission	9KHz~30Hz ±3.10dB	(1)
Radiated Emission	9KHz~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 GENGENERAL 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:	Tablet pc
Model/Type reference:	S21
Serial Model:	S80, S18, S18C, S19, S19B, S20, S22, S23, M80, M18, M19, M20, M21, M22, M23, 101A, L80, L18, L19, L20, L21, L22, L23, L25
Power Supply:	DC 3.85V from battery
Adapter Information:	Model: C29D-030-00US Input: 100-240V~50/60Hz 0.8A Max Output: 5.0V⎓3.0A,9.0V⎓3.0A, 12.0V⎓2.5A
Hardware Version:	N/A
Software Version:	N/A
Sample(s) Status:	AiTSZ-240930017-1(Normal sample) AiTSZ-240930017-2(Engineer sample)
LTE:	
Operation Band:	FDD-LTE: Band 2/4/5
Support Bandwidth:	Band 2: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz,☑15MHz,☑20MHz Band 4: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz,☑15MHz,☑20MHz Band 5: ☑1.4MHz,☑3MHz,☑5MHz,☑10MHz
Frequency Range:	Band 2:uplink 1850MHz to 1910MHz; downlink 1930MHz to 1990MHz Band 4:uplink 1710MHz to 1755MHz; downlink 2110MHz to 2155MHz Band 5:uplink 824MHz to 849MHz; downlink 869MHz to 894MHz
Power Class:	Power Class 3
Modulation Type:	QPSK, 16QAM
Antenna type:	PIFA Antenna
Antenna gain:	LTE Band 2: 2.5dBi; LTE Band 4: 2.8dBi; LTE Band 5: -2.5dBi
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:

Band 2

Test Frequency ID	Bandwidth [MHz]	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
Low Range	1.4	18607	1850.7	607	1930.7
	3	18615	1851.5	615	1931.5
	5	18625	1852.5	625	1932.5
	10	18650	1855	650	1935
	15	18675	1857.5	675	1937.5
	20	18700	1860	700	1940
Mid Range	1.4/3/5/10/15/20	18900	1880	900	1960
High Range	1.4	19193	1909.3	1193	1989.3
	3	19185	1908.5	1185	1988.5
	5	19175	1907.5	1175	1987.5
	10	19150	1905	1150	1985
	15	19125	1902.5	1125	1982.5
	20	19100	1900	1100	1980

Band 4

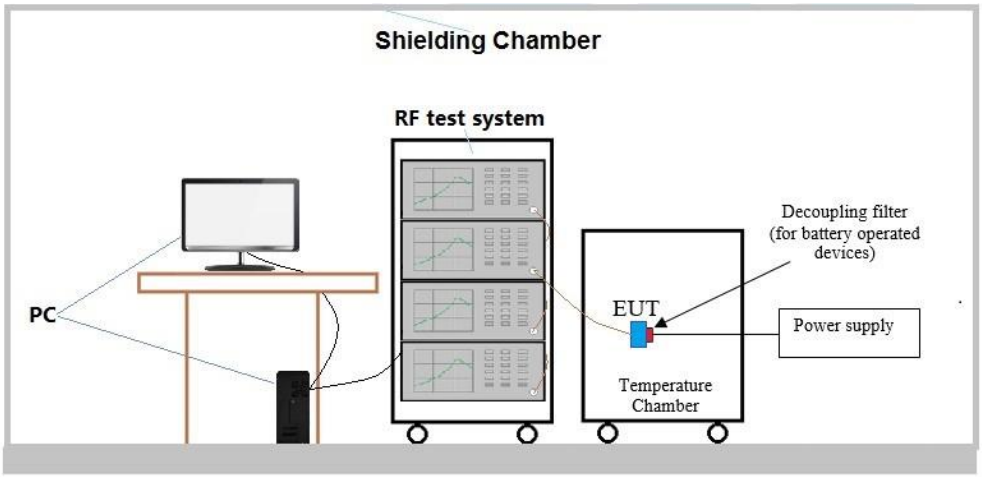
Test Frequency ID	Bandwidth [MHz]	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
Low Range	1.4	19957	1710.7	1957	2110.7
	3	19965	1711.5	1965	2111.5
	5	19975	1712.5	1975	2112.5
	10	20000	1715	2000	2115
	15	20025	1717.5	2025	2117.5
	20	20050	1720	2050	2120
Mid Range	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
High Range	1.4	20393	1754.3	2393	2154.3
	3	20385	1753.5	2385	2153.5
	5	20375	1752.5	2375	2152.5
	10	20350	1750	2350	2150
	15	20325	1747.5	2325	2147.5
	20	20300	1745	2300	2145

