RF TEST REPORT

Product Name	:	Tablet PC
Brand Name	:	Blackview
Test Model	:	Active 8
Series Model	:	N/A
Applicant	:	DOKE COMMUNICATION (HK) LIMITED
Address	:	RM 1902 EASEY COMM BLDG 253-261 HENNESSY ROAD WANCHAI HK CHINA
Manufacturer	:	Shenzhen DOKE Electronic Co., Ltd
Address	:	801, Building3, 7th Industrial Zone, Yulv Community, Yutang Road, Guangming District, Shenzhen, China
Date of Receipt	:	2023.05.25
Date of Test	:	2023.05.25-2023.06.13
Issued Date	:	2023.06.14
Report Version	:	V1.0
Test Sample	:	Engineering Sample No.: AIT23052502-1
Standard(s)	:	ETSI EN 301 908-1 V15.1.1: 2021-09 ETSI EN 301 908-13 V13.2.1:2022-02

Lab: Dongguan Yaxu (AiT) Technology Limited
Add: No.22, Jinqianling 3rd Street, Jitigang, Huangjiang,Dongguan, Guangdong, China
Tel.: +86-769-8202 0499 Fax.: +86-769-8202 0495

This device has been tested and found to comply with the stated standard(s), which is (are) required by the council directive of 2014/53/EU and indicated in the test report and are applicable only to the tested sample identified in the report.

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Reviewed by: Simba Huang
Simba huang

Approved by: Seal Chen
Seal Chen

REPORT REVISE RECORD

Report Version	Revise Time	Issued Date	Valid Version	Notes
V1.0	/	2023.06.14	Valid	Initial Release

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1. GENERAL INFORMATION

1.1 PRODUCT TECHNICAL DESCRIPTION

Details of technical specification refer to the description in follows:

EUT Name:	Tablet PC			
Model No:	Active 8			
Serial Model:	N/A			
Difference Description	N/A			
Brand Name:	Blackview			
Power Supply	DC 3.87V 22000mAh for Battery			
LTE Information:				
Frequency Band	☒ FDD Band 1 ☒ FDD Band 3 ☒ FDD Band 7 ☒ FDD Band 8 ☒ FDD Band 20 ☐ FDD Band 28 ☐ TDD Band 34 ☐ TDD Band 38 ☐ TDD Band 40 ☐ TDD Band 41 ☐ TDD Band 43 (EU Bands) ☐ FDD Band 2 ☐ FDD Band 4 ☐ FDD Band 5 ☐ FDD Band 17 ☐ FDD Band 25 ☐ FDD Band 26 ☐ TDD Band 41 (Non-EU Bands)			
Operation Frequency Range		Uplink	Downlink	
	FDD Band 1	1920MHz~1980MHz	2110MHz~2170MHz	
	FDD Band 3	1710MHz~1785MHz	1805MHz~1880MHz	
	FDD Band 7	2500MHz~2570MHz	2620MHz~2690MHz	
	FDD Band 8	880MHz~915MHz	925MHz~960MHz	
	FDD Band 20	832MHz~862MHz	791MHz~821MHz	
Support bandwidth	FDD Band 1	☐ 1.4MHz ☐ 3MHz ☒ 5MHz ☒ 10MHz ☒ 15MHz ☒ 20MHz		
	FDD Band 3	☒ 1.4MHz ☒ 3MHz ☒ 5MHz ☒ 10MHz ☒ 15MHz ☒ 20MHz		
	FDD Band 7	☐ 1.4MHz ☐ 3MHz ☒ 5MHz ☒ 10MHz ☒ 15MHz ☐ 20MHz		
	FDD Band 8	☒ 1.4MHz ☒ 3MHz ☒ 5MHz ☒ 10MHz ☐ 15MHz ☐ 20MHz		
	FDD Band 20	☐ 1.4MHz ☐ 3MHz ☒ 5MHz ☒ 10MHz ☒ 15MHz ☒ 20MHz		
Modulation Type	☒ QPSK ☒ 16QAM ☐ 64QAM			
Power Class	☐ Class 1 ☐ Class 2 ☒ Class 3 ☐ Class 4			
GSM Release Version	R99			

WCDMA Release Version	Release 6 and later			
Antenna Type	FPC Antenna			
Main Antenna Gain	Band 1:-0.60dBi	Band 3:-0.70dBi	Band 7:0.20dBi	Band 8:-1.80dBi
	Band 20:-2.50dBi			
Diversity Antenna Gain	--	--	--	--
	--	--	--	--
SIM Card Description	There are dual-SIM cards			
Diversity Antenna Description	Diversity antenna is only used to receive. Its purpose is to increase sensitivity of LTE. The receiver items test results in the report already contain the diversity antenna test.			

Note:

1. The above information was declared by the manufacturer.
2. The equipment submitted representative production models.
3. For more details, please refer to the User's manual of the EUT.

1.2. DESCRIPTION OF TEST MODES AND TEST FREQUENCY

The EUT has been tested under typical operating condition. UNIVERSAL RADIO COMMUNICATION tester controls the EUT staying in continuous transmitting and receiving mode for testing

FDD Band 1:

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	18025	1922.5	25	2112.5
	10	18050	1925	50	2115
	15	18075	1927.5	75	2117.5
	20	18100	1930	100	2120
Mid Range	5/10/15/20	18300	1950	300	2140
High Range	5	18575	1977.5	575	2167.5
	10	18550	1975	550	2165
	15	18525	1972.5	525	2162.5
	20	18500	1970	500	2160

FDD Band 3:

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	19207	1710.7	1207	1805.7
	3	19215	1711.5	1215	1806.5
	5	19225	1712.5	1225	1807.5
	10	19250	1715	1250	1810
	15 [1]	19275	1717.5	1275	1812.5
	20 [1]	19300	1720	1300	1815
Mid Range	1.4/3/5/10 15 [1]/20 [1]	19575	1747.5	1575	1842.5
High Range	1.4	19943	1784.3	1943	1879.3
	3	19935	1783.5	1935	1878.5
	5	19925	1782.5	1925	1877.5
	10	19900	1780	1900	1875
	15 [1]	19875	1777.5	1875	1872.5
	20 [1]	19850	1775	1850	1870

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 7:

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	20775	2502.5	2775	2622.5
	10	20800	2505	2800	2625
	15	20825	2507.5	2825	2627.5
	20 [1]	20850	2510	2850	2630
Mid Range	5/10/15 20 [1]	21100	2535	3100	2655
High Range	5	21425	2567.5	3425	2687.5
	10	21400	2565	3400	2685
	15	21375	2562.5	3375	2682.5
	20 [1]	21350	2560	3350	2680

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 8:

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	1.4	21457	880.7	3457	925.7
	3	21465	881.5	3465	926.5
	5	21475	882.5	3475	927.5
	10 [1]	21500	885	3500	930
Mid Range	1.4/3/5 10 [1]	21625	897.5	3625	942.5
High Range	1.4	21793	914.3	3793	959.3
	3	21785	913.5	3785	958.5
	5	21775	912.5	3775	957.5
	10 [1]	21750	910	3750	955

NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.

FDD Band 20:

Test Frequency ID	Bandwidth [MHz]	N_{UL}	Frequency of Uplink [MHz]	N_{DL}	Frequency of Downlink [MHz]
Low Range	5	24175	834.5	6175	793.5
	10[1]	24200	837	6200	796
	15[1]	24225	839.5	6225	798.5
	20[1]	24250	842	6250	801
Mid Range	5/10[1]/15[1]/20[1]	24300	847	6300	806
High range	5	24425	859.5	6425	818.5
	10[1]	24400	857	6400	816
	15[1]	24375	854.5	6375	813.5
	20[1]	24350	852	6350	811
NOTE 1: Bandwidth for which a relaxation of the specified UE receiver sensitivity requirement (TS 36.101 [27] Clause 7.3) is allowed.					

1.3. OBJECTIVE

Perform Radio Spectrum tests for CE Marking according to the provisions of article 3.2 of the Radio Equipment Directive (2014/53/EU) for the Radio function of the EUT.

1.4. TEST ITEMS AND THE RESULTS

Leading reference documents for testing:

ETSI EN 301 908-1	IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 1: Introduction and common requirements Release 15
ETSI EN 301 908-13	IMT cellular networks; Harmonised Standard for access to radio spectrum; Part 13: Evolved Universal Terrestrial Radio Access (E-UTRA) User Equipment (UE)

Specific reference documents for testing:

3GPP TS 36.521-1	LTE; Evolved Universal Terrestrial Radio Access (E-UTRA);User Equipment (UE) conformance specification; Radio transmission and reception; Part 1: Conformance testing
3GPP TS 36.508	LTE; Evolved Universal Terrestrial Radio Access (E-UTRA) and Evolved Packet Core (EPC); Common test environments for User Equipment (UE) conformance testing

Radio Spectrum Matter (RSM) Part of Transmitter			
No.	Test Item	Test require	Result
1	Radiated emissions (UE)	EN 301 908-1 Section 4.2.2	Pass
2	Control and monitoring functions (UE)	EN 301 908-1 Section 4.2.4	Pass
3	Transmitter Maximum Output Power	EN 301 908-13 Section 4.2.2	Pass
4	Transmitter Spectrum emission mask	EN 301 908-13 Section 4.2.3	Pass
5	Transmitter Spurious Emissions	EN 301 908-13 Section 4.2.4	Pass
6	Transmitter Minimum Output Power	EN 301 908-13 Section 4.2.5	Pass

7	Transmitter Adjacent Channel Leakage Power Ratio	EN 301 908-13 Section 4.2.11	Pass
Radio Spectrum Matter (RSM) Part of Receiver			
No.	Test Item	Test require	Result
8	Receiver Adjacent Channel Selectivity	EN 301 908-13 Section 4.2.6	Pass
9	Receiver Blocking Characteristics	EN 301 908-13 Section 4.2.7	Pass
10	Recevier Spurious Response	EN 301 908-13 Section 4.2.8	Pass
11	Recevier Intermodulation Characteristics	EN 301 908-13 Section 4.2.9	Pass
12	Receiver Spurious Emissions	EN 301 908-13 Section 4.2.10	Pass
13	Receiver Reference Sensitivity Level	EN 301 908-13 Section 4.2.12	Pass

Note:
1.The measurement uncertainty is not included in the test result.

2.N/A: means this test item is not applicable for this device according to the technology characteristic of device.

3.EUT Orthogonal Axis: “X” - denotes Laid on Table; ”Y” - denotes Vertical Stand; ”Z” - denotes Side Stand.

