

Test Report

Test Report No.:	TCT250324E050	
Date of issue	Jun. 16, 2025	
Testing laboratory	Shenzhen TCT Testing Technology Co., Ltd.	
Testing location/ address:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China	
Applicant's name	Shenzhen Huafurui Technology Co., Ltd.	
Address	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China	
Manufacturer's name.....	Shenzhen Huafurui Technology Co., Ltd.	
Address	Unit 601-03, 6/F, Block A, Building 1, Ganfeng Technology Building, No. 993 Jiaxian Road, Xiangjiaotang Community, Bantian Street, Longgang District, Shenzhen, P.R. China	
Standard(s).....:	ETSI EN 301 908-1 V15.2.1 (2023-01) ETSI EN 301 908-25 V15.1.1 (2024-10) ETSI TS 138 521-1 V17.11.0 (2024-01) ETSI TS 138 521-3 V17.11.0 (2024-01)	
Product Name	Smartphone	
Trade Mark.....:	CUBOT	
Model/Type reference	X100	
Rating(s)	Refer to EUT description of page 3	
Date of receipt of test item	Mar. 24, 2025	
Date (s) of performance of test	Mar. 24, 2025 ~ Jun. 16, 2025	
Tested by (+signature) ...:	Aaron MO	
Check by (+signature):	Beryl ZHAO	
Approved by (+signature):	Tomsin	

General disclaimer:

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1. General Product Information

1.1. EUT description

Product Name	Smartphone
Model/Type reference	X100
Hardware Version	3370V-MQ V1
Software Version.....	CUBOT_X100_F031C_V01
Operation Frequency.....	NR n1: (UL)1920MHz~1980MHz, (DL)2110MHz~2170MHz NR n3: (UL)1710MHz~1785MHz, (DL)1805MHz~1880MHz NR n7: (UL) 2500MHz~2570MHz, (DL) 2620MHz~2690MHz
Modulation Technology.....	DFT-BPSK, DFT-QPSK, DFT-16QAM, DFT-64QAM, DFT-256QAM, CP-BPSK, CP-QPSK, CP-16QAM, CP-64QAM, CP-256QAM
Antenna Type	PIFA Antenna
Antenna Gain	NR n1: -0.1dBi NR n3: -0.7dBi NR n7: -0.9dBi
Rating(s)	Adapter Information 1: Model: TD-203G200170VF01 Input: AC 100-240V, 50/60Hz, 0.6A Output: DC 5V, 3A/ DC 9V, 3A/ DC 12V, 2.5A/ DC 15V, 2A/ DC 20V, 1.5A PPS: DC 3.3-16V, 2A/ DC 3.3-11V, 3A Total Output Power: 33W Max Adapter Information 2: Model: HJ-PD33W-EU Input: AC 100-240V, 50/60Hz, 0.8A Output: DC 5.0V, 3.0A, 15.0W or DC 9.0V, 3.0A, 27.0W or DC 12.0V, 2.75A, 33.0W MAX Rechargeable Li-polymer Battery DC 3.87V

Note: The antenna gain listed in this report is provided by applicant, and the test laboratory is not responsible for this parameter.

1.2. Model(s) list

None.

1.3. EUT Test Channels

NR n1	5 MHz Bandwidth	Lowest	384500	1922.5 MHz
		Middle	390000	1950.0 MHz
		Highest	395500	1977.5 MHz
	25 MHz Bandwidth	Lowest	386500	1932.5 MHz
		Middle	390000	1950.0 MHz
		Highest	393500	1967.5 MHz
	50 MHz Bandwidth	Lowest	389000	1935.0MHz
		Middle	390000	1950.0 MHz
		Highest	391000	1955.0 MHz
NR n3	5 MHz Bandwidth	Lowest	342500	1712.5 MHz
		Middle	349500	1747.5 MHz
		Highest	356500	1782.5 MHz
	20 MHz Bandwidth	Lowest	344000	1720.0 MHz
		Middle	349500	1747.5 MHz
		Highest	355000	1775.0 MHz
	30 MHz Bandwidth	Lowest	345000	1725.0 MHz
		Middle	349500	1747.5 MHz
		Highest	354000	1770.0 MHz
NR n7	5 MHz Bandwidth	Lowest	500500	2502.5 MHz
		Middle	507000	2535.0 MHz
		Highest	513500	2567.5 MHz
	10 MHz Bandwidth	Lowest	501000	2505.0 MHz
		Middle	507000	2535.0 MHz
		Highest	513000	2565.0 MHz
	20 MHz Bandwidth	Lowest	502000	2510.0 MHz
		Middle	507000	2535.0 MHz
		Highest	512000	2560.0 MHz

2. Test Result Summary

ETSI EN 301 908-1 V15.2.1 (2023-01)

Test No.	Clause No.	Description of Test	Result
5.13	4.2.2	Radiated emissions	PASS
5.12	4.2.4	Control and Monitoring Functions (UE)	PASS

ETSI EN 301 908-25 V15.1.1 (2024-10), ETSI TS 138 521-1 V17.11.0 (2024-01)

Test No.	Clause No. of EN 301908-25	Clause No. of ETSI TS 138 521-1	Description of Test	Result
5.1	4.1.2.2	6.2.1	Transmitter maximum output power	PASS
5.4	4.1.2.3	6.3.1	Transmitter minimum output power	PASS
5.2	4.1.2.4	6.5.2.2	Transmitter spectrum emission mask	PASS
5.5	4.1.2.5	6.5.2.4	Transmitter adjacent channel leakage power ratio	PASS
5.3	4.1.2.6	6.5.3	Transmitter spurious emissions	PASS
5.6	4.1.2.7	7.3	Receiver Reference Sensitivity Level	PASS
5.7	4.1.2.8	7.5	Receiver adjacent channel selectivity (ACS)	PASS
5.8	4.1.2.9	7.6	Receiver blocking characteristics	PASS
5.10	4.1.2.10	7.7	Receiver spurious response	PASS
5.9	4.1.2.11	7.8	Receiver intermodulation characteristics	PASS
5.11	4.1.2.12	7.9	Receiver spurious emissions	PASS
5.12	4.1.2.13	6.3.2	Transmit OFF power	PASS

Note:

- 1 Pass: Test item meets the requirement.
2. N/A: Test case does not apply to the test object.
3. The test result judgment is decided by the limit of test standard.

3. General Information

3.1. Test environment and mode

Item	Normal condition	Extreme condition			
		HVHT	LVHT	HVLT	LVLT
Temperature	+25°C	+35°C	+35°C	-20°C	-20°C
Voltage	DC 3.87V	DC 4.35V	DC 3.5V	DC 4.35V	DC 3.5V
Humidity	20%-75%				
Atmospheric Pressure:	1008 mbar				
Test Mode:	Keep the EUT in Transmitting mode by Simulator Base station.				

3.2. Description of Support Units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Equipment	Model No.	Serial No.	FCC ID	Trade Name
/	/	/	/	/

Note:

1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.

3.3. Test Instruments List

Name	Model No.	Manufacturer	Date of Cal.	Due Date
EMI Test Receiver	ESCI7	R&S	Jan. 21, 2025	Jan. 20, 2026
Spectrum Analyzer	FSQ40	R&S	Jun. 27, 2024	Jun. 26, 2025
Pre-amplifier	8447D	HP	Jun. 27, 2024	Jun. 26, 2025
Pre-amplifier	LNPA_0118G-45	SKET	Jan. 21, 2025	Jan. 20, 2026
Pre-amplifier	LNPA_1840G-50	SKET	Jan. 21, 2025	Jan. 20, 2026
Broadband Antenna	VULB9163	Schwarzbeck	Jun. 29, 2024	Jun. 28, 2025
Horn Antenna	BBHA 9120D	Schwarzbeck	Jun. 29, 2024	Jun. 28, 2025
Horn Antenna	BBHA 9170	Schwarzbeck	Jan. 23, 2025	Jan. 22, 2026
Coaxial cable	RE-03-D	SKET	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	RE-03-M	SKET	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	RE-03-L	SKET	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	RE-04-D	SKET	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	RE-04-M	SKET	Jun. 27, 2024	Jun. 26, 2025
Coaxial cable	RE-04-L	SKET	Jun. 27, 2024	Jun. 26, 2025
EMI Test Software	FA-03A2 RE+	EZ EMC	/	/
Spectrum Analyzer	N9020A	Agilent	Jun. 27, 2024	Jun. 26, 2025
Signal Generator	N5182A	Agilent	Jun. 27, 2024	Jun. 26, 2025
Radio communication test station	MT8000A	Anritsu	Jan. 21, 2025	Jan. 20, 2026
Radio communication analyzer	MT8821C	Anritsu	Jan. 21, 2025	Jan. 20, 2026
Signal Generator	N5182B	Agilent	Jan. 21, 2025	Jan. 20, 2026
Signal Generator	N5173B	Agilent	Jan. 21, 2025	Jan. 20, 2026
Spectrum Analyzer	FSV40-N	R&S	Jan. 21, 2025	Jan. 20, 2026
Power detector box	MW100-RFCB	MWRFTest	Jan. 21, 2025	Jan. 20, 2026
Radio frequency control box	MW500-RFCB	MWRFTest	/	/
Programable tempratuce and humidity chamber	JQ-2000	JQ	Jun. 27, 2024	Jun. 26, 2025

4. Test Facilities

Shenzhen TCT Testing Technology Co., Ltd.

Address: 2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict,
Bao'an District, Shenzhen, Guangdong, China

TEL: +86-755-27673339

5. Measurement Uncertainty

The reported uncertainty of measurement $y \pm U$, where expanded uncertainty U is based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95 %.