Band 5

Test Frequency ID	Bandwidth [MHz]	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
Low Range	1.4	20407	824.7	2407	869.7
	3	20415	825.5	2415	870.5
	5	20425	826.5	2425	871.5
	10	20450	829	2450	874
Mid Range	1.4/3/5/10	20525	836.5	2525	881.5
High Range	1.4	20643	848.3	2643	893.3
	3	20635	847.5	2635	892.5
	5	20625	846.5	2625	891.5
	10	20700	835	2700	880

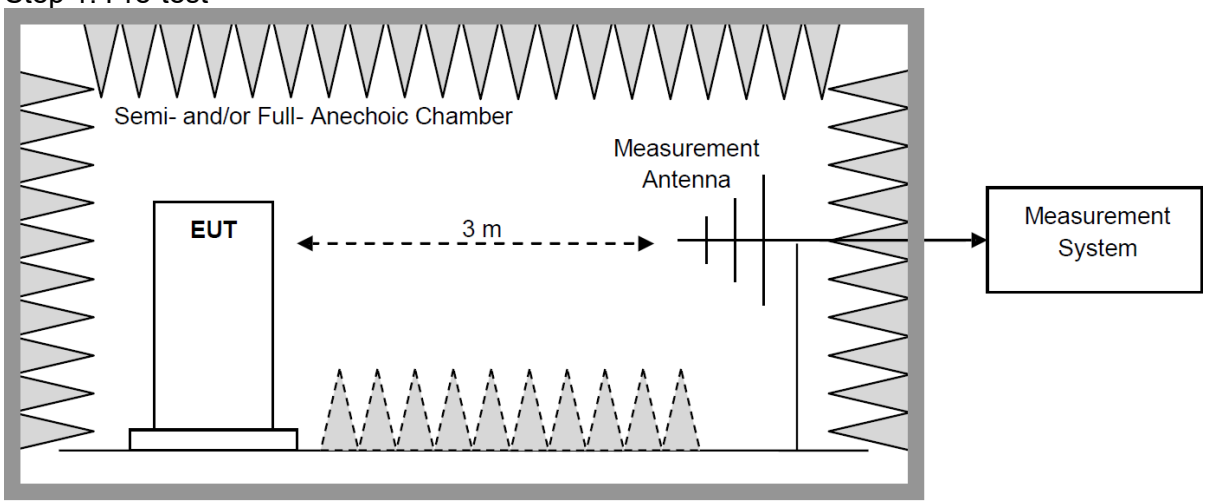
2.4 Test Setup and Conditions

2.4.1 Conducted Measurement Test Setup

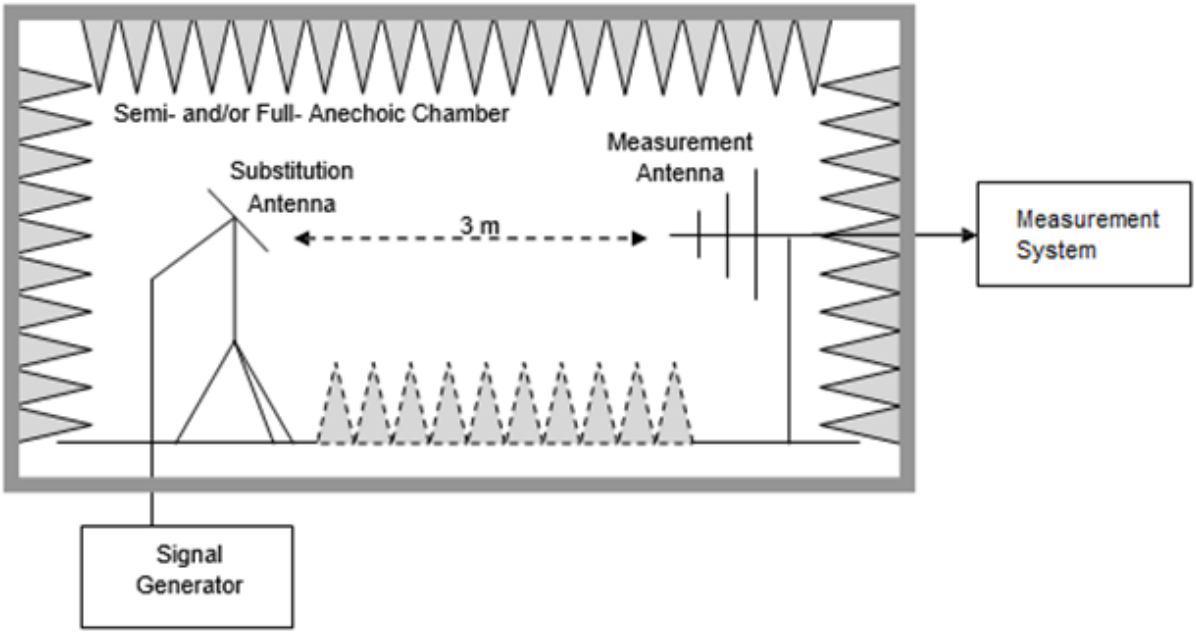


2.4.2 Radiated Measurement Test Setup

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	CESHENG	CSKJLNA231016A	CSKJLNA231016A	2024.09.25	2025.09.24
5	Passive Loop	ETS	6512	00165355	2024.08.29	2027.08.28
6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9168	01434	2024.08.29	2027.08.28
7	Broadband Horn Antenna	Schwarzbeck	BBHA 9120D	452	2024.08.29	2027.08.28
8	Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA9170367	2024.08.28	2027.08.27
9	6dB Attenuator	JFW	50FPE-006	4360846-949-1	2024.09.24	2025.09.23
10	EMI Test Receiver	R&S	ESPI	100771	2024.09.25	2025.09.24
11	LISN	R&S	NNLK 8129	8130179	2024.09.24	2025.09.23
12	LISN	R&S	ESH3-Z5	892785/016	2024.09.23	2025.09.22
13	Pulse Limiter	R&S	ESH3-Z2	102789	2024.09.24	2025.09.23
14	RF Automatic Test system	TST	TSTPASS	21033016	2024.09.25	2025.09.24
15	Vector Signal Generator	Agilent	N5182A	MY50143009	2024.09.25	2025.09.24
16	Analog signal generator	Agilent	E8257	MY51554256	2024.09.25	2025.09.24
17	Spectrum Analyzer	Agilent	N9020A	MY51289843	2024.09.25	2025.09.24
18	Spectrum Analyzer	Agilent	N9020A	MY53421570	2024.09.25	2025.09.24
19	Power Sensor	Agilent	8481A	MY41097697	2024.09.25	2025.09.24
20	Wideband Radio communication tester	R&S	CMW500	1201.0002K50	2024.09.24	2025.09.23
21	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	N/A	N/A
22	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A
23	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A
24	RF Software	TST	TSTPASS	Version 2.0	N/A	N/A