2. TEST ENVIROMENT

2.1 ADDRESS OF THE TEST LABORATORY

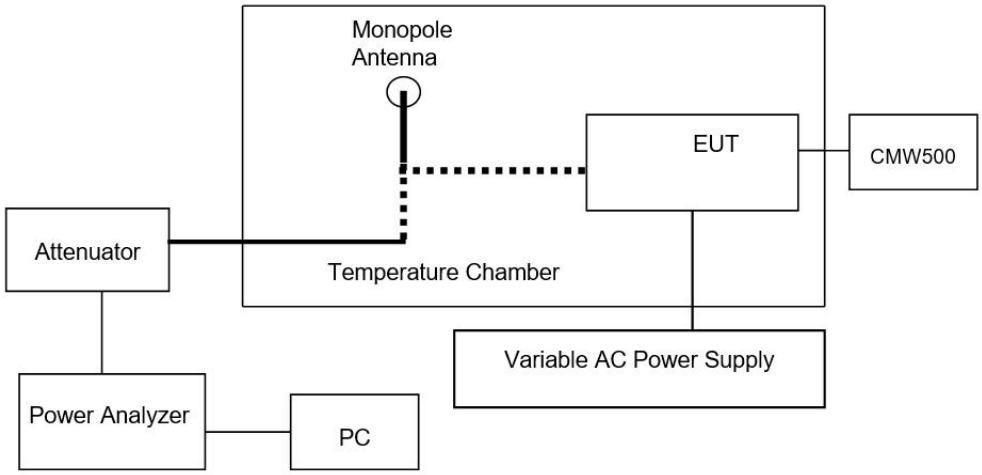
Test Site	Dongguan Yaxu (AiT) Technology Limited
Location	Add: No.22, Jinqianling 3rd Street, Jitigang, Huangjiang,Dongguan, Guangdong, China
CNAS- Registration No	L6177

2.2 ENVIRONMENTAL CONDITIONS

	NORMAL CONDITIONS	EXTREME CONDITIONS
Temperature range (℃)	15 - 35	-10-50
Relative humidty range	20 % - 75 %	20 % - 75 %
Pressure range (kPa)	86 - 106	86 - 106
Power supply	DC 3.87V	LV:DC 3.28V/HV: DC 4.45V
Note: 1.The Extreme Temperature and Extreme Voltages declared by the manufacturer. 2.The Limit Voltage 5.1V was declared by manufacturer, 3.The EUT couldn't be operate normally with higher voltage. 4.The maximum temperature of 50 is not a standard requirement and is measured according to the maximum service temperature stated by the manufacturer.		

2.2 SETUP CONFIGURATION OF EUT

Conducted measurements configuration of EUT shall be as follows:



Remarks:
The Signal Analyzer could be connected to a monopole antenna or directly connected to the EUT, if the EUT has already employing an antenna connector.

2.4 MEASUREMENT UNCERTAINTY

The reported 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%.

Parameter	Conditions	Test System Uncertainty
Transmitter Maximum Output power	--	±0,7 dB
Transmitter spectrum emissions mask	--	±1,5 dB
Transmitter spurious emissions	9 kHz < f ≤ 4 GHz: ±2,0 dB 4 GHz < f ≤ 12,75 GHz: ±4,0 dB	±2,0 dB ±4,0 dB
Transmitter Minimum output power	--	±1,0 dB
Receiver Adjacent Channel Selectivity(ACS)	--	±1,1 dB
Receiver Blocking characteristics	1 MHz < finterferer ≤ 3 GHz 3 GHz < finterferer ≤ 12,75 GHz	±1,3 dB ±3,2 dB
Receiver spurious response	1 MHz < finterferer ≤ 3 GHz 3 GHz < finterferer ≤ 12,75 GHz	±1,3 dB ±3,2 dB
Receiver intermodulation characteristics	--	±1,4 dB
Receiver spurious emissions	30 MHz ≤ f ≤ 4,0 GHz: ±2,0 dB 4 GHz < f ≤ 12,75 GHz: ±4,0 dB	±2,0 dB ±4,0 dB
Transmitter adjacent channel leakage power ratio	--	±0,8 dB

NOTE 1: For RF tests it should be noted that the uncertainties in table 5.2-1 apply to the test system operating into a nominal 50 Ω load and do not include system effects due to mismatch between the EUT and the test system.

NOTE 2: If the test system for a test is known to have a measurement uncertainty greater than that specified in table 5.2-1, this equipment can still be used provided that an adjustment is made follows: any additional uncertainty in the test system over and above that specified in table 5.2-1 should be used to tighten the test requirements - making the test harder to pass (for some tests, e.g. receiver tests, this may require modification of stimulus signals). This procedure will ensure that a test system not compliant with table 5.2-1 does not increase the probability of passing an EUT that would otherwise have failed a test if a test system compliant with table 5.2-1 had been used.

2.5 LIST OF EQUIPMENTS USED

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal. Due Date
1	Spectrum Analyzer	R&S	FSV40	101470	2022.09.02	2023.09.01
2	EMI Measuring Receiver	R&S	ESR	101660	2022.09.02	2023.09.01
3	Low Noise Pre Amplifier	HP	HP8447E	1937A01855	2022.09.02	2023.09.01
4	Low Noise Pre Amplifier	Tsj	MLA-0120-A02-34	2648A04738	2022.09.02	2023.09.01
5	Passive Loop	ETS	6512	00165355	2023.09.03	2025.09.04
6	TRILOG Super Broadband test Antenna	SCHWARZBECK	VULB9160	9160-3206	2021.08.29	2024.08.28
7	Broadband Horn Antenna	SCHWARZBECK	BBHA9120D	452	2021.08.29	2024.08.28
8	SHF-EHF Horn Antenna 15-40GHz	SCHWARZBECK	BBHA9170	BBHA9170367d	2020.11.24	2023.11.23
9	EMI Test Receiver	R&S	ESCI	100124	2022.09.02	2023.09.01
10	LISN	Kyoritsu	KNW-242	8-837-4	2022.09.02	2023.09.01
11	LISN	R&S	ESH3-Z2	0357.8810.54-101161-S2	2022.09.02	2023.09.01
12	Pro.Temp&Humi.chamber	MENTEK	MHP-150-1C	MAA08112501	2022.09.02	2023.09.01
13	RF Automatic Test system	MW	MW100-RFCB	21033016	2022.09.02	2023.09.01
14	Signal Generator	Agilent	N5182A	MY501430009	2022.09.02	2023.09.01
15	Wideband Radio communication tester	R&S	CMW500	1201.0002K50	2022.09.02	2023.09.01
16	RF Automatic Test system	MW	MW100-RFCB	21033016	2022.09.02	2023.09.01
17	DC power supply	ZHAOXIN	RXN-305D-2	28070002559	N/A	N/A
18	RE Software	EZ	EZ-EMC_RE	Ver.AIT-03A	N/A	N/A
19	CE Software	EZ	EZ-EMC_CE	Ver.AIT-03A	N/A	N/A
20	RF Software	MW	MTS 8310	2.0.0.0	N/A	N/A
21	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. SUMMARY OF TEST RESULTS

Terms in the column “Verdict” for the test results list of the section:

Verdict	Description
PASS	EUT passed this test case
FAIL	EUT failed this test case
INC.	EUT did not pass and did not fail this test case, therefore the verdict is inconclusive
N/A	Test case not applicable for the EUT, see the column “Note” for detailed

Test Item	Test Requirement EN301908-1	-	Test Conditions	Verdict					Note:
				FDD B1	FDD B3	FDD B7	FDD B8	FDD B20	
Radiated emissions (UE)	Section 4.2.2	-	NT/NV	Pass	Pass	Pass	Pass	Pass	Reference to the section 4.12
Control and monitoring functions (UE)	Section 4.2.4	-	NT/NV	Pass	Pass	Pass	Pass	Pass	Reference to the section 4.11
Test Item	Test Requirement EN301908-13	Test Method ETSI TS136521-1	Test Conditions	Verdict					Note:
				FDD B1	FDD B3	FDD B7	FDD B8	FDD B20	
Transmitter Maximum Output Power	Section 4.2.2.1	Clause 6.2.2	NT/NV LT/LV LT/HV HT/LV HT/HV	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Reference to the section 4.1
Transmitter Spectrum emission mask	Section 4.2.3.1	Claue 6.6.2.1	NT/NV	Pass	Pass	Pass	Pass	Pass	
Transmitter Spurious Emissions	Section 4.2.4.1	Claue 6.6.3.2	NT/NV	Pass	Pass	Pass	Pass	Pass	
Transmitter Minimum Output Power	Section 4.2.5.1	Clause 6.3.2	NT/NV LT/LV LT/HV HT/LV HT/HV	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	
Receiver Adjacent Channel Selectivity	Section 4.2.6	Clause 7.5	NT/NV	Pass	Pass	Pass	Pass	Pass	
Receiver Blocking Characteristics	Section 4.2.7	Clause 7.6.1	NT/NV	Pass	Pass	Pass	Pass	Pass	
Recevier Spurious Response	Section 4.2.8	Clause 7.7	NT/NV	Pass	Pass	Pass	Pass	Pass	
Recevier Intermodulation Characteristics	Section 4.2.9	Clause 7.8	NT/NV	Pass	Pass	Pass	Pass	Pass	

Receiver Spurious Emissions	Section 4.2.10	Clause 7.9	NT/NV	Pass	Pass	Pass	Pass	Pass	
Transmitter Adjacent Channel Leakage Power Ratio	Section 4.2.11	Clause 6.6.2.3	NT/NV LT/LV LT/HV HT/LV HT/HV	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	
Receiver Reference Sensitivity Level	Section 4.2.12	Clause 7.3	NT/NV LT/LV LT/HV HT/LV HT/HV	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	Pass Pass Pass Pass Pass	

Test Item	Test Bandwidth				
	FDD B1	FDD B3	FDD B7	FDD B8	FDD B20
Radiated emissions (UE)	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Control and monitoring functions (UE)	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Transmitter Maximum Output Power	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Transmitter Spectrum emission mask	5MHz 10MHz 20MHz	1.4MHz 5MHz 10MHz 20MHz	5MHz 10MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 10MHz 20MHz
Transmitter Spurious Emissions	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Transmitter Minimum Output Power	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Receiver Adjacent Channel Selectivity	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Receiver Blocking Characteristics	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Recevier Spurious Response	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Recevier Intermodulation Characteristics	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz
Receiver Spurious Emissions	20MHz	20MHz	20MHz	10MHz	20MHz
Transmitter Adjacent Channel Leakage Power Ratio	5MHz 10MHz 20MHz	1.4MHz 5MHz 10MHz 20MHz	5MHz 10MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 10MHz 20MHz
Receiver Reference Sensitivity Level	5MHz 20MHz	1.4MHz 5MHz 20MHz	5MHz 20MHz	1.4MHz 5MHz 10MHz	5MHz 20MHz

4. TSI EN 301 908-1/-13 REQUIREMENTS

4.1. TRANSMITTER MAXIMUM OUTPUT POWER

TEST LIMIT

Clause 6.2.2 of ETSI TS 136 521-1 (V11.1.0) (2013-07) applies.