No.	Item	MU
1	RF power, conducted	± 0.12 dB
2	Spurious emissions, conducted	± 0.11 dB
3	All emissions, radiated(<1 GHz)	± 4.56 dB
4	All emissions, radiated(1 GHz - 18 GHz)	± 4.22 dB
5	All emissions, radiated(18 GHz- 40 GHz)	± 4.36 dB
6	Temperature	± 0.1 °C
7	Humidity	± 1.0 %

6. Test Results and Measurement Data

6.1. Transmitter Maximum Output Power

6.1.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.2																																																																																																																																																																																																				
Test Method:	ETSI EN 301 908-25 clause 5.1.3.1																																																																																																																																																																																																				
Test Setup:	<div><div><div>EUT</div><div>DC Power</div><div>SS</div></div><div>Thermal Chamber</div></div>																																																																																																																																																																																																				
Limit:	<div>Table 4.1.2.2.1.2-1: Maximum Output Power test requirement for Power Class 3</div> <table><tr><th rowspan="2">NR band</th><th rowspan="2">Class 1 (dBm)</th><th rowspan="2">Tolerance (dB)</th><th rowspan="2">Class 2 (dBm)</th><th rowspan="2">Tolerance (dB)</th><th rowspan="2">Class 3 (dBm)</th><th colspan="2">Tolerance (dB)</th></tr><tr><th>BW ≤ 40MHz</th><th>40MHz < BW ≤ 100MHz</th></tr><tr><td>n1</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n3</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7 (note 3)</td><td></td></tr><tr><td>n7</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7 (note 3)</td><td></td></tr><tr><td>n8</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7 (note 3)</td><td></td></tr><tr><td>n20</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7 (note 3)</td><td></td></tr><tr><td>n28</td><td></td><td></td><td></td><td></td><td>23</td><td>+2/-2,5</td><td></td></tr><tr><td>n38</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n40</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td>±2±1,0</td></tr><tr><td>n41</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7 (note 3)</td><td>±2±1,0 (note 3)</td></tr><tr><td>n50</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td>±2±1,0</td></tr><tr><td>n51</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n65</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n77</td><td></td><td></td><td></td><td></td><td>23</td><td>+2+1,0/-3-1,0</td><td>+2+1,0/-3-1,0</td></tr><tr><td>n78</td><td></td><td></td><td></td><td></td><td>23</td><td>+2+1,0/-3-1,0</td><td>+2+1,0/-3-1,0</td></tr><tr><td>n80</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n81</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n82</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr><tr><td>n83</td><td></td><td></td><td></td><td></td><td>23</td><td>+2+0,7/-2,5-0,7</td><td></td></tr><tr><td>n84</td><td></td><td></td><td></td><td></td><td>23</td><td>±2±0,7</td><td></td></tr></table> <div><div>NOTE 1: Void..</div><div>NOTE 2: Power class 3 is default power class unless otherwise stated.</div><div>NOTE 3: Refers to the transmission bandwidths (Figure 5.3.3-1 of ETSI TS 138 521-1 [1]) 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.</div></div> <div>Table 4.1.2.2.1.2-2: Maximum Output Power test requirement for Power Class 2</div> <table><tr><th rowspan="2">NR band</th><th rowspan="2">Class 1 (dBm)</th><th rowspan="2">Tolerance (dB)</th><th rowspan="2">Class 2 (dBm)</th><th colspan="2">Tolerance (dB)</th><th rowspan="2">Class 3 (dBm)</th><th rowspan="2">Tolerance (dB)</th></tr><tr><th>BW ≤ 40MHz</th><th>40MHz < BW ≤ 100MHz</th></tr><tr><td>n41</td><td></td><td></td><td>26</td><td>+2+0,7/-3-0,7 (note 3)</td><td>+2+1,0/-3-1,0 (note 3)</td><td></td><td></td></tr><tr><td>n77</td><td></td><td></td><td>26</td><td>+2+1,0/-3-1,0</td><td>+2+1,0/-3-1,0</td><td></td><td></td></tr><tr><td>n78</td><td></td><td></td><td>26</td><td>+2+1,0/-3-1,0</td><td>+2+1,0/-3-1,0</td><td></td><td></td></tr></table> <div><div>NOTE 1:Void.</div><div>NOTE 2: Power class 3 is default power class unless otherwise stated.</div><div>NOTE 3: Refers to the transmission bandwidths (Figure 5.3.3-1 of ETSI TS 138 521-1 [1]) 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.</div></div>	NR band	Class 1 (dBm)	Tolerance (dB)	Class 2 (dBm)	Tolerance (dB)	Class 3 (dBm)	Tolerance (dB)		BW ≤ 40MHz	40MHz < BW ≤ 100MHz	n1					23	±2±0,7		n3					23	±2±0,7 (note 3)		n7					23	±2±0,7 (note 3)		n8					23	±2±0,7 (note 3)		n20					23	±2±0,7 (note 3)		n28					23	+2/-2,5		n38					23	±2±0,7		n40					23	±2±0,7	±2±1,0	n41					23	±2±0,7 (note 3)	±2±1,0 (note 3)	n50					23	±2±0,7	±2±1,0	n51					23	±2±0,7		n65					23	±2±0,7		n77					23	+2+1,0/-3-1,0	+2+1,0/-3-1,0	n78					23	+2+1,0/-3-1,0	+2+1,0/-3-1,0	n80					23	±2±0,7		n81					23	±2±0,7		n82					23	±2±0,7		n83					23	+2+0,7/-2,5-0,7		n84					23	±2±0,7		NR band	Class 1 (dBm)	Tolerance (dB)	Class 2 (dBm)	Tolerance (dB)		Class 3 (dBm)	Tolerance (dB)	BW ≤ 40MHz	40MHz < BW ≤ 100MHz	n41			26	+2+0,7/-3-0,7 (note 3)	+2+1,0/-3-1,0 (note 3)			n77			26	+2+1,0/-3-1,0	+2+1,0/-3-1,0			n78			26	+2+1,0/-3-1,0	+2+1,0/-3-1,0		
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Table 4.1.2.5.2-1: UE Power Class for UL MIMO in closed loop spatial multiplexing scheme

NR band	Class 1 (dBm)	Tolerance (dB)	Class 2 (dBm)	Tolerance (dB)		Class 3 (dBm)	Tolerance (dB)		Class 4 (dBm)	Tolerance (dB)
				BW ≤ 40MHz	40MHz < BW ≤ 100MHz		BW ≤ 40MHz	40MHz < BW ≤ 100MHz		
n41			26	+2+0,7/-3-0,7 (note 1)	+2+1,0/-3-1,0 (note 1)	23	+2+0,7/-3-0,7 (note 1)	+2+1,0/-3-1,0 (note 1)		
n77			26	+2+1,0/-3-1,0	+2+1,0/-3-1,0	23	+2+1,0/-3-1,0	+2+1,0/-3-1,0		
n78			26	+2+1,0/-3-1,0	+2+1,0/-3-1,0	23	+2+1,0/-3-1,0	+2+1,0/-3-1,0		

NOTE 1: Refers to the transmission bandwidths 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.

NOTE 2: Void.

Test Procedure:

1. SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0_1 for C_RNTI to schedule the UL RMC according to Table 5.1.3.1.1.1-1. 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 200ms starting from the first TPC command in this step 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 active sub-frame (1ms) and in the uplink symbols. For TDD symbols with transient periods are not under test.
4. For UEs supporting Power Class 2, repeat steps 1~3 on the applicable bands with message exception of P-Max defined in Table 6.2.1.4.3-2 in ETSI TS 138 521-1 [1].

Test Instrument:

Refer to Item 3.3

Test Result:

PASS

6.2. Transmitter Spectrum Emission Mask

6.2.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.4																																																																																																																																																																																																																																																																																																																																																	
Test Method:	ETSI EN 301 908-25 clause 5.1.3.3																																																																																																																																																																																																																																																																																																																																																	
Test Setup:	<div><div><div>EUT</div><div>DC Power</div><div>SS</div></div><div>Thermal Chamber</div></div>																																																																																																																																																																																																																																																																																																																																																	
Limit:	<div>Table 4.1.2.4.1.2.1-1: General NR spectrum emission mask, for BW ≤ 100MHz and f ≤ 3,0GHz</div> <table><tr><th></th><th colspan="13">Spectrum emission limit (dBm) / Channel bandwidth</th><th>Measurement bandwidth</th></tr><tr><th>Δf_{00B} (MHz)</th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th><th>25 MHz</th><th>30 MHz</th><th>40 MHz</th><th>50 MHz</th><th>60 MHz</th><th>80 MHz</th><th>90 MHz</th><th>100 MHz</th><th></th></tr><tr><td>± 0-1</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td></td><td></td><td></td><td></td><td></td><td>1 % channel bandwidth</td></tr><tr><td>± 0-1</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-22,5</td><td>-22,5</td><td>-22,5</td><td>-22,5</td><td>-22,5</td><td>30 kHz</td></tr><tr><td>± 1-5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td>-8,5</td><td></td></tr><tr><td>± 5-6</td><td>-11,5</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></tr><tr><td>± 6-10</td><td>-23,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td>-11,5</td><td></td></tr><tr><td>± 10-15</td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 15-20</td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 20-25</td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 25-30</td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 30-35</td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 35-40</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 40-45</td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 45-50</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 50-55</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 55-60</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 60-65</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 65-80</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 80-85</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 85-90</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td>-23,5</td><td></td></tr><tr><td>± 90-95</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td><td></td></tr><tr><td>± 95-100</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td></tr><tr><td>± 100-105</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-23,5</td></tr></table> <div><div>Note 1:</div><div>The first and last measurement position with a 30 kHz filter is at Δf_{00B} equals to 0,015 MHz and 0,985 MHz.</div><div>Note 2:</div><div>At the boundary of spectrum emission limit, the first and last measurement position with a 1 MHz filter is the inside of +0,5MHz and -0,5MHz, respectively.</div><div>Note 3:</div><div>The measurements are to be performed above the upper edge of the channel and below the lower edge of the channel.</div></div>		Spectrum emission limit (dBm) / Channel bandwidth													Measurement bandwidth	Δf_{00B} (MHz)	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	80 MHz	90 MHz	100 MHz		± 0-1	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5						1 % channel bandwidth	± 0-1								-22,5	-22,5	-22,5	-22,5	-22,5	30 kHz	± 1-5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5		± 5-6	-11,5													± 6-10	-23,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5		± 10-15		-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 15-20			-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 20-25				-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 25-30					-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 30-35						-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 35-40							-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 40-45							-23,5	-23,5	-23,5	-23,5	-23,5	-23,5		± 45-50								-23,5	-23,5	-23,5	-23,5	-23,5		± 50-55								-23,5	-23,5	-23,5	-23,5	-23,5		± 55-60									-23,5	-23,5	-23,5	-23,5		± 60-65									-23,5	-23,5	-23,5	-23,5		± 65-80										-23,5	-23,5	-23,5		± 80-85										-23,5	-23,5	-23,5		± 85-90											-23,5	-23,5		± 90-95												-23,5		± 95-100													-23,5	± 100-105													-23,5
	Spectrum emission limit (dBm) / Channel bandwidth													Measurement bandwidth																																																																																																																																																																																																																																																																																																																																				
Δf_{00B} (MHz)	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	80 MHz	90 MHz	100 MHz																																																																																																																																																																																																																																																																																																																																						
± 0-1	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5						1 % channel bandwidth																																																																																																																																																																																																																																																																																																																																					
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± 1-5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5	-8,5																																																																																																																																																																																																																																																																																																																																						
± 5-6	-11,5																																																																																																																																																																																																																																																																																																																																																	
± 6-10	-23,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5	-11,5																																																																																																																																																																																																																																																																																																																																						
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± 15-20			-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 20-25				-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 25-30					-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 30-35						-23,5	-23,5	-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 35-40							-23,5	-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 40-45							-23,5	-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
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± 50-55								-23,5	-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 55-60									-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 60-65									-23,5	-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 65-80										-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 80-85										-23,5	-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
± 85-90											-23,5	-23,5																																																																																																																																																																																																																																																																																																																																						
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± 100-105													-23,5																																																																																																																																																																																																																																																																																																																																					