25	RF Software	cesheng	WCS-WCN	Version 2024.6.20	N/A	N/A
26	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

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 LTE.

3.2 PEAK-TO-AVERAGE RATIO

MEASUREMENT SETUP

Test set up as section 2.4.1.

TEST PROCEDURE

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 LTE.

3.3 Occupied Bandwidth

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 LTE.

3.4 Band Edge compliance

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

7. Trace mode = trace average

8. Sweep time = (number of points in sweep) × (symbol period)

9. Sweep =Single

TEST RESULTS

Passed

☒ **Pass** ☐ **Not Applicable**

Note:
For test data, please refer to Appendix RF test data for LTE.

3.5 Spurious Emission

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:

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 LTE.

Radiated Measurement:

LTE Band 2 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3701.50	-42.02	11.63	5.22	-35.61	-13.00	-22.61	H
5553.30	-48.72	12.19	6.34	-42.87	-13.00	-29.87	H
7403.00	-51.22	11.12	7.58	-47.68	-13.00	-34.68	H
3701.50	-41.17	11.63	5.22	**-34.76**	-13.00	-21.76	V
5553.30	-48.41	12.19	6.34	-42.56	-13.00	-29.56	V
7403.00	-50.56	11.12	7.58	-47.02	-13.00	-34.02	V
LTE Band 2 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3760.00	-45.19	11.55	5.29	-38.93	-13.00	-25.93	H
5640.00	-45.30	12.1	6.34	-39.54	-13.00	-26.54	H
7519.75	-47.95	11.35	7.64	-44.24	-13.00	-31.24	H
3760.00	-44.63	11.55	5.29	**-38.37**	-13.00	-25.37	V
5640.00	-44.37	12.1	6.34	-38.61	-13.00	-25.61	V
7519.75	-46.76	11.35	7.64	-43.05	-13.00	-30.05	V
LTE Band 2 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3818.85	-44.94	11.48	5.33	-38.79	-13.00	-25.79	H
5728.45	-44.82	11.94	6.36	-39.24	-13.00	-26.24	H
7638.25	-47.99	11.43	7.69	-44.25	-13.00	-31.25	H
3818.85	-44.33	11.48	5.33	**-38.18**	-13.00	-25.18	V
5728.45	-44.74	11.94	6.36	-39.16	-13.00	-26.16	V
7638.25	-47.79	11.43	7.69	-44.05	-13.00	-31.05	V