DEFINITION AND APPLICABILITY

To verify that the error of the UE maximum output power does not exceed the range prescribed by the specified nominal maximum output power and tolerance.
An excess maximum output power has the possibility to interfere to other channels or other systems. A small maximum output power decreases the coverage area.
This test case applies to all types of E-UTRA UE release 8 and forward.

CONFORMANCE REQUIREMENTS

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH (see section 1.6).
Frequencies to be tested: low range, mid range, high range; as specified in TS 136 508 [2], clause 4.3.1.
Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.0 and uplink signals according to clauses H.1 and H.3.0.

4) The UL Reference Measurement channels are set according to TS 136 521-1 [1].

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.
The UE maximum output power shall be within the shown value in table 4.2.2.1.2-1.

Table 4.2.2.1.2-1: UE power classes

E-UTRA Band	Power Class 3 (dBm)	Tolerance (dB)
1	23	±2,7
3	23	±2,7 (see note)
7	23	±2,7 (see note)
8	23	±2,7 (see note)
20	23	±2,7 (see note)
33	23	±2,7
34	23	±2,7
38	23	±2,7
40	23	±2,7
42	23	+3,0/-4,0
43	23	+3,0/-4,0
NOTE: For transmission bandwidths (TS 136 521-1 [1], clause 5) confined within F_{UL_low} and F_{UL_low} + 4 MHz or F_{UL_high} - 4 MHz and F_{UL_high}, the maximum output power requirement is relaxed by reducing the lower tolerance limit by 1,5 dB (tolerance = +2,7/-4,2).		

NOTE 1: These requirements do not take into account the maximum power reductions allowed to the UE in subject to certain transmission conditions specified in TS 136 101 [4], clauses 6.2.3 and 6.2.4.

NOTE 2: The range of UE maximum output power for the various power classes are specified in TS 136 101 [4], clause 6.2.2. The values in table 4.2.2.1.2-1 correspond to the measurement limits taking into account the measurement uncertainty of measurement equipment (see clause 5.2).

SET UP FOR TESTING

1) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to table 6.2.2.1.4.1-1 of TS 136 521-1 [1]. Since the UE has no payload and no loopback data to send the UE sends uplink MAC padding bits on the UL RMC.

2) Send continuously uplink power control "up" commands in every uplink scheduling information to the UE; allow at least 200 ms for the UE to reach PUMAX level.

3) Measure the mean power of the UE in the channel bandwidth of the radio access mode. The period of measurement shall be at least the continuous duration of one sub-frame (1 ms). For TDD slots with transient periods are not under test.

4) Repeat for applicable test frequencies, channel bandwidths, operating band combinations and environmental conditions.

TEST RESULT

☒ **Pass** ☐ **Not Applicable**

Band 1

Band1 Channel Bandwidth=5MHz							
Modulation	Test Condition	Channel Number	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	18025	1	0	23.38	20.3~25.7	Pass
			8	0	23.23	20.3~25.7	Pass
		18300	1	0	23.20	20.3~25.7	Pass
			8	0	23.17	20.3~25.7	Pass
		18575	1	max	23.25	20.3~25.7	Pass
			8	17	23.44	20.3~25.7	Pass

Band1 Channel Bandwidth=20MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	18100	1	0	23.01	20.3~25.7	Pass
			18	0	23.28	20.3~25.7	Pass
		18300	1	0	22.97	20.3~25.7	Pass
			18	0	22.93	20.3~25.7	Pass
		18500	1	max	23.00	20.3~25.7	Pass
			18	82	23.03	20.3~25.7	Pass

Band 3

Band3 Channel Bandwidth=1.4 MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	19207	1	0	23.03	20.3~25.7	Pass
			5	0	23.40	20.3~25.7	Pass
		19575	1	0	22.55	20.3~25.7	Pass
			5	0	22.94	20.3~25.7	Pass
		19943	1	max	22.97	20.3~25.7	Pass
			5	1	23.25	20.3~25.7	Pass

Band3 Channel Bandwidth=5 MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	19225	1	0	23.09	20.3~25.7	Pass
			8	0	23.28	20.3~25.7	Pass
		19575	1	0	22.71	20.3~25.7	Pass
			8	0	22.96	20.3~25.7	Pass
		19925	1	max	22.86	20.3~25.7	Pass
			8	17	23.26	20.3~25.7	Pass

Band3 Channel Bandwidth=20 MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	19300	1	0	23.08	20.3~25.7	Pass
			18	0	23.13	20.3~25.7	Pass
		19575	1	0	22.65	20.3~25.7	Pass
			18	0	23.10	20.3~25.7	Pass
		19850	1	max	22.94	20.3~25.7	Pass
			18	82	23.17	20.3~25.7	Pass

Band 7

Band7 Channel Bandwidth=5MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	20775	1	0	21.56	20.3~25.7	Pass
			8	0	21.70	20.3~25.7	Pass
		21100	1	0	21.60	20.3~25.7	Pass
			8	0	21.53	20.3~25.7	Pass
		21425	1	max	21.51	20.3~25.7	Pass
			8	17	21.33	20.3~25.7	Pass

Band7 Channel Bandwidth=20MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	20850	1	0	21.46	20.3~25.7	Pass
			18	0	21.90	20.3~25.7	Pass
		21100	1	0	21.54	20.3~25.7	Pass
			18	0	21.36	20.3~25.7	Pass
		21350	1	max	21.33	20.3~25.7	Pass
			18	82	21.07	20.3~25.7	Pass

Band 8

Band8 Channel Bandwidth=1.4 MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	21457	1	0	22.86	20.3~25.7	Pass
			5	0	22.90	20.3~25.7	Pass
		21625	1	0	22.81	20.3~25.7	Pass
			5	0	22.75	20.3~25.7	Pass
		21793	1	max	22.69	20.3~25.7	Pass
			5	1	22.83	20.3~25.7	Pass

Band8 Channel Bandwidth=5 MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	21475	1	0	22.65	20.3~25.7	Pass
			8	0	22.77	20.3~25.7	Pass
		21625	1	0	22.79	20.3~25.7	Pass
			8	0	22.72	20.3~25.7	Pass
		21775	1	max	22.68	20.3~25.7	Pass
			8	17	22.64	20.3~25.7	Pass

Band8 Channel Bandwidth=10 MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	21500	1	0	22.59	20.3~25.7	Pass
			12	0	22.65	20.3~25.7	Pass
		21625	1	0	22.68	20.3~25.7	Pass
			12	0	22.49	20.3~25.7	Pass
		21750	1	max	22.54	20.3~25.7	Pass
			12	38	22.52	20.3~25.7	Pass

Band 20

Band20 Channel Bandwidth=5MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	24175	1	0	22.76	20.3~25.7	Pass
			8	0	22.86	20.3~25.7	Pass
		24300	1	0	22.74	20.3~25.7	Pass
			8	0	22.91	20.3~25.7	Pass
		24425	1	max	22.90	20.3~25.7	Pass
			8	17	22.94	20.3~25.7	Pass

Band20 Channel Bandwidth=20MHz							
Modulation	Test Condition	Channel	RB allocation		Average Power (dBm)	Limit(dBm)	Verdict
			RB Size	RB Offset			
QPSK	NT/NV	24250	1	0	22.63	20.3~25.7	Pass
			18	0	22.79	20.3~25.7	Pass
		24300	1	0	22.74	20.3~25.7	Pass
			18	0	22.76	20.3~25.7	Pass
		24350	1	max	22.59	20.3~25.7	Pass
			18	82	22.53	20.3~25.7	Pass

4.2. TRANSMITTER SPECTRUM EMISSION MASK

TEST LIMIT

Clause 6.6.2.1 of ETSI TS 136 521-1 (V11.1.0) (2013-07) applies.

DEFINITION AND APPLICABILITY

Out of band emissions are unwanted emissions immediately outside the nominal channel resulting from the modulation process and non-linearity in the transmitter but excluding spurious emissions. This out of band emission limit is specified in terms of a Spectrum Emission Mask and Adjacent Channel Leakage power

Ratio.This test case applies to all types of E-UTRA UE release 8 and forward.

CONFORMANCE REQUIREMENTS

Test environment: normal (see section 1.6).
Frequencies to be tested: low range, mid range and high range; as specified in TS 136 508 [2], clause 4.3.1.
Channel bandwidths to be tested: lowest, 5 MHz, 10 MHZ and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.

Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.0 and uplink signals according to clauses H.1 and H.3.0.

4) The UL Reference Measurement channels are set according to TS 136 521-1 [1].

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

The power of any UE emission shall fulfil requirements in tables 4.2.3.1.2-1 and 4.2.3.1.2-2.

Table 4.2.3.1.2-1: General E-UTRA spectrum emission mask, E UTRA bands ≤ 3 GHz

Δf_{OOB} (MHz)	1,4 MHz	3,0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Measurement bandwidth
0 to 1	-8,5	-11,5	-13,5	-16,5	-18,5	-19,5	30 kHz
1 to 2,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	1 MHz
2,5 to 2,8	-23,5	-8,5	-8,5	-8,5	-8,5	-8,5	1 MHz
2,8 to 5		-8,5	-8,5	-8,5	-8,5	-8,5	1 MHz
5 to 6		-23,5	-11,5	-11,5	-11,5	-11,5	1 MHz
6 to 10			-23,5	-11,5	-11,5	-11,5	1 MHz
10 to 15				-23,5	-11,5	-11,5	1 MHz
15 to 20					-23,5	-11,5	1 MHz
20 to 25						-23,5	1 MHz

NOTE 1: The first and last measurement position with a 30 kHz filter is at Δf_{OOB} equals to 0,015 MHz and 0,985 MHz.
NOTE 2: The first and last measurement position with a 1 MHz filter for 1 MHz - 2,5 MHz offset range is at Δf_{OOB} equals to 1,5 MHz and 2,0 MHz. Similarly for other Δf_{OOB} ranges.
NOTE 3: The measurements shall be performed above the upper edge of the channel and below the lower edge of the channel.
NOTE 4: For the 2,5 MHz - 2,8 MHz offset range with 1,4 MHz channel bandwidth, the measurement position is at Δf_{OOB} equals to 3 MHz.