Table 4.1.2.4.1.2.1-2: General NR spectrum emission mask,
for $BW \leq 100\text{MHz}$ and $3,0\text{GHz} < f \leq 4,2\text{GHz}$ and $4,2\text{GHz} < f \leq 6,0\text{GHz}$

Spectrum emission limit (dBm) / Channel bandwidth													
Δf_{offset} (MHz)	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	80 MHz	90 MHz	100 MHz	Measurement bandwidth
$\pm 0-1$	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2						1 % channel bandwidth
$\pm 0-1$								-22,2	-22,2	-22,2	-22,2	-22,2	30 kHz
$\pm 1-5$	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	-8,2	
$\pm 5-6$	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	-11,2	
$\pm 6-10$	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	-23,2	
$\pm 10-15$													
$\pm 15-20$													
$\pm 20-25$													
$\pm 25-30$													
$\pm 30-35$													
$\pm 35-40$													
$\pm 40-45$													
$\pm 45-50$													
$\pm 50-55$													
$\pm 55-60$													
$\pm 60-65$													
$\pm 65-80$													
$\pm 80-85$													
$\pm 85-90$													
$\pm 90-95$													
$\pm 95-100$													
$\pm 100-105$													

Note 1: The first and last measurement position with a 30 kHz filter is at Δf_{offset} 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 +0,5MHz and -0,5MHz, respectively.
Note 3: The measurements are to be performed above the upper edge of the channel and below the lower edge of the channel.
Note 4: Void.

Test procedure:

- 1) SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0_1 for C_RNTI to schedule the UL RMC according to table 5.1.3.3.1.1.1-1, table 5.1.3.3.1.1.1-2 and table 5.1.3.3.1.1.1-1. Since the UL has no payload and no loopback data to send the UE sends uplink MAC padding bits on the UL RMC.
2. Send continuously power control “up” commands to the UE until the UE transmits at PUMAX level. Allow at least 200ms for the UE to reach 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 table 4.1.2.2.1.2-1 of the present document or table 6.2.2.5-1 of ETSI TS 138 521-1 [1]. The period of the measurement shall be at least the continuous duration of 1ms over consecutive active uplink slots. For TDD, only slots consisting of only UL symbols are under test.
4. Measure the power of the transmitted signal with a measurement filter of bandwidths according to table 4.1.2.4.1.2.1-1 and 4.1.2.4.1.2.1-2. The centre 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.

Test Instruments:

Refer to Item 3.3

Test Result

PASS

6.3. Transmitter Spurious Emissions

6.3.1. Test Specification

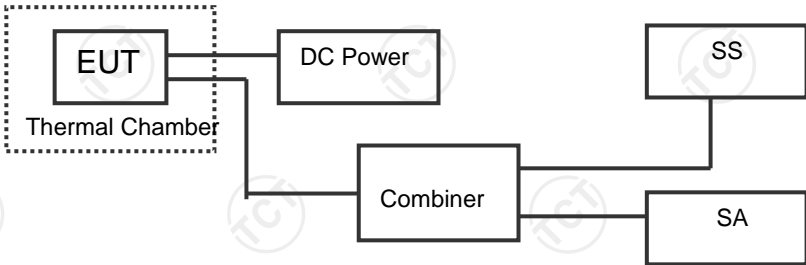
Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.6																															
Test Method:	ETSI EN 301 908-25 clause 5.1.3.5																															
Test Setup:																																
Limit:	<p>Table 4.1.2.6.1.2.1-1: General spurious emissions test requirements</p> <table><tr><th>Frequency Range</th><th>Maximum Level</th><th>Measurement bandwidth</th><th>NOTE</th></tr><tr><td>$9\text{ kHz} \leq f < 150\text{ kHz}$</td><td>-36 dBm</td><td>1 kHz</td><td></td></tr><tr><td>$150\text{ kHz} \leq f < 30\text{ MHz}$</td><td>-36 dBm</td><td>10 kHz</td><td></td></tr><tr><td>$30\text{ MHz} \leq f < 1000\text{ MHz}$</td><td>-36 dBm</td><td>100 kHz</td><td></td></tr><tr><td rowspan="2">$1\text{ GHz} \leq f < 12,75\text{ GHz}$</td><td>-30 dBm</td><td>1 MHz</td><td>4</td></tr><tr><td>-25 dBm</td><td>1 MHz</td><td>3</td></tr><tr><td>$12,75\text{ GHz} \leq f < 5\text{th harmonic of the upper frequency edge of the UL operating band in GHz}$</td><td>-30 dBm</td><td>1 MHz</td><td>1</td></tr><tr><td>$12,75\text{ GHz} < f < 26\text{ GHz}$</td><td>-30 dBm</td><td>1 MHz</td><td>2</td></tr></table> <p>NOTE 1: Applies for Band that the upper frequency edge of the UL Band more than 2,69 GHz</p> <p>NOTE 2: Applies for Band that the upper frequency edge of the UL Band more than 5,2 GHz</p> <p>NOTE 3: Applies for Band n41, CA configurations including Band n41, and EN-DC configurations that include n41 specified in clause 5.2B of ETSI TS 138 101-3 [8] when NS_04 is signalled.</p> <p>NOTE 4: Does not apply for Band n41, CA configurations including Band n41, and EN-DC configurations that include n41 specified in subclause 5.2B of TS 38.101-3 [3] when NS_04 is signalled.</p>	Frequency Range	Maximum Level	Measurement bandwidth	NOTE	$9\text{ kHz} \leq f < 150\text{ kHz}$	-36 dBm	1 kHz		$150\text{ kHz} \leq f < 30\text{ MHz}$	-36 dBm	10 kHz		$30\text{ MHz} \leq f < 1000\text{ MHz}$	-36 dBm	100 kHz		$1\text{ GHz} \leq f < 12,75\text{ GHz}$	-30 dBm	1 MHz	4	-25 dBm	1 MHz	3	$12,75\text{ GHz} \leq f < 5\text{th harmonic of the upper frequency edge of the UL operating band in GHz}$	-30 dBm	1 MHz	1	$12,75\text{ GHz} < f < 26\text{ GHz}$	-30 dBm	1 MHz	2
Frequency Range	Maximum Level	Measurement bandwidth	NOTE																													
$9\text{ kHz} \leq f < 150\text{ kHz}$	-36 dBm	1 kHz																														
$150\text{ kHz} \leq f < 30\text{ MHz}$	-36 dBm	10 kHz																														
$30\text{ MHz} \leq f < 1000\text{ MHz}$	-36 dBm	100 kHz																														
$1\text{ GHz} \leq f < 12,75\text{ GHz}$	-30 dBm	1 MHz	4																													
	-25 dBm	1 MHz	3																													
$12,75\text{ GHz} \leq f < 5\text{th harmonic of the upper frequency edge of the UL operating band in GHz}$	-30 dBm	1 MHz	1																													
$12,75\text{ GHz} < f < 26\text{ GHz}$	-30 dBm	1 MHz	2																													

Table 4.1.2.6.1.2.2-1: Requirements for spurious emissions for UE co-existence

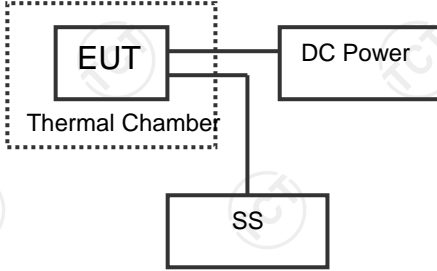
NR Band	Spurious emission for UE co-existence					
	Protected band	Frequency range (MHz)		Maximum Level (dBm)	MBW (MHz)	NOTE
n1, n84	E-UTRA Band 1, 5, 7, 8, 11, 18, 19, 20, 21, 22, 26, 27, 28, 31, 32, 38, 40, 41, 42, 43, 44, 45, 50, 51, 52, 65, 67, 68, 69, 72, 73, 74, 75, 76, NR Band n78, n79	F _{DL_low}	-	F _{DL_high}	-50	1
	NR Band n77	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 3, 34	F _{DL_low}	-	F _{DL_high}	-50	1
	Frequency range	1880	-	1895	-40	1
	Frequency range	1895	-	1915	-15.5	5
	Frequency range	1915	-	1920	+1.6	5
	Frequency range	1915	-	1920	+1.6	5
n3, n80	E-UTRA Band 1, 5, 7, 8, 20, 26, 27, 28, 31, 32, 33, 34, 38, 39, 40, 41, 43, 44, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76, NR Band n79	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 3	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 11, 18, 19, 21	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 22, 42, 52, NR Band n77, n78	F _{DL_low}	-	F _{DL_high}	-50	1
	Frequency range	1884.5	-	1915.7	-41	0.3
n7	E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 10, 12, 13, 14, 17, 20, 22, 26, 27, 28, 29, 30, 31, 32, 33, 34, 40, 42, 43, 50, 51, 52, 65, 66, 67, 68, 72, 74, 75, 76, 85, NR Band n77, n78	F _{DL_low}	-	F _{DL_high}	-50	1
	Frequency range	2570	-	2575	+1.6	5
	Frequency range	2575	-	2595	-15.5	5
	Frequency range	2595	-	2620	-40	1
n8, n81	E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 39, 40, 45, 50, 51, 65, 67, 68, 69, 72, 73, 74, 75, 76	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA band 3, 7, 22, 41, 42, 43, 52, NR Band n77, n78, n79	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA 8	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 11, 21	F _{DL_low}	-	F _{DL_high}	-50	1
	Frequency range	1884.5	-	1915.7	-41	0.3
n20, n82	E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 34, 40, 43, 50, 51, 65, 67, 68, 72, 74, 75, 76	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 20	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 38, 42, 52, 69, NR Band n77, n78	F _{DL_low}	-	F _{DL_high}	-50	1
	Frequency range	758	-	788	-50	1
n28, n83	E-UTRA Band 1, 4, 10, 22, 32, 42, 43, 50, 51, 52, 65, 66, 73, 74, 75, 76, NR Band n77, n78	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 1	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 2, 3, 5, 7, 8, 18, 19, 20, 25, 26, 27, 31, 34, 38, 40, 41, 66, 72, NR Band n79	F _{DL_low}	-	F _{DL_high}	-50	1
	E-UTRA Band 11, 21	F _{DL_low}	-	F _{DL_high}	-50	1