LTE Band 4 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3422.20	-41.73	11.48	4.9	-35.15	-13.00	-22.15	H
5132.25	-47.12	11.41	5.71	-41.42	-13.00	-28.42	H
6843.70	-52.08	11.06	6.89	-47.91	-13.00	-34.91	H
3422.20	-40.62	11.48	4.9	**-34.04**	-13.00	-21.04	V
5132.25	-46.40	11.41	5.71	-40.70	-13.00	-27.70	V
6843.70	-51.37	11.06	6.89	-47.20	-13.00	-34.20	V
LTE Band 4 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3464.35	-43.86	11.57	4.93	-37.22	-13.00	-24.22	H
5198.05	-47.99	11.55	5.88	-42.32	-13.00	-29.32	H
6930.00	-49.95	11.07	6.93	-45.81	-13.00	-32.81	H
3464.35	-43.28	11.57	4.93	**-36.64**	-13.00	-23.64	V
5198.05	-46.99	11.55	5.88	-41.32	-13.00	-28.32	V
6930.00	-48.96	11.07	6.93	-44.82	-13.00	-31.82	V
LTE Band 4 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
3509.00	-43.72	11.66	4.96	-37.02	-13.00	-24.02	H
5263.00	-45.56	11.73	5.92	-39.75	-13.00	-26.75	H
7018.35	-49.35	11.01	6.99	-45.33	-13.00	-32.33	H
3509.00	-42.72	11.66	4.96	**-36.02**	-13.00	-23.02	V
5263.00	-45.22	11.73	5.92	-39.41	-13.00	-26.41	V
7018.35	-48.22	11.01	6.99	-44.20	-13.00	-31.20	V

LTE Band 5 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Lowest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1649.60	-44.89	9.31	3.02	-38.60	-13.00	-25.60	H
2475.00	-49.30	10.4	3.96	-42.86	-13.00	-29.86	H
3299.40	-52.37	11.08	4.74	-46.03	-13.00	-33.03	H
1649.60	-44.59	9.31	3.02	**-38.30**	-13.00	-25.30	V
2475.00	-48.58	10.4	3.96	-42.14	-13.00	-29.14	V
3299.40	-52.08	11.08	4.74	-45.74	-13.00	-32.74	V
LTE Band 5 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Middle							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1672.30	-45.37	9.48	3.06	-38.95	-13.00	-25.95	H
2510.15	-47.27	10.41	4.01	-40.87	-13.00	-27.87	H
3346.60	-53.95	11.24	4.81	-47.52	-13.00	-34.52	H
1672.30	-44.97	9.48	3.06	**-38.55**	-13.00	-25.55	V
2510.15	-46.25	10.41	4.01	-39.85	-13.00	-26.85	V
3346.60	-53.73	11.24	4.81	-47.30	-13.00	-34.30	V
LTE Band 5 / 1.4MHz / QPSK / RB Size 1 Offset 0/ The Worst Test Results for Highest							
Frequency(MHz)	S G.Lev (dBm)	Ant(dBi)	Loss	PMea (dBm)	Limit （dBm）	Margin (dBm)	Polarity
1696.40	-46.19	9.65	3.11	-39.65	-13.00	-26.65	H
2544.65	-46.50	10.41	4.04	-40.13	-13.00	-27.13	H
3393.65	-53.72	11.4	4.88	-47.20	-13.00	-34.20	H
1696.40	-45.68	9.65	3.11	**-39.14**	-13.00	-26.14	V
2544.65	-45.97	10.41	4.04	-39.60	-13.00	-26.60	V
3393.65	-53.26	11.4	4.88	-46.74	-13.00	-33.74	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

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 LTE.

4 Test Setup Photographs of EUT

Please refer to separated files for Test Setup Photos of the EUT.

5 External Photographs of EUT

Please refer to separated files for External Photos of the EUT.

6 Internal Photographs of EUT

Please refer to separated files for Internal Photos of the EUT.

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