Table 4.2.3.1.2-2: General E-UTRA spectrum emission mask, 3 GHz < E-UTRA bands ≤ 4,2 GHz

	Spectrum emission limit (dBm)/Channel bandwidth						
Δf_{OOB} (MHz)	1,4 MHz	3,0 MHz	5 MHz	10 MHz	15 MHz	20 MHz	Measurement bandwidth
0 to 1	-8,2	-11,2	-13,2	-16,2	-18,2	-19,2	30 kHz
1 to 2,5	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	1 MHz
2,5 to 2,8	-23,2						1 MHz
2,8 to 5							1 MHz
5 to 6		-23,2	-11,2	-11,2	-11,2	-11,2	1 MHz
6 to 10			-23,2				1 MHz
10 to 15				-23,2			1 MHz
15 to 20					-23,2		1 MHz
20 to 25						-23,2	1 MHz

NOTE 1: The first and last measurement position with a 30 kHz filter is at Δf_{OOB} equals to 0,015 MHz and 0,985 MHz.
NOTE 2: At the boundary of spectrum emission limit, the first and last measurement position with a 1 MHz filter is the inside of +0,5 MHz and -0,5 MHz, respectively.
NOTE 3: The measurements shall be performed above the upper edge of the channel and below the lower edge of the channel.
NOTE 4: For the 2,5-2,8 MHz offset range with 1,4 MHz channel bandwidth, the measurement position is at Δf_{OOB} equals to 3 MHz.

SET UP FOR TESTING

1) SS sends uplink scheduling information via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 6.6.2.1.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

2) Send continuously uplink power control "up" commands in the uplink scheduling information to the UE until the UE transmits at PUMAX level.

3) Measure the power of the transmitted signal with a measurement filter of bandwidths according to tables 4.2.3.1.2-1 or 4.2.3.1.2-2, as applicable. The center frequency of the filter shall be stepped in continuous steps according to the same table. The measured power shall be recorded for each step. The measurement period shall capture the active TSs.

4) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.3. TRANSMITTER ADJACENT CHANNEL LEAKAGE POWER RATIO(ACLR)

TEST LIMIT

Clause 4.2.11 of ETSI TS 136 521-1 V13.3.0 (2016-12) applies.

DEFINITION AND APPLICABILITY

Adjacent Channel Leakage power Ratio (ACLR) is the ratio of the filtered mean power centred on the assigned channel frequency to the filtered mean power centred on an adjacent channel frequency

CONFORMANCE REQUIREMENTS

Test Environment: normal, TL/VL, TL/VH, TH/VL and TH/VH, as specified in(see section 1.6) .
Frequencies to be tested: low range, mid range and high range; see TS 136 508 [2].
Channel bandwidth to be tested: lowest, 5 MHz, 10 MHz and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS to the UE to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.0 and uplink signals according to clauses H.1 and H.3.0.

4) The UL Reference Measurement channels are set according to TS 136 521-1 [1].

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.

If the measured adjacent channel power is greater than -50 dBm then the measured E-UTRAACLR shall be higher than the limits in table 4.2.11.1.2-1.

Table 4.2.11.1.2-1: E-UTRA UE ACLR

	Channel bandwidth/E-UTRA$_{ACLR1}$/measurement bandwidth					
	1,4 MHz	**3,0 MHz**	**5 MHz**	**10 MHz**	**15 MHz**	**20 MHz**
E-UTRA$_{ACLR1}$	29,2 dB	29,2 dB	29,2 dB	29,2 dB	29,2 dB	29,2 dB
E-UTRA channel Measurement bandwidth	1,08 MHz	2,7 MHz	4,5 MHz	9,0 MHz	13,5 MHz	18 MHz
UE channel	+1,4 MHz or -1,4 MHz	+3 MHz or -3 MHz	+5 MHz or -5 MHz	+10 MHz or -10 MHz	+15 MHz or -15 MHz	+20 MHz or -20 MHz

If the measured UTRA channel power is greater than -50 dBm then the measured UTRAACLR1, UTRAACLR2 shall be higher than the limits in table 4.2.11.1.2-2.

Table 4.2.11.1.2-2: UTRA UE ACLR

	Channel bandwidth/$UTRA_{ACLR1/2}$/measurement bandwidth					
	1,4 MHz	3,0 MHz	5 MHz	10 MHz	15 MHz	20 MHz
$UTRA_{ACLR1}$	32,2 dB	32,2 dB	32,2 dB	32,2 dB	32,2 dB	32,2 dB
Adjacent channel centre frequency offset (in MHz)	0,7 + $BW_{UTRA}/2$ / -0,7 - $BW_{UTRA}/2$	1,5 + $BW_{UTRA}/2$ / -1,5 - $BW_{UTRA}/2$	2,5 + $BW_{UTRA}/2$ / -2,5 - $BW_{UTRA}/2$	5 + $BW_{UTRA}/2$ / -5 - $BW_{UTRA}/2$	7,5 + $BW_{UTRA}/2$ / -7,5 - $BW_{UTRA}/2$	10 + $BW_{UTRA}/2$ / -10 - $BW_{UTRA}/2$
$UTRA_{ACLR2}$	-	-	35,2 dB	35,2 dB	35,2 dB	35,2 dB
Adjacent channel centre frequency offset (in MHz)	-	-	2,5 + 3 × $BW_{UTRA}/2$ / -2,5 - 3 × $BW_{UTRA}/2$	5 + 3 × $BW_{UTRA}/2$ / -5 - 3 × $BW_{UTRA}/2$	7,5 + 3 × $BW_{UTRA}/2$ / -7,5 - 3 × $BW_{UTRA}/2$	10 + 3 × $BW_{UTRA}/2$ / -10 - 3 × $BW_{UTRA}/2$
E-UTRA channel Measurement bandwidth	1,08 MHz	2,7 MHz	4,5 MHz	9,0 MHz	13,5 MHz	18 MHz
UTRA 5 MHz channel Measurement bandwidth (see note 1)	3,84 MHz	3,84 MHz	3,84 MHz	3,84 MHz	3,84 MHz	3,84 MHz
UTRA 1,6 MHz channel measurement bandwidth (see note 2)	1,28 MHz	1,28 MHz	1,28 MHz	1,28 MHz	1,28 MHz	1,28 MHz

NOTE 1: Applicable for E-UTRA FDD co-existence with UTRA FDD in paired spectrum.
NOTE 2: Applicable for E-UTRA TDD co-existence with UTRA TDD in unpaired spectrum.
NOTE 3: BW_{UTRA} for UTRA FDD is 5 MHz and for UTRA TDD is 1,6 MHz.

SET UP FOR TESTING

1) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 6.6.2.3.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.
2) Send continuous uplink power control "up" commands in the uplink scheduling information to the UE to ensure that the UE transmits at PUMAX level.
3) Measure the mean power of the UE in the channel bandwidth of the radio access mode according to the test configuration, which shall meet the requirements described in tables 4.2.11.1.2-1 and 4.2.11.1.2-2. The period of the measurement shall be at least the continuous duration of one sub-frame (1 ms). For TDD slots with transient periods are not under test.
4) Measure the filtered mean power for E-UTRA.
5) Measure the filtered mean power of the first E-UTRA adjacent channel.
6) Measure the RRC filtered mean power of the first and the second UTRA adjacent channel.
7) Calculate the ratio of the power between the values measured in step 4) over step 5) for E-UTRAACLR.
8) Calculated the ratio of the power between the values measured in step 4) over step 6) for UTRAACLR1, UTRAACLR2.
9) Repeat for applicable test frequencies, channel bandwidths, operating band combinations and environmental conditions.
Details of the test method can be found in TS 136 521-1 [1], clause 6.6.2.3.

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.4. TRANSMITTER SPURIOUS EMISSIONS

TEST LIMIT

Clause 6.6.3 of ETSI ETSI TS 136 521-1 (V11.1.0) (2013-07) applies.

DEFINITION AND APPLICABILITY

Spurious emissions are emissions which are caused by unwanted transmitter effects such as harmonics emission, parasitic emissions, intermodulation products and frequency conversion products, but exclude out-of-band emissions. The spurious emission limits are specified in terms of general requirements in line with Recommendation ITU-R SM.329-12 [i.5] and E-UTRA operating band requirement to address UE co-existence. To improve measurement accuracy, sensitivity and efficiency, the resolution bandwidth may be smaller than the measurement bandwidth. When the resolution bandwidth is smaller than the measurement bandwidth, the result should be integrated over the measurement bandwidth in order to obtain the equivalent noise bandwidth of the measurement bandwidth.

CONFORMANCE REQUIREMENTS

Test environment: normal condition (see section 1.6).
Frequencies to be tested: low range, mid range, high range; see TS 136 508 [2].
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in TS 136 508 [2].

1) Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:
2) Connect the SS to the UE antenna connectors.
3) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.
4) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.0 and uplink signals according to clauses H.1 and H.3.0.
5) The UL Reference Measurement channels are set according to TS 136 521-1 [1]. 5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.
The spurious emission limits in table 4.2.4.1.2-2 apply for the frequency ranges that are more than ΔfOOB (MHz) from the edge of the channel bandwidth shown in table 4.2.4.1.2-1.
The measured average power of spurious emission for general requirements shall not exceed the described values in table 4.2.4.1.2-2.
The measured average power of spurious emission for E-UTRA operating band specific requirements to protected bands shall not exceed the described values in tables 4.2.4.1.2-3 and 4.2.4.1.2-4.

Table 4.2.4.1.2-1: Δf_{OOB} boundary between E-UTRA channel and spurious emission domain

Channel bandwidth	1,4 MHz	3,0 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Δf_{OOB} (MHz)	2,8	6	10	15	20	25

Table 4.2.4.1.2-2: General spurious emissions limits

Frequency range	Maximum level	Measurement bandwidth	Comment
9 kHz ≤ f < 150 kHz	-36 dBm	1 kHz	
150 kHz ≤ f < 30 MHz	-36 dBm	10 kHz	
30 MHz ≤ f < 1 000 MHz	-36 dBm	100 kHz	
1 GHz ≤ f < 12,75 GHz	-30 dBm	1 MHz	
12,75 GHz ≤ f < 5th harmonic of the upper frequency edge of the UL operating band in GHz	-30 dBm	1 MHz	See note
NOTE: Shall apply for Band 22, 42 and Band 43.			

NOTE 1: In order that the measurement of spurious emissions falls within the frequency ranges that are more than ΔfOOB (MHz) from the edge of the channel bandwidth, the minimum offset of the measurement frequency from each edge of the channel should be Δf_{OOB} + MBW/2. MBW denotes the measurement bandwidth defined in table 4.2.4.1.2-2.

The additional requirements in table 4.2.4.1.2-3 apply for the frequency ranges that are more and less than Δf_{OOB} (MHz) from the edge of the channel bandwidth shown in table 4.2.4.1.2-1.