		Frequency range	470	-	694	-42	8	15, 35
		Frequency range	470	-	710	-26.2	6	34
		Frequency range	662	-	694	-26.2	6	15
		Frequency range	758	-	773	-32	1	15
		Frequency range	773	-	803	-50	1	
		Frequency range	1884.5	-	1915.7	-41	0.3	8, 19
	n38	E-UTRA Band 1, 2, 3, 4, 5, 8, 10, 12, 13, 14, 17, 20, 22, 27, 28, 29, 30, 31, 32, 33, 34, 40, 42, 43, 50, 51, 52, 65, 66, 67, 68, 72, 74, 75, 76, 85	F _{DL_low}	-	F _{DL_high}	-50	1	
		Frequency range	2620	-	2645	-15.5	5	15, 22, 26
		Frequency range	2645	-	2690	-40	1	15, 22
	n40	E-UTRA Band 1, 3, 5, 7, 8, 20, 22, 26, 27, 28, 31, 32, 33, 34, 38, 39, 42, 43, 44, 45, 50, 51, 52, 65, 67, 68, 69, 72, 74, 75, 76, NR Band n77, n78	F _{DL_low}	-	F _{DL_high}	-50	1	
		NR Band n79	F _{DL_low}	-	F _{DL_high}	-50	1	2
	n41	E-UTRA Band 1, 2, 3, 4, 5, 8, 10, 12, 13, 14, 17, 24, 25, 26, 27, 28, 29, 30, 34, 39, 42, 44, 45, 48, 50, 51, 52, 65, 66, 70, 71, 73, 74, 85, NR Band n77, n78	F _{DL_low}	-	F _{DL_high}	-50	1	
		NR Band n79	F _{DL_low}	-	F _{DL_high}	-50	1	2
		E-UTRA Band 11, 18, 19, 21	F _{DL_low}	-	F _{DL_high}	-50	1	
		Frequency range	1884.5	-	1915.7	-41	0.3	8
	n50	E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 20, 26, 28, 29, 31, 34, 38, 39, 40, 41, 42, 43, 48, 52, 65, 66, 67, 68, 85	F _{DL_low}	-	F _{DL_high}	-50	1	
	n51	E-UTRA Band 1, 2, 3, 4, 5, 7, 8, 12, 13, 17, 20, 26, 28, 29, 31, 34, 38, 39, 40, 41, 42, 43, 48, 65, 66, 67, 68	F _{DL_low}	-	F _{DL_high}	-50	1	
	n65	E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 22, 26, 27, 28, 31, 32, 38, 40, 41, 42, 43, 50, 51, 65, 68, 69, 72, 74, 75, 76, NR Band n78, n79	F _{DL_low}	-	F _{DL_high}	-50	1	
		NR Band n77	F _{DL_low}	-	F _{DL_high}	-50	1	2
		E-UTRA Band 34	F _{DL_low}	-	F _{DL_high}	-50	1	43
		Frequency range	1900	-	1915	-15.5	5	15, 26, 27a
		Frequency range	1915	-	1920	+1.6	5	15, 26, 27a
	n77, n78	E-UTRA Band 1, 3, 5, 7, 8, 11, 18, 19, 20, 21, 26, 28, 34, 39, 40, 41, 65, 74	F _{DL_low}	-	F _{DL_high}	-50	1	
		Frequency range	1884.5	-	1915.7	-41	0.3	8
Test Procedure:	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.							
Remark:	Normal and extreme test conditions and all channel bandwidth types have been tested, only the measurement data of normal							

	condition and 3MHz bandwidth (band 1), 3MHz bandwidth (band 3), 5MHz bandwidth (band 7), 5MHz bandwidth (band 20) are reported. Nothing emissions have been detected in the frequency range 9kHz to 30MHz
Test Instrument:	Refer to Item 3.3
Test Result:	PASS

6.4. Transmitter Minimum Output Power

6.4.1. Test Specification

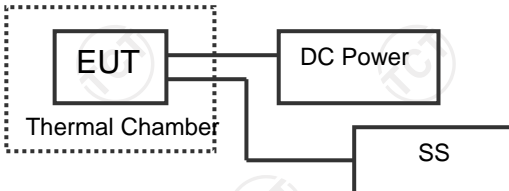
Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.3																																																								
Test Method:	ETSI EN 301 908-25 clause 5.1.3.2																																																								
Test Setup:																																																									
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Channel bandwidth (MHz)</th><th colspan="2">Minimum output power (dBm)</th><th rowspan="2">Measurement bandwidth (MHz)</th></tr> <tr> <th>$f \leq 3,0\text{GHz}$</th><th>$3,0\text{GHz} < f \leq 6,0\text{GHz}$</th></tr> </thead> <tbody> <tr><td>5</td><td>-39</td><td>-38,7</td><td>4,515</td></tr> <tr><td>10</td><td>-39</td><td>-38,7</td><td>9,375</td></tr> <tr><td>15</td><td>-39</td><td>-38,7</td><td>14,235</td></tr> <tr><td>20</td><td>-39</td><td>-38,7</td><td>19,095</td></tr> <tr><td>25</td><td>-38</td><td>-37,7</td><td>23,955</td></tr> <tr><td>30</td><td>-37,2</td><td>-36,9</td><td>28,815</td></tr> <tr><td>40</td><td>-36</td><td>-35,7</td><td>38,895</td></tr> <tr><td>50</td><td>-34,7</td><td>-34,7</td><td>48,615</td></tr> <tr><td>60</td><td>-33,9</td><td>-33,9</td><td>58,35</td></tr> <tr><td>80</td><td>-32,7</td><td>-32,7</td><td>78,15</td></tr> <tr><td>90</td><td>-32,2</td><td>-32,2</td><td>88,23</td></tr> <tr><td>100</td><td>-31,7</td><td>-31,7</td><td>98,31</td></tr> </tbody> </table>			Channel bandwidth (MHz)	Minimum output power (dBm)		Measurement bandwidth (MHz)	$f \leq 3,0\text{GHz}$	$3,0\text{GHz} < f \leq 6,0\text{GHz}$	5	-39	-38,7	4,515	10	-39	-38,7	9,375	15	-39	-38,7	14,235	20	-39	-38,7	19,095	25	-38	-37,7	23,955	30	-37,2	-36,9	28,815	40	-36	-35,7	38,895	50	-34,7	-34,7	48,615	60	-33,9	-33,9	58,35	80	-32,7	-32,7	78,15	90	-32,2	-32,2	88,23	100	-31,7	-31,7	98,31
Channel bandwidth (MHz)	Minimum output power (dBm)		Measurement bandwidth (MHz)																																																						
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15	-39	-38,7	14,235																																																						
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60	-33,9	-33,9	58,35																																																						
80	-32,7	-32,7	78,15																																																						
90	-32,2	-32,2	88,23																																																						
100	-31,7	-31,7	98,31																																																						
Test Procedure:	<ol style="list-style-type: none"> 1. Connect the SS to the UE antenna connectors as shown in ETSI TS 138 508-1 [4] Annex A, Figure A.3.1.1.2 for TE diagram and section A.3.2 for UE diagram. 2. The parameter settings for the cell are set up according to ETSI TS 138 508-1 [4] subclause 4.4.3. 3. Downlink signals are initially set up according to Annex C.0, C.1, C.2 of ETSI TS 138 521-1 [1], and uplink signals according to Annex G.0, G.1, G.2, G.3.0 of ETSI TS 138 521-1 [1]. 4. The UL Reference Measurement Channel is set according to table 5.1.3.2.5.1.1-1. 5. Propagation conditions are set according to Annex B.0 of ETSI TS 138 521-1 [1]. 6. Ensure the UE is in State RRC_CONNECTED with generic procedure parameters Connectivity NR, Connected without release On, Test Mode On and Test Loop Function On according to ETSI TS 138 508-1 [4] clause 4.5. Message contents are defined in clause 6.3D.1.4.3 of ETSI TS 138 521-1 [1]. 																																																								
Test Instrument:	Refer to Item 3.3																																																								
Remark:	Normal and extreme test conditions have been tested, And we found out that normal condition is worst case, so only the measurement data of normal condition in this report.																																																								

Test Result:	PASS
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6.5. Transmitter Adjacent Channel Leakage Power Ratio

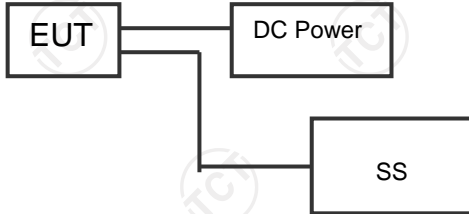
6.5.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.5																																																																			
Test Method:	ETSI EN 301 908-25 clause 5.1.3.4																																																																			
Test Setup:																																																																				
Limit:	<p>Table 4.1.2.5.1.2.1-1: NR ACLR measurement bandwidth</p> <table><tr><th colspan="13">NR channel bandwidth / NR ACLR measurement bandwidth</th></tr><tr><th></th><th>5 MHz</th><th>10 MHz</th><th>15 MHz</th><th>20 MHz</th><th>25 MHz</th><th>30 MHz</th><th>40 MHz</th><th>50 MHz</th><th>60 MHz</th><th>80 MHz</th><th>90 MHz</th><th>100 MHz</th></tr><tr><td>NR ACLR measurement bandwidth (MHz)</td><td>4.515</td><td>9.375</td><td>14.235</td><td>19.095</td><td>23.955</td><td>28.815</td><td>38.895</td><td>48.615</td><td>58.35</td><td>78.15</td><td>88.23</td><td>98.31</td></tr></table> <p>Table 4.1.2.5.1.2.1-2: NR ACLR requirement</p> <table><tr><th rowspan="2"></th><th rowspan="2">Power class 1</th><th colspan="3">Power class 2 BW ≤ 100MHz</th><th colspan="3">Power class 3 BW ≤ 100MHz</th></tr><tr><th>f ≤ 3,0GHz</th><th>3,0GHz < f ≤ 4,2GHz</th><th>4,2GHz < f ≤ 6,0GHz</th><th>f ≤ 3,0GHz</th><th>3,0GHz < f ≤ 4,2GHz</th><th>4,2GHz < f ≤ 6,0GHz</th></tr><tr><td>NR_{ACLR}</td><td></td><td>30,2 dB</td><td>30,2 dB</td><td>30,2 dB</td><td>29,2 dB</td><td>29,2 dB</td><td>29,2 dB</td></tr></table> <p>NOTE 1: Void.</p> <p>Table 4.1.2.5.1.2.1-1. : UTRA ACLR requirement</p> <table><tr><th></th><th>Power class 3</th></tr><tr><td>UTRA_{ACLR1}</td><td>32,2 dB</td></tr><tr><td>UTRA_{ACLR2}</td><td>35,2 dB</td></tr></table> <p>NOTE 1: Void.</p>	NR channel bandwidth / NR ACLR measurement bandwidth														5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	80 MHz	90 MHz	100 MHz	NR ACLR measurement bandwidth (MHz)	4.515	9.375	14.235	19.095	23.955	28.815	38.895	48.615	58.35	78.15	88.23	98.31		Power class 1	Power class 2 BW ≤ 100MHz			Power class 3 BW ≤ 100MHz			f ≤ 3,0GHz	3,0GHz < f ≤ 4,2GHz	4,2GHz < f ≤ 6,0GHz	f ≤ 3,0GHz	3,0GHz < f ≤ 4,2GHz	4,2GHz < f ≤ 6,0GHz	NR _{ACLR}		30,2 dB	30,2 dB	30,2 dB	29,2 dB	29,2 dB	29,2 dB		Power class 3	UTRA _{ACLR1}	32,2 dB	UTRA _{ACLR2}	35,2 dB
NR channel bandwidth / NR ACLR measurement bandwidth																																																																				
	5 MHz	10 MHz	15 MHz	20 MHz	25 MHz	30 MHz	40 MHz	50 MHz	60 MHz	80 MHz	90 MHz	100 MHz																																																								
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	Power class 1	Power class 2 BW ≤ 100MHz			Power class 3 BW ≤ 100MHz																																																															
		f ≤ 3,0GHz	3,0GHz < f ≤ 4,2GHz	4,2GHz < f ≤ 6,0GHz	f ≤ 3,0GHz	3,0GHz < f ≤ 4,2GHz	4,2GHz < f ≤ 6,0GHz																																																													
NR _{ACLR}		30,2 dB	30,2 dB	30,2 dB	29,2 dB	29,2 dB	29,2 dB																																																													
	Power class 3																																																																			
UTRA _{ACLR1}	32,2 dB																																																																			
UTRA _{ACLR2}	35,2 dB																																																																			
Test Procedure:	<ol style="list-style-type: none">1. SS sends uplink scheduling information for each UL HARQ process via PDCCH DCI format 0_1 for C_RNTI to schedule the UL RMC according to Table 5.1.3.4.1.1.1-1, Table 5.1.3.4.1.1.1-2 and Table 5.1.3.4.1.1.1-3. Since the UL has no payload and no loopback data to send the UE sends uplink MAC padding bits on the UL RMC.2. Send continuously power control “up” commands to the UE until the UE transmits at PUMAX level. Allow at least 200ms for the UE to reach 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 6.2.2.5-1 to 6.2.2.5-5 of ETSI TS 138521-1 [1] as appropriate. The period of the measurement shall be at least the continuous duration of 1ms over consecutive active uplink slots. For TDD, only slots consisting of only UL symbols are under test.4. Measure the rectangular filtered mean power for the assigned NR channel.5. Measure the rectangular filtered mean power of the first NR adjacent channel on both lower and upper side of the																																																																			

	<p>assigned NR channel, respectively.</p> <p>6. Calculate the ratios of the power between the values measured in step 4 over step 5 for lower and upper NR ACLR, respectively.</p> <p>7. For UEs supporting Power Class 2, repeat steps 1~6 for Test ID 22 and 36 in Table 5.1.3.4.1.1.1-1 on the applicable bands with message exception of P-Max defined in Table 6.5.2.4.1.4.3-1 of ETSI TS 138 521-1 [1].</p>
Test Instrument:	Refer to Item 3.3
Remark:	Normal and extreme test conditions have been tested, And we found out that normal condition is worst case, so only the measurement dada of normal condition in this report.
Test Result:	PASS

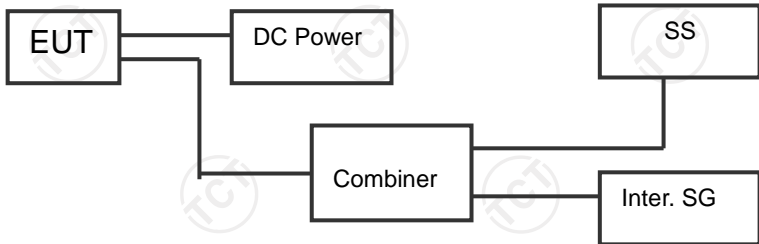
6.6. Receiver Reference Sensitivity Level

6.6.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.7
Test Method:	ETSI EN 301 908-25 clause 5.1.3.6
Test Setup:	 <pre> graph TD EUT[EUT] --- DC_Power[DC Power] DC_Power --- SS[SS] </pre>
Limit:	The throughput shall be $\geq 95\%$ of the maximum throughput of the reference measurement channels as specified in ETSI TS 138 101-1
Test Procedure:	<ol style="list-style-type: none"> 1. SS transmits PDSCH via PDCCH DCI format 1_1 for C_RNTI to transmit the DL RMC according to table 5.1.3.6.1.1.1-1. 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_1 for C_RNTI to schedule the UL RMC according to table 5.1.3.6.1.1.1-1. 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 appropriate REFSENS value defined in table 4.1.2.7.1.2-1 or table 4.1.2.7.1.2-2. Send continuously uplink power control "up" commands in the uplink scheduling information to the UE to ensure the UE transmits PUMAX level for at least the duration of the Throughput measurement. 4. Measure the average throughput for a duration sufficient to achieve statistical significance according to ETSI TS 138 521-1 [1], Annex H.2.
Test Instrument:	Refer to Item 3.3
Test Result:	PASS

6.7. Receiver Adjacent Channel Selectivity (ACS)

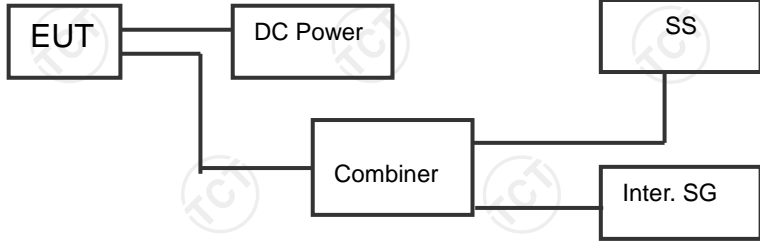
6.7.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.8
Test Method:	ETSI EN 301 908-25 clause 5.1.3.7
Test Setup:	 <pre> graph LR EUT[EUT] --- DC_Power[DC Power] DC_Power --- Combiner[Combiner] SS[SS] --- Combiner Combiner --- Inter_SG[Inter. SG] </pre>
Limit:	The throughput R_{av} shall be $\geq 95\%$
Test Procedure:	<ol style="list-style-type: none"> 1. SS transmits PDSCH via PDCCH DCI format [1_1] for C_RNTI to transmit the DL RMC according to 5.1.3.7.1.1.1-1. 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_1] for C_RNTI to schedule the UL RMC according to table 5.1.3.7.1.1.1-1. Since the UL has no payload and no loopback data to send the UE sends uplink MAC padding bits on the UL RMC. ETSI 154 {Draft}ETSI EN 301 908-25 V15.1.1_15.0.3 (2020-10) 3. Set the Downlink signal level to the value as defined in table 4.1.2.8.1.2-3 or table 4.1.2.8.1.2-5 as appropriate (Case 1). Send uplink power control commands to the UE using 1dB power step size to ensure that the UE output power measured by the test system is within the Uplink power control window, defined as -MU to - (MU + Uplink power control window size) dB of the target power level in table 4.1.2.8.1.2-3 or table 4.1.2.8.1.2-5 for at least the duration of the Throughput measurement, where: - MU is the test system uplink power measurement uncertainty and is specified in ETSI TS 138 521-1 [1], table F.1.3-1 for the carrier frequency f and the channel bandwidth BW. - Uplink power control window size = 1dB (UE power step size) + 0.7dB (UE power step tolerance) + (Test system relative power measurement uncertainty), where, the UE power step tolerance is specified in ETSI TS 138.101-1 [1], table 6.3.4.3-1 and is 0.7dB for 1dB power step size, and the Test system relative power measurement uncertainty is specified in ETSI TS 138 521-1 [1], table F.1.3-1. 4. Set the Interferer signal level to the value as defined in table 4.1.2.8.1.2-3 or table 4.1.2.8.1.2-5 as appropriate (Case 1) and frequency below the wanted signal, using a modulated interferer bandwidth as defined in ETSI TS 138 521-1 [1],

	<p>Annex D.</p> <ol style="list-style-type: none"> 5. Measure the average throughput for a duration sufficient to achieve statistical significance according to ETSI TS 138 521-1 [1], Annex H. 6. Repeat steps from 3 to 5, using an interfering signal above the wanted signal in Case 1 at step 4. 7. Set the Downlink signal level to the value as defined in table 4.1.2.8.1.2-4 or table 4.1.2.8.1.2-6 as appropriate (Case 2). Send uplink power control commands to the UE using 1dB power step size to ensure that the UE output power measured by the test system is within the Uplink power control window, defined as -MU to - (MU + Uplink power control window size) dB of the target power level in table 4.1.2.8.1.2-4 or table 4.1.2.8.1.2-6 for at least the duration of the Throughput measurement, where MU and Uplink power control window size are defined above. 8. Set the Interferer signal level to the value as defined in table 4.1.2.8.1.2-4 or table 4.1.2.8.1.2-6 as appropriate (Case 2) and frequency below the wanted signal, using a modulated interferer bandwidth as defined in ETSI TS 138 521-1 [1], Annex D. 9. Measure the average throughput for a duration sufficient to achieve statistical significance according to ETSI TS 138 521-1 [1], Annex H. 10. Repeat steps from 7 to 9, using an interfering signal above the wanted signal in Case 2 at step 8. 11. Repeat for applicable channel bandwidths and operating band combinations in both Case 1 and Case 2.
Test Instrument:	Refer to Item 3.3
Test Result:	PASS