SET UP FOR TESTING

1) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 6.6.3.1.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

2) Send continuously Up power control commands in the uplink scheduling information to the UE until the UE transmits at PUMAX level.

3) For each applicable requirement in tables 4.2.4.1.2-2, 4.2.4.1.2-3 and 4.2.4.1.2-4; Measure the power of the transmitted signal with a measurement filter of bandwidths. The center frequency of the filter shall be stepped in contiguous steps according to the tables. The measured power shall be verified for each step. The measurement period shall capture the active time slots.

4) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

TEST RESULT

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to Appendix :
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.5. TRANSMITTER MINIMUM OUTPUT POWER

TEST LIMIT

Clause 4.2.5 of EN 301 908-13 V 6.2.1 applies.

DEFINITION AND APPLICABILITY

The minimum controlled output power of the UE is defined as the broadband transmit power of the UE, i.e. the power in the channel bandwidth for all transmit bandwidth configurations (resource blocks), when the power is set to a minimum value.

CONFORMANCE REQUIREMENTS

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH (see section 1.6)
Frequencies to be tested: low range, mid range and high range; see TS 136 508 [2].
Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth, as specified in TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.0 and uplink signals according to clauses H.1 and H.3.0.

4) The UL Reference Measurement channels are set according to TS 136 521-1 [1].

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.
The minimum output power measured shall not exceed the values specified in table 4.2.5.1.2-1.

Table 4.2.5.1.2-1: Minimum output power

	Channel bandwidth/minimum output power/measurement bandwidth					
	1,4 MHz	3,0 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Minimum output power	For carrier frequency f ≤ 3,0 GHz: ≤ -39 dBm For carrier frequency 3,0 GHz < f ≤ 4,2 GHz: ≤ -38,7 dBm					
Measurement bandwidth	1,08 MHz	2,7 MHz	4,5 MHz	9,0 MHz	13,5 MHz	18 MHz

SET UP FOR TESTING

1) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 6.3.2.1.4.1-1. Since the UE has no payload and no loopback data to send the UE sends uplink MAC padding bits on the UL RMC.

2) Send continuous uplink power control "down" commands in the uplink scheduling information to the UE to ensure that the UE transmits at its minimum output power.

3) Measure the mean power of the UE in the associated measurement bandwidth specified in table 4.5.2.1-1 for the specific channel bandwidth under test. The period of measurement shall be the continuous duration of one sub-frame (1 ms). For TDD slots with transient periods are not under test.

4) Repeat for applicable test frequencies, channel bandwidths, operating band combinations and environmental conditions.
Details of the test method can be found in TS 136 521-1 [1], clause 6.3.2.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.6. RECEIVER ADJACENT CHANNEL SELECTIVITY (ACS)

TEST LIMIT

Clause 7.5 of ETSI TS 136 521-1 (V11.1.0) (2013-07) applies.

DEFINITION AND APPLICABILITY

Adjacent Channel Selectivity (ACS) is a measure of a receiver's ability to receive an E-UTRA signal at its assigned channel frequency in the presence of an adjacent channel signal at a given frequency offset from the centre frequency of the assigned channel. ACS is the ratio of the receive filter attenuation on the assigned channel frequency to the receive filter attenuation on the adjacent channel(s).

CONFORMANCE REQUIREMENTS

Test environment: normal (see section 1.6).
Frequencies to be tested: mid range see TS 136 508 [2].
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS and interfering source to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.0 and uplink signals according to clauses H.1 and H.3.0.

4) The UL and DL Reference Measurement channels are set according to TS 136 521-1 [1], table 7.5.4.1-1.

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.

The throughput R_{av} shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1] under the conditions specified in table 4.2.6.2-2 and also under the conditions specified in table 4.2.6.2-3.

Table 4.2.6.1.2-1: Adjacent channel selectivity

		Channel bandwidth					
Rx Parameter	Units	1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
ACS	dB	33,0	33,0	33,0	33,0	30	27

Table 4.2.6.1.2-2: Test parameters for Adjacent channel selectivity, Case 1

Rx Parameter	Units	Channel bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	REFSENS + 14 dB					
$P_{Interferer}$	dBm	REFSENS +45,5 dB	REFSENS +45,5 dB	REFSENS +45,5 dB	REFSENS +45,5 dB	REFSENS +42,5 dB	REFSENS +39,5 dB
$BW_{Interferer}$	MHz	1,4	3	5	5	5	5
$F_{Interferer}$ (offset)	MHz	1,4025	3,0075	5,0025	7,5075	10,0125	12,5025
NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} or $P_{CMAX\_L\_CA}$ as defined in clause 6.2.5 in ETSI TS 136 101 [3]. NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in ETSI TS 136 521-1 [1].							

Table 4.2.6.1.2-3: Test parameters for Adjacent channel selectivity, Case 2

Rx Parameter	Units	Channel bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	-56,5	-56,5	-56,5	-56,5	-53,5	-50,5
$P_{Interferer}$	dBm	-25					
$BW_{Interferer}$	MHz	1,4	3	5	5	5	5
$F_{Interferer}$ (offset)	MHz	1,4025	3,0075	5,0025	7,5075	10,0125	12,5025
NOTE 1: The transmitter shall be set to 24 dB below P_{CMAX_L} or $P_{CMAX\_L\_CA}$ as defined in clause 6.2.5 in ETSI TS 136 101 [3]. NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with set-up according to clause C.3.1 of ETSI TS 136 521-1 [1].							

SET UP FOR TESTING

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to TS 136 521-1 [1], table 7.5.4.1-1. The SS sends downlink MAC padding bits on the DL RMC.

2) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 7.5.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3) Set the Downlink signal level to the value as defined in table 4.2.6.2-2 (Case 1). Send Uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.6.2-2 (Case 1) for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the Throughput measurement (obtain correct UE output power as specified in TS 136 521-1 [1]).

4) Set the Interferer signal level to the value as defined in table 4.2.6.2-2 (Case 1) and frequency below the wanted signal, using a modulated interferer as defined in TS 136 521-1 [1], annex D.

5) Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of TS 136 521-1 [1].

6) Set the Downlink signal level to the value as defined in table 4.2.6.2-3 (Case 2). Send Uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.6.2-3 (Case 2) for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the throughput measurement (obtain correct UE output power as specified in TS 136 521-1 [1]).

7) Set the Interferer signal level to the value as defined in table 4.2.6.2-3 (Case 2) and frequency below the wanted signal, using a modulated interferer as defined in TS 136 521-1 [1], annex D.

8) Measure the average throughput for a duration sufficient to achieve statistical significance according to TS 136 521-1 [1], annex G.

9) Repeat for applicable channel bandwidths in both Case 1 and Case 2.

10) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.7. RECEIVER BLOCKING CHARACTERISTICS

TEST LIMIT

Clause 7.6 of ETSI TS 136 521-1 (V11.1.0) (07-2013) applies.

DEFINITION AND APPLICABILITY

The blocking characteristic is a measure of the receiver's ability to receive a wanted signal at its assigned channel frequency in the presence of an unwanted interferer on frequencies other than those of the spurious response or the adjacent channels, without this unwanted input signal causing a degradation of the performance of the receiver beyond a specified limit. The blocking performance shall apply at all frequencies except those at which a spurious response occur.

CONFORMANCE REQUIREMENTS

Test environment: normal (see section 1.6).
For In-band blocking, the frequencies to be tested are mid range as defined in TS 136 508 [2].
For Out of band blocking, the frequency to be tested is low or high range as defined in TS 136 508 [2].
For Narrow-band blocking, the frequencies to be tested are mid range as defined in TS 136 508 [2].
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1. Range 3 of out-of-band blocking is tested only with highest bandwidth.

Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS to the UE antenna connectors. 2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

2) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.1 and uplink signals according to clauses H.1 and H.3.0.

3) The UL and DL Reference Measurement channels are set according to TS 136 521-1 [1], table 7.6.2.4.1-1.

4) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

5) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.

With parameters specified in tables 4.2.7.2-1 and 4.2.7.2-2, the throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1].

With parameters specified in tables 4.2.7.2-3 and 4.2.7.2-4, the throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1], except for the spurious response frequencies.

For table 4.2.7.2-4 in frequency range 1, 2 and 3, up to $\prod()6/6,24\max RBN\cdot$ exceptions are allowed for spurious response frequencies in each assigned frequency channel when measured using a 1 MHz step size, where RBN is the number of resource blocks in the downlink transmission bandwidth configuration. For these exceptions the requirements of clause 4.2.8 Spurious response are applicable.

With parameters specified in table 4.2.7.2-5, the throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1].

Table 4.2.7.1.2-1: In-band blocking parameters

Rx Parameter	Units	Channel bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	REFSENS + channel bandwidth specific value below					
		6	6	6	6	7	9
$BW_{Interferer}$	MHz	1,4	3	5	5	5	5
$F_{loffset, case\ 1}$	MHz	2,1125	4,5075	7,5125	7,5025	7,5075	7,5125
$F_{loffset, case\ 2}$	MHz	3,5075	7,5075	12,5075	12,5125	12,5025	12,5075
NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5). NOTE 2: The interferer shall consist of the Reference measurement channel specified in clause A.3.2 of ETSI TS 136 521-1 [1] with a set-up according to clause C.3.1 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in ETSI TS 136 521-1 [1].							

Table 4.2.7.1.2-2: In-band blocking

E-UTRA band	Parameter	Units	Case 1	Case 2
	$P_{Interferer}$	dBm	-56	-44
	$F_{Interferer}$ (Offset)	MHz	= -BW/2 - $F_{loffset, case\ 1}$ and = +BW/2 + $F_{loffset, case\ 1}$	≤ -BW/2 - $F_{loffset, case\ 2}$ and ≥ +BW/2 + $F_{loffset, case\ 2}$
1, 3, 7, 8, 20, 22, 28, 33, 34, 38, 40, 42, 43	$F_{Interferer}$	MHz	(note 2)	F_{DL_low} - 15 to F_{DL_high} + 15
NOTE 1: For certain bands, the unwanted modulated interfering signal may not fall inside the UE receive band, but within the first 15 MHz below or above the UE receive band. NOTE 2: For each carrier frequency the requirement is valid for two frequencies: a) the carrier frequency -BW/2 - Floffset, case 1; and b) the carrier frequency + BW/2 + Floffset, case 1. NOTE 3: $F_{Interferer}$ range values for unwanted modulated interfering signal are interferer center frequencies.				

Table 4.2.7.1.2-3: Out-of-band blocking parameters

Rx Parameter	Units	Channel bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	REFSENS + channel bandwidth specific value below					
		6	6	6	6	7	9
NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5). NOTE 2: Reference measurement channel is clause A.3.2 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in ETSI TS 136 521-1 [1].							