6.8. Receiver Blocking Characteristics

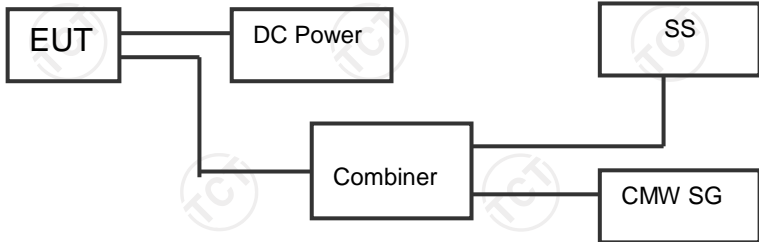
6.8.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.9
Test Method:	ETSI EN 301 908-25 clause 5.1.3.8
Test Setup:	 <pre> graph LR EUT[EUT] --- DC[DC Power] DC --- Combiner[Combiner] SS[SS] --- Combiner Combiner --- InterSG[Inter. SG] </pre>
Limit:	The throughput R_{av} shall be $\geq 95\%$
Test Procedure:	<ol style="list-style-type: none"> 1. SS transmits PDSCH via PDCCH DCI format 1_1 for C_RNTI to transmit the DL RMC according to table 5.1.3.8.1.1.1.1-1. 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_1 for C_RNTI to schedule the UL RMC according to table 5.1.3.8.1.1.1.1-1. Since the UL has no payload and no loopback data to send the UE sends 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 4.1.2.9.1.2.1-1 and 4.1.2.9.1.2.1-2 or tables 4.1.2.9.1.2.1-3 and 4.1.2.9.1.2.1-4 as appropriate depending on NR band. 4. Set the downlink signal level according to the table 4.1.2.9.1.2.1-1 or 4.1.2.9.1.2.1-3 as appropriate. Send uplink power control commands to the UE using 1dB power step size to ensure that the UE output power measured by the test system is within the Uplink power control window, defined as $-MU$ to $-(MU + \text{Uplink power control window size})$ dB of the target power level in table 4.1.2.9.1.2.1-1 or table 4.1.2.9.1.2.1-3 for at least the duration of the Throughput measurement, where: $-MU$ is the test system uplink power measurement uncertainty and is specified in ETSI TS 138 521-1 [1], table F.1.3-1 for the carrier frequency f and the channel bandwidth BW. $- \text{Uplink power control window size} = 1\text{dB (UE power step size)} + 0.7\text{dB (UE power step tolerance)} + (\text{Test system relative power measurement uncertainty})$, where, the UE power step tolerance is specified in ETSI TS 138.101-1 [1], table 6.3.4.3-1 and is 0.7dB for 1dB power step size, and the Test system relative power measurement uncertainty is specified in ETSI TS 138 521-1 [1], table F.1.3-1. 5. Measure the average throughput for a duration sufficient to achieve statistical significance according to ETSI TS 138

	521-1 [1], Annex H. 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.
Test Instrument:	Refer to Item 3.3
Test Result:	PASS

6.9. Receiver Intermodulation Characteristics

6.9.1. Test Specification

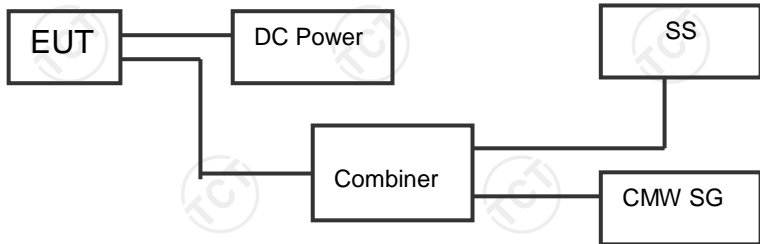
Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.11
Test Method:	ETSI EN 301 908-25 clause 5.1.3.10
Test Setup:	 <pre> graph LR EUT[EUT] --- DC_Power[DC Power] DC_Power --- Combiner[Combiner] SS[SS] --- Combiner Combiner --- CMW_SG[CMW SG] </pre>
Limit:	The throughput R_{av} shall be $\geq 95\%$
Test Procedure:	<ol style="list-style-type: none"> 1. SS transmits PDSCH via PDCCH DCI format 1_1 for C_RNTI to transmit the DL RMC according to table 5.1.3.1 0.1.1.1-1. 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_1 for C_RNTI to schedule the UL RMC according to table 5.1.3.10.1.1.1-1. 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 4.1.2.11.1.2-1 or table 4.1.2.11.1.2-2. Send uplink power control commands to the UE using 1dB power step size to ensure that the UE output power measured by the test system is within the Uplink power control window, defined as $-MU$ to $-(MU + \text{Uplink power control window size})$ dB of the target power level in Table 4.1.2.11.1.2-1 for at least the duration of the Throughput measurement, where: $-MU$ is the test system uplink power measurement uncertainty and is specified in ETSI TS 138 521-1 [1], table F.1.3-1 for the carrier frequency f and the channel bandwidth BW. $-\text{Uplink power control window size} = 1\text{dB (UE power step size)} + 0.7\text{dB (UE power step tolerance)} = 1.7\text{dB}$, where, the UE power step tolerance is specified in ETSI TS 138 101-1 [6], table 6.3.4.3-1 and is 0.7dB for 1dB power step size. 4. Set the Interfering signal levels to the values as defined in table 4.1.2.11.1.2-1 or table 4.1.2.11.1.2-2 and frequency below the wanted signal. 5. Measure the average throughput for a duration sufficient to achieve statistical significance according to ETSI TS 138 521-1 [1], Annex G.2. 6. Repeat steps from 3 to 5, using an interfering signal above the wanted signal at step 4.

Test Instrument:	Refer to Item 3.3
Test Result:	PASS



6.10. Receiver Spurious Response

6.10.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.10
Test Method:	ETSI EN 301 908-25 clause 5.1.3.9
Test Setup:	 <pre> graph LR EUT[EUT] --- DC_Power[DC Power] DC_Power --- Combiner[Combiner] SS[SS] --- Combiner Combiner --- CMW_SG[CMW SG] </pre>
Limit:	The throughput R_{av} shall be $\geq 95\%$
Test Procedure:	<ol style="list-style-type: none"> 1. SS transmits PDSCH via PDCCH DCI format [1_1] for C_RNTI to transmit the DL RMC according to Table 5.1.3.8.1.2.1.1-1. 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_1] for C_RNTI to schedule the UL RMC according to Table 5.1.3.8.1.2.1.1-1. Since the UE has no payload and no loopback 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 5.1.3.8.1.2.1.1-3. The spurious frequencies are taken from records in the final step of test procedures in clause 5.1.3.8.1.2.1.2. 4. Set the downlink signal level according to table 4.1.2.10.1.2 -1 or 4.1.2.10.1.2 -2. Send uplink power control commands to the UE using 1dB power step size to ensure that the UE output power measured by the test system is within the Uplink power control window, defined as $-(MU + \text{Uplink power control window size})$ dB of the target power level in Table 4.1.2.10.1.2 -1 or 4.1.2.10.1.2 -2 for at least the duration of the Throughput measurement, where: - MU is the test system uplink power measurement uncertainty and is specified in ETSI TS 138 521-1 [1], Table F.1.3-1 for the carrier frequency f and the channel bandwidth BW - Uplink power control window size = 1dB (UE power step size) + 0.7dB (UE power step tolerance) = 1.7dB, where, the UE power step tolerance is specified in ETSI TS 138.101-1 [6], Table 6.3.4.3-1 and is 0.7dB for 1dB power step size. 5. For the spurious frequency, measure the average throughput for a duration sufficient to achieve statistical significance according to ETSI TS 138 521-1 [1], Annex H.2.
Test Instrument:	Refer to Item 3.3

Test Result:	PASS
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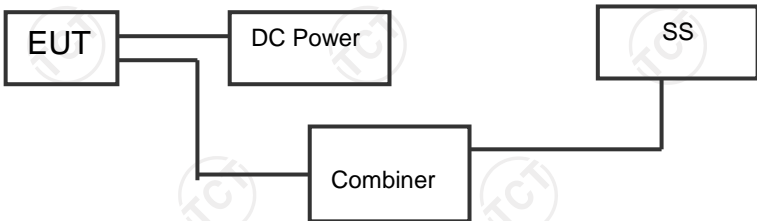
6.11. Receiver Spurious Emissions

6.11.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.12												
Test Method:	ETSI EN 301 908-25 clause 5.1.3.1												
Test Setup:	<pre>graph LR; EUT[EUT] --- DC_Power[DC Power]; DC_Power --- Combiner[Combiner]; SS[SS] --- Combiner; Combiner --- SA[SA]</pre>												
Limit:	<p>Table 4.2.10.2-1: General receiver spurious emission requirements</p> <table><tr><th>Frequency Band</th><th>Measurement bandwidth</th><th>Maximum level</th><th>Note</th></tr><tr><td>$30\text{ MHz} \leq f < 1\text{ GHz}$</td><td>100 kHz</td><td>-57 dBm</td><td></td></tr><tr><td>$1\text{ GHz} \leq f \leq 12.75\text{ GHz}$</td><td>1 MHz</td><td>-47 dBm</td><td></td></tr></table> <p>NOTE: Unused PDCCH resources are padded with resource element groups with power level given by PDCCH_RA/RB as defined in TS 136 101 [4] clause C.3.1.</p>	Frequency Band	Measurement bandwidth	Maximum level	Note	$30\text{ MHz} \leq f < 1\text{ GHz}$	100 kHz	-57 dBm		$1\text{ GHz} \leq f \leq 12.75\text{ GHz}$	1 MHz	-47 dBm	
Frequency Band	Measurement bandwidth	Maximum level	Note										
$30\text{ MHz} \leq f < 1\text{ GHz}$	100 kHz	-57 dBm											
$1\text{ GHz} \leq f \leq 12.75\text{ GHz}$	1 MHz	-47 dBm											
Test Procedure:	<ol style="list-style-type: none">1. Sweep the spectrum analyzer (or equivalent equipment) over a frequency range and measure the average power of spurious emission.2. Repeat step 1 for all NR Rx antennas of the UE.												
Test Instrument:	Refer to Item 3.3												
Remark:	Nothing emissions have been detected in the frequency range 9kHz to 30MHz, only show the worst test plots in this report, and the worst channel is middle range.												
Test Result:	PASS												

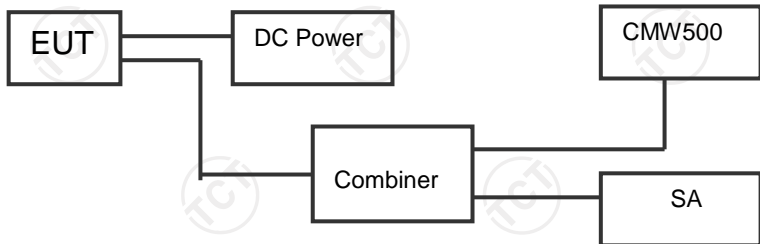
6.12. Transmit OFF power

6.12.1. Test Specification

Test Requirement:	ETSI EN 301 908-25 clause 4.1.2.13																																																				
Test Method:	ETSI EN 301 908-25 clause 5.1.3.12.1																																																				
Test Setup:																																																					
Limit:	<table border="1"> <thead> <tr> <th rowspan="2">Channel bandwidth (MHz)</th><th colspan="2">Transmit OFF power (dBm)</th><th rowspan="2">Measurement bandwidth (MHz)</th></tr> <tr> <th>$f \leq 3.0\text{GHz}$</th><th>$3.0\text{GHz} < f \leq 6.0\text{GHz}$</th></tr> </thead> <tbody> <tr><td>5</td><td>-48.5</td><td>-48.2</td><td>4.515</td></tr> <tr><td>10</td><td>-48.5</td><td>-48.2</td><td>9.375</td></tr> <tr><td>15</td><td>-48.5</td><td>-48.2</td><td>14.235</td></tr> <tr><td>20</td><td>-48.5</td><td>-48.2</td><td>19.095</td></tr> <tr><td>25</td><td>-48.5</td><td>-48.2</td><td>23.955</td></tr> <tr><td>30</td><td>-48.5</td><td>-48.2</td><td>28.815</td></tr> <tr><td>40</td><td>-48.5</td><td>-48.2</td><td>38.895</td></tr> <tr><td>50</td><td>-48.3</td><td>-48.2</td><td>48.615</td></tr> <tr><td>60</td><td>-48.3</td><td>-48.2</td><td>58.35</td></tr> <tr><td>80</td><td>-48.3</td><td>-48.2</td><td>78.15</td></tr> <tr><td>100</td><td>-48.3</td><td>-48.2</td><td>88.23</td></tr> </tbody> </table>	Channel bandwidth (MHz)	Transmit OFF power (dBm)		Measurement bandwidth (MHz)	$f \leq 3.0\text{GHz}$	$3.0\text{GHz} < f \leq 6.0\text{GHz}$	5	-48.5	-48.2	4.515	10	-48.5	-48.2	9.375	15	-48.5	-48.2	14.235	20	-48.5	-48.2	19.095	25	-48.5	-48.2	23.955	30	-48.5	-48.2	28.815	40	-48.5	-48.2	38.895	50	-48.3	-48.2	48.615	60	-48.3	-48.2	58.35	80	-48.3	-48.2	78.15	100	-48.3	-48.2	88.23		
Channel bandwidth (MHz)	Transmit OFF power (dBm)		Measurement bandwidth (MHz)																																																		
	$f \leq 3.0\text{GHz}$	$3.0\text{GHz} < f \leq 6.0\text{GHz}$																																																			
5	-48.5	-48.2	4.515																																																		
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25	-48.5	-48.2	23.955																																																		
30	-48.5	-48.2	28.815																																																		
40	-48.5	-48.2	38.895																																																		
50	-48.3	-48.2	48.615																																																		
60	-48.3	-48.2	58.35																																																		
80	-48.3	-48.2	78.15																																																		
100	-48.3	-48.2	88.23																																																		
Test Procedure:	<ol style="list-style-type: none"> 1. SS sends uplink scheduling information via PDCCH DCI format 0_1 with TPC command 0dB for C_RNTI to schedule the UL RMC according to Table 5.1.3.12.1.1-1. Since the UE has no payload and no loopback data to send the UE sends uplink MAC padding bits on the UL RMC. The UL assignment is such that the UE transmits on slots 8 for 15kHz SCS, on slots 8 and 18 for 30kHz SCS and on slots 17 and 37 for 60kHz SCS. 2. Measure the UE transmission OFF power during the slot prior to the PUSCH transmission, excluding a transient period of 10 μs in the end of the slot. 3. Measure the output power of the UE PUSCH transmission during one slot. 4. Measure the UE transmission OFF power during the slot following the PUSCH transmission, excluding a transient period of 10 μs at the beginning of the slot. 																																																				
Test Instrument:	Refer to Item 3.3																																																				
Test Result:	PASS																																																				

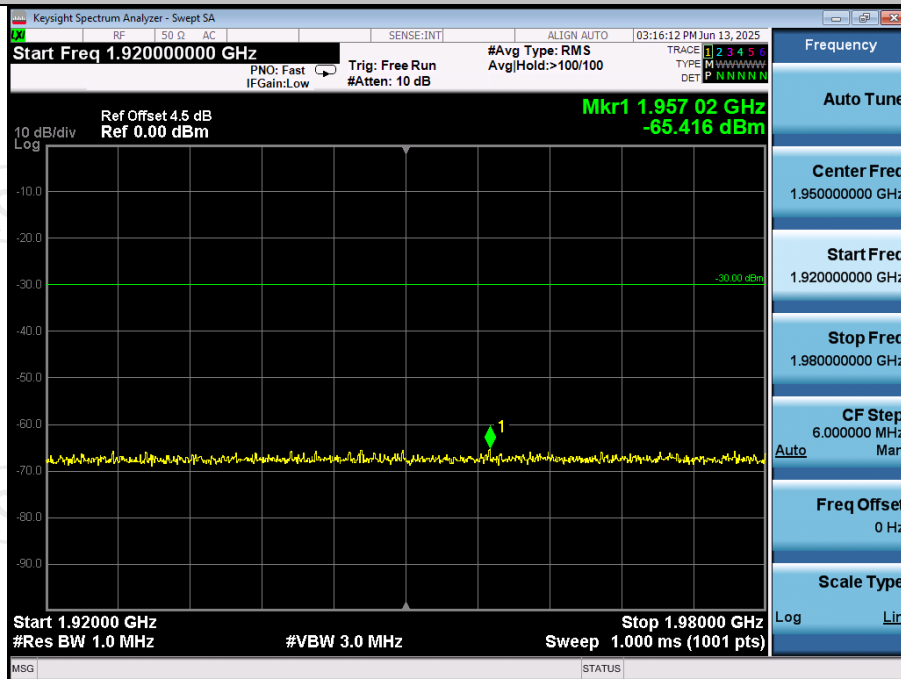
6.13. Control and Monitoring Functions (UE)

6.13.1. Test Specification

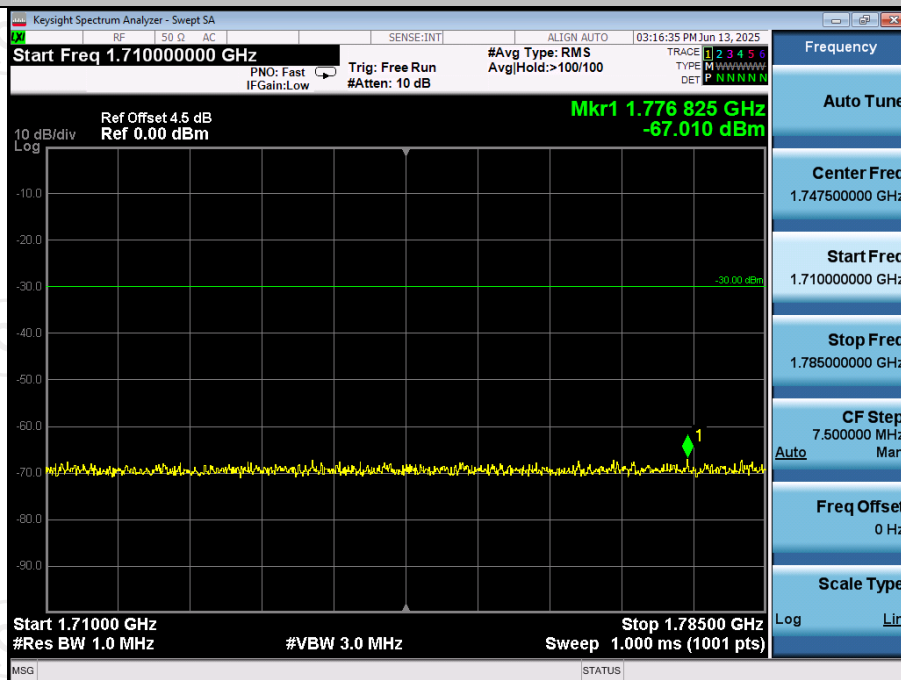
Test Requirement:	ETSI EN 301 908-1 clause 4.2.4
Test Method:	ETSI EN 301 908-2 clause 5.3.3
Test Setup:	 <pre> graph LR EUT[EUT] --- DC_Power[DC Power] DC_Power --- Combiner[Combiner] CMW500[CMW500] --- Combiner Combiner --- SA[SA] </pre>
Limit:	The maximum measured power during the duration of the test shall not exceed -30dBm.
Test Procedure:	<ol style="list-style-type: none"> 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. 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.
Test Instrument:	Refer to Item 3.3
Test Result:	PASS