Table 4.2.7.1.2-4: Out-of-band blocking

E-UTRA band	Parameter	Units	Frequency		
			Range 1	Range 2	Range 3
	$P_{Interferer}$	dBm	-44	-30	-15
1, 3, 7, 8, 20, 22, 28, 33, 34, 38, 40, 42 (NOTE 2), 43 (NOTE 2)	$F_{Interferer}$ (CW)	MHz	F_{DL_low} - 15 to F_{DL_low} - 60	F_{DL_low} - 60 to F_{DL_low} - 85	F_{DL_low} - 85 to 1 MHz
			F_{DL_high} + 15 to F_{DL_high} + 60	F_{DL_high} + 60 to F_{DL_high} + 85	F_{DL_high} + 85 to +12 750 MHz
NOTE 1: Range 3 shall be tested only with the highest channel bandwidth. NOTE 2: The power level of the interferer ($P_{Interferer}$) for Range 3 shall be modified to -20 dBm for $F_{Interferer}$ > 2 800 MHz and $F_{Interferer}$ < 4 400 MHz.					

Table 4.2.7.1.2-5: Narrow-band blocking

Parameter	Units	Channel Bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
P_w	dBm	$P_{REFSENS}$ + channel-bandwidth specific value below					
		22	18	16	13	14	16
P_{uw} (CW)	dBm	-55	-55	-55	-55	-55	-55
F_{uw} (offset for Δf = 15 kHz)	MHz	0,9075	1,7025	2,7075	5,2125	7,7025	10,2075
NOTE 1: The transmitter shall be set a 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5). NOTE 2: Reference measurement channel is in clause A.3.2 of ETSI TS 136 521-1 [1]. NOTE 3: REFSENS as defined in ETSI TS 136 521-1 [1].							

SET UP FOR TESTING

In-Of-Band Procedure

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to TS 136 521-1 [1], table 7.6.1.4.1-1. The SS sends downlink MAC padding bits on the DL RMC.

2) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 7.6.1.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3) Set the parameters of the signal generator for an interfering signal below the wanted signal in Case 1 according to tables 4.2.7.2-1 and 4.2.7.2-2 as specified in TS 136 521-1 [1].

4) Set the downlink signal level according to the table 4.2.7.2-1. Send uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.7.2-1 for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].

5) Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of TS 136 521-1 [1].

6) Repeat steps from 3 to 5, using an interfering signal above the wanted signal in Case 1 at step 3.

7) Repeat steps from 3 to 6, using interfering signals in Case 2 at step 3) and 6). The ranges of case 2 are

covered in steps equal to the interferer bandwidth. The test frequencies are chosen in analogy to TS 136 521-1 [1], table 7.6.1.4.2-1. 8) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

Out-Of-Band Procedure

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to TS 136 521-1 [1], table 7.6.2.4.1-1. The SS sends downlink MAC padding bits on the DL RMC.

2) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 7.6.2.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3) Set the parameters of the CW signal generator for an interfering signal according to table 4.2.7.2-4 as specified in TS 136 521-1 [1]. The frequency step size is 1 MHz.

4) Set the downlink signal level according to the table 4.2.7.2-3. Send uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.7.2-3 for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].

5) Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of TS 136 521-1 [1].

6) For table 4.2.7.2-4 record the frequencies for which the throughput does not meet the requirements.

7) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

Narrow-Band Procedure

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to TS 136 521-1 [1], table 7.6.3.4.1-1. The SS sends downlink MAC padding bits on the DL RMC.

2) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 7.6.3.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3) Set the parameters of the CW signal generator for an interfering signal below the wanted signal according to table 4.2.7.2-5 as specified in TS 136 521-1 [1].

4) Set the downlink signal level according to the table 4.2.7.2-5. Send uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.7.2-5 for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].

5) Measure the average throughput for a duration sufficient to achieve statistical significance according to clause G.2 of TS 136 521-1 [1].

6) Repeat steps from 3 to 5, using an interfering signal above the wanted signal at step 3.

7) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE
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4.8. RECEIVER SPURIOUS RESPONSE

TEST LIMIT

Clause 7.7 of ETSI TS 136 521-1 V13.3.0 (2016-12) applies.

DEFINITION AND APPLICABILITY

Spurious response is a measure of the receiver's ability to receive a wanted signal on its assigned channel frequency without exceeding a given degradation due to the presence of an unwanted CW interfering signal at any other frequency at which a response is obtained i.e. for which the out-of-band blocking limit as specified in table 4.2.7.2-4 is not met.

CONFORMANCE REQUIREMENTS

Test environment: normal (see section 1.6).
Frequencies to be tested: mid range; see TS 136 508 [2].
Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.

Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect the SS and interfering sources to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1, C.3.1 and uplink signals according to clauses H.1 and H.3.1.

4) The UL and DL Reference Measurement channels are set according to TS 136 521-1 [1], table 7.8.4.1-1.

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.

The throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1] with parameters specified in tables 4.2.8.2-1 and 4.2.8.2-2.

Table 4.2.8.1.2-1: Spurious response parameters

Rx Parameter	Units	Channel bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	REFSENS + channel bandwidth specific value below					
		6	6	6	6	7	9
NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in ETSI TS 136 101 [3] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5).							
NOTE 2: Reference measurement channel is clause A.3.2 of ETSI TS 136 521-1 [1].							
NOTE 3: REFSENS as defined in ETSI TS 136 521-1 [1].							

Table 4.2.8.1.2-2: Spurious Response

Parameter	Units	Level
$P_{Interferer}$ (CW)	dBm	-44
$F_{Interferer}$	MHz	Spurious response frequencies

SET UP FOR TESTING

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to TS 136 521-1 [1], table 7.6.2.4.1-1. The SS sends downlink MAC padding bits on the DL RMC.

2) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 7.6.2.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3) Set the parameters of the CW signal generator for an interfering signal according to table 4.2.8.2-2. The spurious frequencies are taken from step 5) records in clause 5.3.6.1.2.

4) Set the downlink signal level according to the table 4.2.8.2-1. Send uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.8.2-1 for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].

5) For the spurious frequency, measure the average throughput for a duration sufficient to achieve statistical significance.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.9. RECEIVER INTERMODULATION CHARACTERISTICS

TEST LIMIT

Clause 6.7 of ETSI TS 136 521-1 V13.3.0 (2016-12) applies.

DEFINITION AND APPLICABILITY

Intermodulation response rejection is a measure of the capability of the receiver to receiver a wanted signal on its assigned channel frequency in the presence of two or more interfering signals which have a specific frequency relationship to the wanted signal.

CONFORMANCE REQUIREMENTS

Test environment: normal (see section 1.6).
Frequencies to be tested: mid range; see TS 136 508 [2].
Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:
1) Connect the SS and interfering sources to the UE antenna connectors.
2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1, C.3.1 and uplink signals according to clauses H.1 and H.3.1.
4) The UL and DL Reference Measurement channels are set according to TS 136 521-1 [1], table 7.8.4.1-1.
5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

NOTE: When reference is made to test set up, call set up and test mode, guidance on the applicability of these can be found in TS 136 521-1 [1], TS 136 508 [2] and TS 136 509 [i.11] respectively.

The throughput shall be ≥ 95 % of the maximum throughput of the reference measurement channels as specified in TS 136 521-1 [1] with parameters specified in table 4.2.9.2-1 for the specified wanted signal mean power in the presence of two interfering signals.

Table 4.2.9.2-1: Test parameters for Wide band intermodulation

Rx Parameter	Units	Channel bandwidth					
		1,4 MHz	3 MHz	5 MHz	10 MHz	15 MHz	20 MHz
Power in Transmission Bandwidth Configuration	dBm	REFSENS + channel bandwidth specific value below					
		12	8	6	6	7	9
$P_{Interferer\ 1}$ (CW)	dBm	-46					
$P_{Interferer\ 2}$ (Modulated)	dBm	-46					
$BW_{Interferer\ 2}$		1,4	3	5			
$F_{Interferer\ 1}$ (Offset)	MHz	-BW/2 - 2,1 / +BW/2 + 2,1	-BW/2 - 4,5 / +BW/2 + 4,5	-BW/2 - 7,5 / +BW/2 + 7,5			
$F_{Interferer\ 2}$ (Offset)	MHz	$2 \times F_{Interferer\ 1}$					

NOTE 1: The transmitter shall be set to 4 dB below P_{CMAX_L} at the minimum uplink configuration specified in TS 136 101 [4] (table 7.3.1-2 with P_{CMAX_L} as defined in clause 6.2.5).
NOTE 2: Reference measurement channel is clause A.3.2 of TS 136 521-1 [1].
NOTE 3: The modulated interferer consists of the Reference measurement channel specified in clause A.3.2 of TS 136 521-1 [1] with set-up according to clause C.3.1 of TS 136 521-1 [1]. The interfering modulated signal is 5 MHz E-UTRA signal as described in annex D for channel bandwidth ≥ 5 MHz.
NOTE 4: REFSENS as defined in TS 136 521-1 [1].

SET UP FOR TESTING

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to TS 136 521-1 [1], table 7.6.2.4.1-1. The SS sends downlink MAC padding bits on the DL RMC.
2) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0 for C_RNTI to schedule the UL RMC according to TS 136 521-1 [1], table 7.6.2.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.
3) Set the parameters of the CW signal generator for an interfering signal according to table 4.2.8.2-2. The spurious frequencies are taken from step 5) records in clause 5.3.6.1.2.
4) Set the downlink signal level according to the table 4.2.8.2-1. Send uplink power control commands to the UE (less or equal to 1 dB step size should be used), to ensure that the UE output power is within +0, -3,4 dB of the target level in table 4.2.8.2-1 for carrier frequency f ≤ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f ≤ 4,2 GHz, for at least the duration of the throughput measurement as specified in TS 136 521-1 [1].
5) For the spurious frequency, measure the average throughput for a duration sufficient to achieve statistical significance.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.10. RECEIVER SPURIOUS EMISSIONS

TEST LIMIT

Clause 7.9 of ETSI TS 136 521-1 V13.3.0 (2016-12) applies.

DEFINITION AND APPLICABILITY

The spurious emissions power is the power of emissions generated or amplified in a receiver that appear at the UE antenna connector.

CONFORMANCE REQUIREMENTS

Test Environment: normal (see section 1.6).
Frequencies to be tested: low range, mid range and high range; as specified in TS 136 508 [2], clause 4.3.1.
Channel bandwidth to be tested: highest channel bandwidth as defined in TS 136 508 [2], clause 4.3.1.

Uplink/Downlink configurations: as specified in TS 136 521-1 [1]:

1) Connect a spectrum analyzer (or other suitable test equipment) to the UE antenna connectors.

2) The parameter settings for the cell are set up according to TS 136 508 [2], clause 4.4.3.

3) Downlink signals are initially set up according to TS 136 521-1 [1], clauses C.0, C.1 and C.3.1.

4) The DL Reference Measurement channels are set according to TS 136 521-1 [1].

5) Propagation conditions are set according to TS 136 521-1 [1], clause B.0.

6) Ensure the UE is in State 3A-RF according to TS 136 508 [2], clause 5.2A.2.

The power of any narrow band CW spurious emission shall not exceed the maximum level specified in Table 7.9.3-1

Table 7.9.3-1: General receiver spurious emission requirements

Frequency Band	Measurement Bandwidth	Maximum level	Note
30MHz ≤ f < 1GHz	100 kHz	-57 dBm	
1GHz ≤ f ≤ 12.75 GHz	1 MHz	-47 dBm	
12.75 GHz ≤ f ≤ 5th harmonic of the upper frequency edge of the DL operating band in GHz	1 MHz	-47 dBm	Note 1
Note 1: Applies only for Band 22, Band 42 and Band 43. Note 2: Unused PDCCH resources are padded with resource element groups with power level given by PDCCH_RA/RB as defined in Annex C.3.1.			

SET UP FOR TESTING

1) Sweep the spectrum analyser (or other suitable test equipment) over a frequency range from 30 MHz to 12,75 GHz and measure the average power of the spurious emissions.

2) Repeat step 1) for all E-UTRA Rx antennas of the UE.

3) Repeat for applicable test frequencies, channel bandwidths and operating band combinations.

Details of the test method can be found in TS 136 521-1 [1], clause 7.9.

TEST RESULTS

☒ **Passed** ☐ **Not Applicable**

Note:
Please refer to AIT23052502CW3_Appendix Data_ LTE

4.11. CONTROL AND MONITORING FUNCTIONS (UE)

TEST LIMIT

The maximum measured power during the duration of the test shall not exceed -30 dBm.Table 4.2.4.1.2-1: General spurious emissions requirements.

TEST PROCEDURE

1) At the start of the test, the UE shall be switched off. The UE antenna connector shall be connected to a power measuring equipment, with the following characteristics:
   - The RF bandwidth shall exceed the total operating transmit frequency range of the UE for operation with an applicable part.
   - The response time of the power measuring equipment shall be such that the measured power has reached within 1 dB of its steady state value within 100 µs of a CW signal being applied.
   - It shall record the maximum power measured.
   NOTE: The equipment may include a video low pass filter to minimize its response to transients or Gaussian noise peaks.
2) The UE shall be switched on for a period of approximately fifteen minutes, and then switched off.
3) The EUT shall remain switched off for a period of at least thirty seconds, and shall then be switched on for a period of approximately one minute.
4) The maximum power emitted from the UE throughout the duration of the test shall be recorded. The results obtained shall be compared to the limits in clause 4.2.4.2 in order to prove compliance.

TEST RESULTS

Test Mode	TX Mode

Test Case	Power-Real (Voltage)	Max Level (dBm)	Margin to Limit (dBm)	Verdict
Band 1	DC 3.8V	-46.58	-16.58	PASS
Band 3	DC 3.8V	-46.03	-16.03	PASS
Band 7	DC 3.8V	-49.21	-19.21	PASS
Band 8	DC 3.8V	-46.66	-16.66	PASS
Band 20	DC 3.8V	-45.37	-15.37	PASS

Note: Margin to Limit = Max Level – Limit (-30dBm)

4.12. RADIATED EMISSIONS (UE)

TEST LIMIT

The frequency boundary and reference bandwidths for the detailed transitions of the limits between the requirements for out-of-band emissions and spurious emissions are based on Recommendations ITU-R SM.329-12 [1] and SM.1539-1 [i.6].

The requirements shown in table 4.2.2.2-1 are only applicable for frequencies in the spurious domain

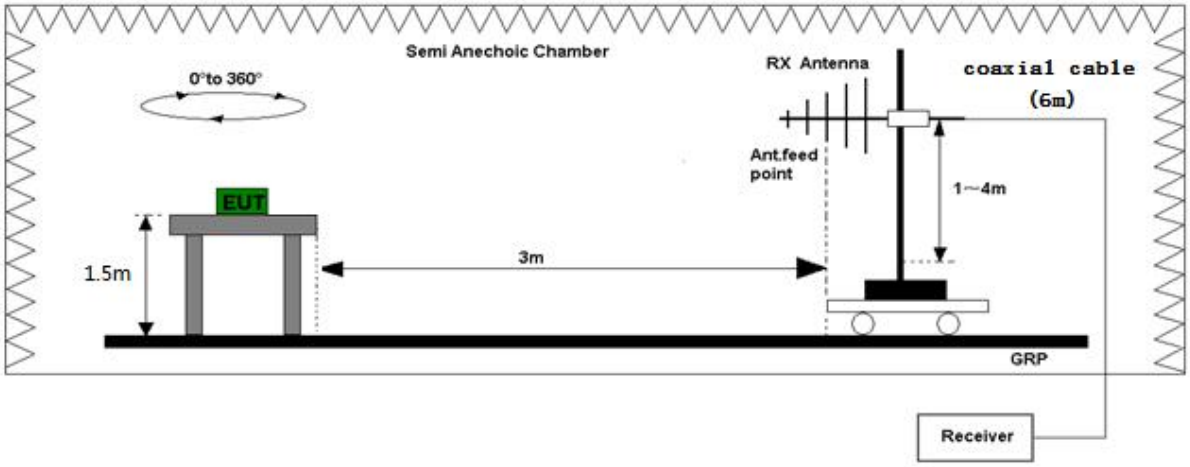
Table 4.2.2.2-1: Radiated spurious emissions requirements (UE)

Frequency	Minimum requirement (e.r.p.)/ reference bandwidth idle mode	Minimum requirement (e.r.p.)/ reference bandwidth traffic mode	Applicability
30 MHz ≤ f < 1 000 MHz	-57 dBm/100 kHz	-36 dBm/100 kHz	All
1 GHz ≤ f < 12,75 GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All
12,75 GHz ≤ f < 5th harmonic of the upper frequency edge of the Uplink operating band in GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All (note 3)
12,75 GHz < f < 26 GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All (note 4)
fc - 2,5 × 5 MHz < f < fc + 2,5 × 5 MHz (note 1 and note 2)	Not defined	Not defined	UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3
fc - 2,5 × $BW_{Channel}$ MHz < f < fc + 2,5 × $BW_{Channel}$ MHz (note 1 and note 2)	Not defined	Not defined	E-UTRA FDD, E-UTRA TDD, Mobile WiMAX™
fc - (1,5 x $BW_{Channel}$ + 5) MHz < f < fc + (1,5 x $BW_{Channel}$ + 5) MHz (note 1)	Not defined	Not defined	NR operating in FR1
fc - 2,5 × 10 MHz < f < fc + 2,5 × 10 MHz (note 1 and note 2)	Not defined	Not defined	UTRA TDD, 7,68 Mcps option
fc - 4 MHz < f < fc + 4 MHz (note 1 and note 2)	Not defined	Not defined	UTRA TDD, 1,28 Mcps option cdma2000, spreading rate 1

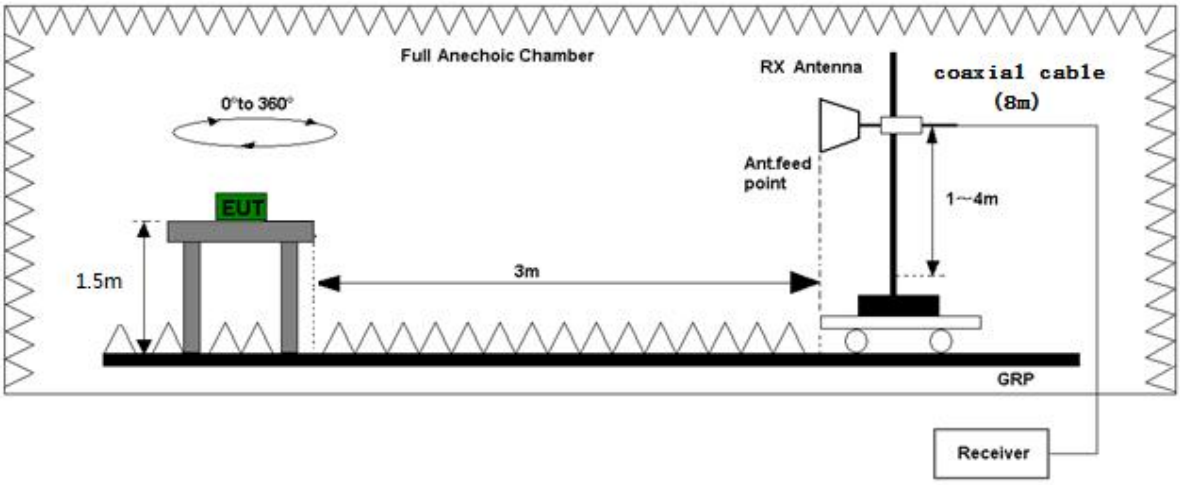
NOTE 1: fc is the UE transmit centre frequency.
NOTE 2: This frequency range is not in the spurious domain, no requirement is then defined for this frequency range.
NOTE 3: Applies for Band that the upper frequency edge of the Uplink Band more than 2,69 GHz.
NOTE 4: Applies for Band that the upper frequency edge of the Uplink Band more than 5,2 GHz.

TEST SETUP

Radiated Emission Test Set-Up Frequency 30 MHz ~ 1 GHz



Radiated Emission Test Set-Up Frequency Above 1 GHz



TEST PROCEDURE

Step 1:

The measurement is carried out in the fully anechoic chamber. EUT was placed on a 1.50 meter high nonconductive table at a 3 meter test distance from the test receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the EUT. The height of receiving antenna is 1.50 m and varies in certain range to find the maximum power value. Connect the EUT to the BTS simulator via the air interface.

The measurement is carried out using a spectrum analyzer or receiver. Then the antenna height and turn table rotation is adjusted till the maximum power value is founded on spectrum analyzer or receiver.

A filter is necessary in the band near to the carrier frequency. A filter is needed to avoid the distortion of the testing equipment in the band above the carrier frequency.

Step 2:

A log-periodic antenna or double-ridged waveguide 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.

Calculation procedure:

The data of cable loss, antenna gain and air loss has been calibrated in full testing frequency range before the testing.

The power of the Radiated Spurious Emissions is calculated by adding the cable loss, antenna gain and air loss. The basic equation with a sample calculation is as followed:

P=PR+LC+LA-G

Where

P: Power of the Radiated Spurious Emissions (dBm)

PR: reading of the receiver (dBm)

LC: Cable Lose and power amilifer gain and filter cable loss (dB)

LA: Air loss (dB)

G: Antenna Gain (dBi)

TEST RESULTS

This test was carried out in all the test modes, and record worst case as blow.

The EUT has met the requirements of 3GPP2 C.S0011-A's requirement.

Remark: Normal and extreme voltage test conditions have been tested, only the measurement data of normal voltage condition are reported.

Note: Pre-scan all kinds of bandwidth and channel, so only show the worse test data on the report.

LTE Band 1(5MHz)				
Test mode:		**Traffic Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	3900.00	-38.62	-30.00	8.62
2	5850.00	-41.66	-30.00	11.66
3	7800.00	-38.62	-30.00	8.62
4	9750.00	-40.81	-30.00	10.81
--	--	--	--	--
Test mode:		**Traffic Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	3900.00	-37.13	-30.00	7.13
2	5850.00	-40.28	-30.00	10.28
3	7800.00	-37.14	-30.00	7.14
4	9750.00	-39.76	-30.00	9.76
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	366.88	-72.09	-54.00	18.09
2	872.19	-70.80	-54.00	16.80
3	3608.11	-63.01	-47.00	16.01
4	5497.98	-64.41	-47.00	17.41
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	285.39	-70.62	-54.00	16.62
2	568.06	-69.42	-54.00	15.42
3	2004.82	-61.79	-47.00	14.79
4	8706.87	-63.03	-47.00	16.03
--	--	--	--	--

RESULT: PASS

Note:

1. Result Level = Reading Level + Correct Factor.
2.Margin Level = Limit Value- Result Level

LTE Band 3(1.4MHz)				
Test mode:		**Traffic Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	3495.00	-37.91	-30.00	7.91
2	5242.50	-39.46	-30.00	9.46
3	6990.00	-40.33	-30.00	10.33
4	8737.50	-41.64	-30.00	11.64
--	--	--	--	--
Test mode:		**Traffic Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	3495.00	-36.81	-30.00	6.81
2	5242.50	-38.25	-30.00	8.25
3	6990.00	-38.92	-30.00	8.92
4	8737.50	-40.55	-30.00	10.55
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	369.15	-74.71	-54.00	20.71
2	854.02	-69.88	-54.00	15.88
3	1673.66	-62.31	-47.00	15.31
4	9247.19	-64.37	-47.00	17.37
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	224.56	-73.69	-54.00	19.69
2	502.33	-68.60	-54.00	14.60
3	3703.95	-60.82	-47.00	13.82
4	7532.52	-63.36	-47.00	16.36
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RESULT: PASS

Note:

1. Result Level = Reading Level + Correct Factor.
2.Margin Level = Limit Value- Result Level

LTE Band 7(5MHz)

Test mode:		Traffic Mode	Polarity:	Horizontal
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	5070.00	-39.31	-30.00	9.31
2	7605.00	-38.31	-30.00	8.31
3	10140.00	-39.48	-30.00	9.48
4	12675.00	-41.06	-30.00	11.06
--	--	--	--	--
Test mode:		**Traffic Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	5070.00	-38.11	-30.00	8.11
2	7605.00	-37.22	-30.00	7.22
3	10140.00	-38.16	-30.00	8.16
4	12675.00	-40.04	-30.00	10.04
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	308.39	-73.81	-54.00	19.81
2	512.78	-69.29	-54.00	15.29
3	4906.50	-64.76	-47.00	17.76
4	6032.90	-63.12	-47.00	16.12
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	312.78	-72.74	-54.00	18.74
2	572.01	-67.94	-54.00	13.94
3	4349.04	-63.42	-47.00	16.42
4	7254.29	-62.11	-47.00	15.11
--	--	--	--	--

RESULT: PASS

Note:

1. Result Level = Reading Level + Correct Factor.
2.Margin Level = Limit Value- Result Level

LTE Band 8(1.4MHz)				
Test mode:		**Traffic Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	1795.00	-37.01	-30.00	7.01
2	2692.50	-41.03	-30.00	11.03
3	3590.00	-41.38	-30.00	11.38
4	4487.50	-40.86	-30.00	10.86
--	--	--	--	--
Test mode:		**Traffic Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	1795.00	-35.55	-30.00	5.55
2	2692.50	-39.99	-30.00	9.99
3	3590.00	-40.20	-30.00	10.20
4	4487.50	-39.76	-30.00	9.76
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	161.75	-73.01	-54.00	19.01
2	611.90	-72.02	-54.00	18.02
3	3486.50	-62.06	-47.00	15.06
4	6325.67	-64.17	-47.00	17.17
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	247.32	-71.80	-54.00	17.80
2	689.20	-70.70	-54.00	16.70
3	2080.76	-60.92	-47.00	13.92
4	6349.17	-62.69	-47.00	15.69
--	--	--	--	--

RESULT: PASS

Note:

1. Result Level = Reading Level + Correct Factor.
2.Margin Level = Limit Value- Result Level

LTE Band 20(5MHz)

Test mode:		Traffic Mode	Polarity:	Horizontal
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	1694.00	-35.63	-30.00	5.63
2	2541.00	-35.93	-30.00	5.93
3	3388.00	-35.77	-30.00	5.77
4	4235.00	-41.81	-30.00	11.81
--	--	--	--	--
Test mode:		**Traffic Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	1694.00	-34.43	-30.00	4.43
2	2541.00	-34.47	-30.00	4.47
3	3388.00	-34.46	-30.00	4.46
4	4235.00	-40.67	-30.00	10.67
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Horizontal**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	326.69	-73.61	-54.00	19.61
2	836.73	-69.63	-54.00	15.63
3	4098.14	-63.03	-47.00	16.03
4	7761.79	-64.80	-47.00	17.80
--	--	--	--	--
Test mode:		**Idle Mode**	**Polarity:**	**Vertical**
Suspected List				
NO.	Freq. [MHz]	Result Level [dBm]	Limit (dBm)	Margin (dB)
1	65.84	-72.54	-54.00	18.54
2	822.48	-68.13	-54.00	14.13
3	1430.51	-61.54	-47.00	14.54
4	9052.20	-63.62	-47.00	16.62
--	--	--	--	--

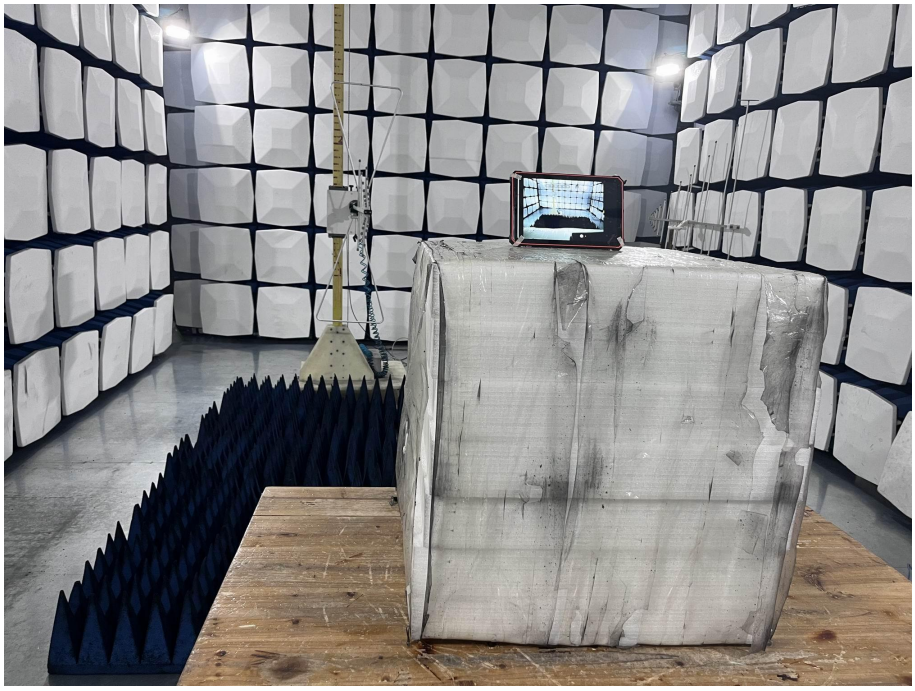
RESULT: PASS

Note:

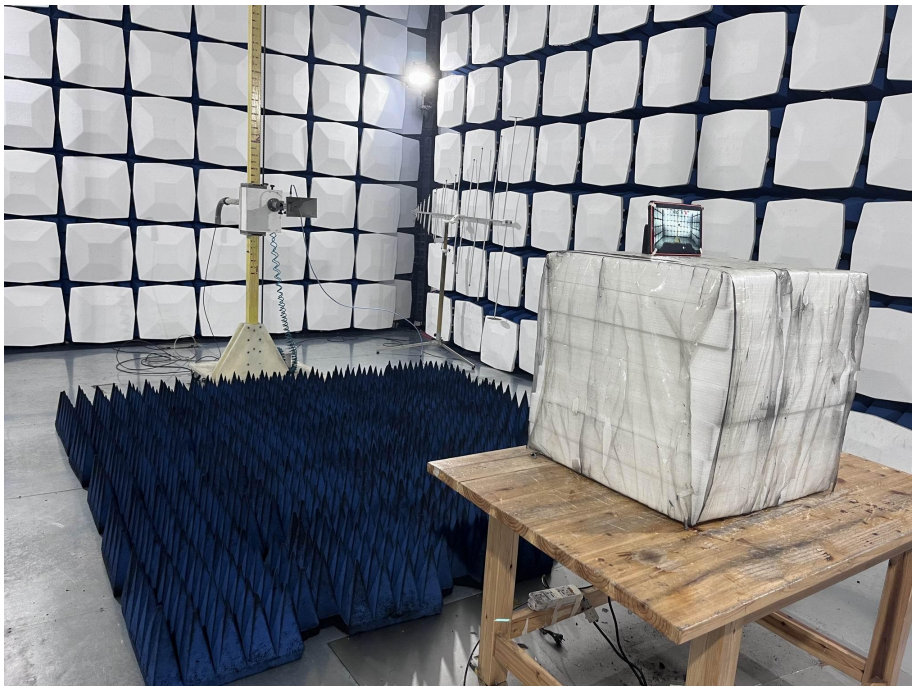
1. Result Level = Reading Level + Correct Factor.
2.Margin Level = Limit Value- Result Level

5. PHOTOGRAPHS OF TEST SETUP

RADIATED EMISSION TEST SETUP



RADIATED EMISSION ABOVE 1G TEST SETUP



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