6.13.2. Test Data

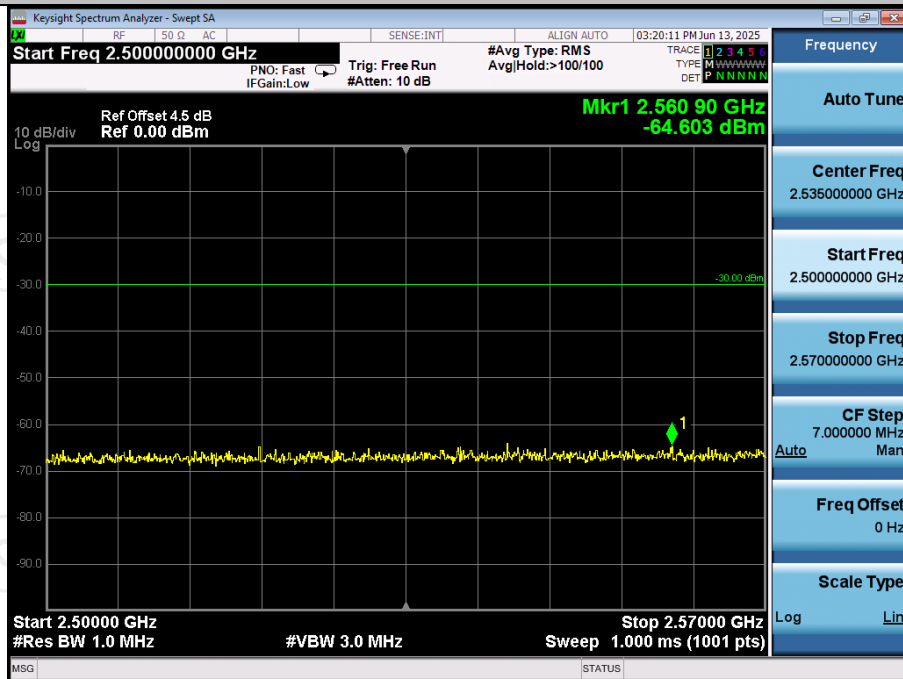
n 1



n 3

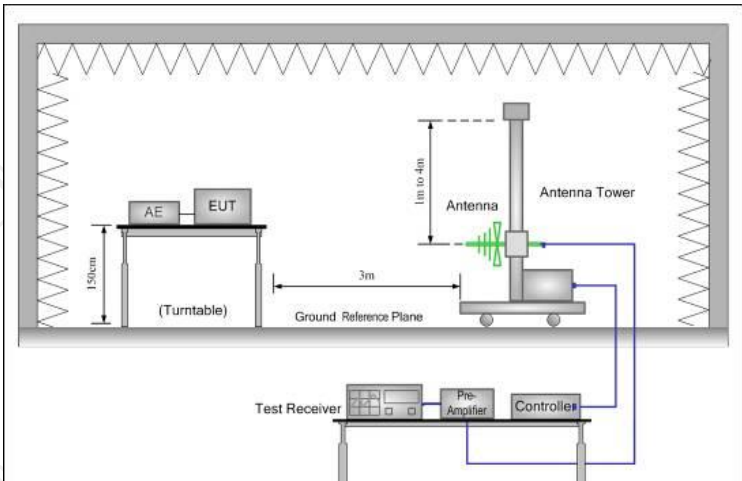
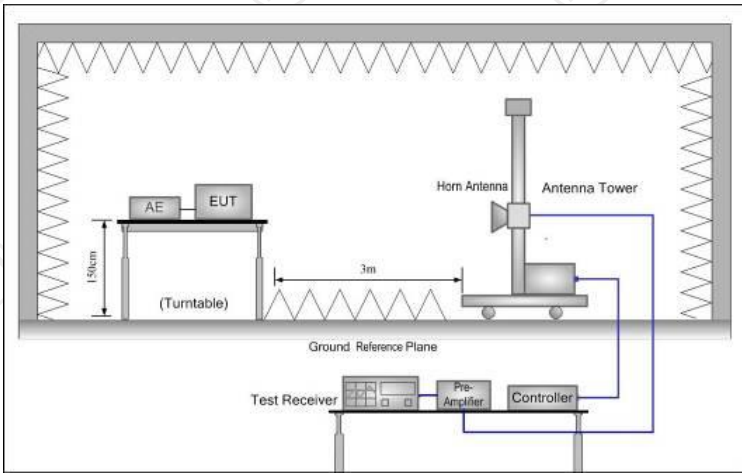


n 7



6.14. Radiated Emissions

6.14.1. Test Specification

Test Requirement:	ETSI EN 301 908-1 clause 4.2.2																																				
Test Method:	ETSI EN 301 908-1 clause 5.3.1																																				
Test Setup:	<p>Below 1GHz</p> 																																				
	<p>Above 1GHz</p> 																																				
Limit:	<p>Table 4.2.2.2-1: Radiated spurious emissions requirements (UE)</p> <table><tr><th>Frequency</th><th>Minimum requirement (e.r.p.)/ reference bandwidth idle mode</th><th>Minimum requirement (e.r.p.)/ reference bandwidth traffic mode</th><th>Applicability</th></tr><tr><td>30 MHz ≤ f < 1 000 MHz</td><td>-57 dBm/100 kHz</td><td>-36 dBm/100 kHz</td><td>All</td></tr><tr><td>1 GHz ≤ f < 12,75 GHz</td><td>-47 dBm/1 MHz</td><td>-30 dBm/1 MHz</td><td>All</td></tr><tr><td>fc - 2,5 × 5 MHz < f < fc + 2,5 × 5 MHz</td><td></td><td>Not defined</td><td>UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3</td></tr><tr><td>fc - 2,5 × BWChannel MHz < f < fc + 2,5 × BWChannel MHz</td><td></td><td>Not defined</td><td>E-UTRA FDD, E-UTRA TDD, Mobile WiMAX, UMB</td></tr><tr><td>fc - 2,5 × 10 MHz < f < fc + 2,5 × 10 MHz</td><td></td><td>Not defined</td><td>UTRA TDD, 7,68 Mcps option</td></tr><tr><td>fc - 4 MHz < f < fc + 4 MHz</td><td></td><td>Not defined</td><td>UTRA TDD, 1,28 Mcps option cdma2000, spreading rate 1</td></tr><tr><td>fc - 500 kHz < f < fc + 500 kHz</td><td></td><td>Not defined</td><td>UWC 136, 200 kHz option</td></tr><tr><td>fc - 250 kHz < f < fc + 250 kHz</td><td></td><td>Not defined</td><td>UWC 136, 30 kHz option</td></tr></table> <p>NOTE: fc is the UE transmit centre frequency.</p>	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	fc - 2,5 × 5 MHz < f < fc + 2,5 × 5 MHz		Not defined	UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3	fc - 2,5 × BWChannel MHz < f < fc + 2,5 × BWChannel MHz		Not defined	E-UTRA FDD, E-UTRA TDD, Mobile WiMAX, UMB	fc - 2,5 × 10 MHz < f < fc + 2,5 × 10 MHz		Not defined	UTRA TDD, 7,68 Mcps option	fc - 4 MHz < f < fc + 4 MHz		Not defined	UTRA TDD, 1,28 Mcps option cdma2000, spreading rate 1	fc - 500 kHz < f < fc + 500 kHz		Not defined	UWC 136, 200 kHz option	fc - 250 kHz < f < fc + 250 kHz		Not defined	UWC 136, 30 kHz option
	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																																		
fc - 2,5 × 5 MHz < f < fc + 2,5 × 5 MHz		Not defined	UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3																																		
fc - 2,5 × BWChannel MHz < f < fc + 2,5 × BWChannel MHz		Not defined	E-UTRA FDD, E-UTRA TDD, Mobile WiMAX, UMB																																		
fc - 2,5 × 10 MHz < f < fc + 2,5 × 10 MHz		Not defined	UTRA TDD, 7,68 Mcps option																																		
fc - 4 MHz < f < fc + 4 MHz		Not defined	UTRA TDD, 1,28 Mcps option cdma2000, spreading rate 1																																		
fc - 500 kHz < f < fc + 500 kHz		Not defined	UWC 136, 200 kHz option																																		
fc - 250 kHz < f < fc + 250 kHz		Not defined	UWC 136, 30 kHz option																																		
	<p>Substitution method was performed to determine the actual ERP emission levels of the EUT.</p> <p>The following test procedure as below:</p>																																				

Test Procedure:

1>.Below 1GHz test procedure:

1. On the test site as test setup graph above, the EUT shall be placed at the 1.5m support on the turntable and in the position closest to normal use as declared by the provider.
2. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter. The output of the test antenna shall be connected to the measuring receiver.
3. The transmitter shall be switched on, if possible, without modulation and the measuring receiver shall be tuned to the frequency of the transmitter under test.
4. The test antenna shall be raised and lowered from 1m to 4m until a maximum signal level is detected by the measuring receiver. Then the turntable should be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
5. Repeat step 4 for test frequency with the test antenna polarized horizontally.
6. Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter. At the lower frequencies, where the substitution antenna is very long, this will be impossible to achieve when the antenna is polarized vertically. In such case the lower end of the antenna should be 0.3 m above the ground.
7. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends vertically polarized, and with the signal generator tuned to a particular test frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained. This should be done carefully repeating the adjustment of the test antenna and generator output.
8. Repeat step 7 with both antennas horizontally polarized for each test frequency.
9. Calculate power in dBm into a reference ideal half-wave dipole antenna by reducing the readings obtained in steps 7 and 8 by the power loss in the cable between the generator and the antenna, and further corrected for the gain of the substitution antenna used relative to an ideal half-wave dipole antenna by the following formula:
$$\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}$$
where:
Pg is the generator output power into the

	<p>Substitution antenna.</p> <p>2>.Above 1GHz test procedure: Different between above is the test site, change from Semi-Anechoic Chamber to fully Anechoic Chamber, and the test antenna do not need to raise from 1 to 4m, just test in 1.5m height.</p>
Test Instrument:	Refer to Item 3.3
Test Result:	PASS

6.14.2. Test Data

n 1, Middle Channel- traffic mode, Bandwidth:5MHz				
Frequency (MHz)	Spurious Emission		Limit dBm(EIRP)	Result
	Polarization	Level dBm(EIRP)		
363.54	Vertical	-50.24	Blew 1G: -36 Above 1G: -30	Pass
3900	V	-42.36		
5850	V	-45.72		
363.54	Horizontal	-47.91		
3900	H	-40.00		
5850	H	-46.38		
n 1, Middle Channel - idle mode				
Frequency (MHz)	Spurious Emission		Limit dBm(EIRP)	Result
	Polarization	Level dBm(EIRP)		
363.54	Vertical	-71.37	Below 1G: -57 Above 1G: -47	Pass
3900	V	-75.94		
5850	V	-64.81		
363.54	Horizontal	-73.56		
3900	H	-77.13		
5850	H	-68.09		

Note: The test frequency range is 30MHz to 12,75GHz, the reading of other frequencies emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

n 3, Middle Channel- traffic mode, Bandwidth:5MHz				
Frequency (MHz)	Spurious Emission		Limit dBm(EIRP)	Result
	Polarization	Level dBm(EIRP)		
258.31	Vertical	-49.64	Blew 1G: -36 Above 1G: -30	Pass
3495	V	-42.77		
5242.5	V	-45.41		
258.31	Horizontal	-48.05		
3495	H	-41.62		
5242.5	H	-46.78		
n 3, Middle Channel - idle mode				
Frequency (MHz)	Spurious Emission		Limit dBm(EIRP)	Result
	Polarization	Level dBm(EIRP)		
258.31	Vertical	-71.56	Below 1G: -57 Above 1G: -47	Pass
3495	V	-74.60		
5242.5	V	-64.01		
258.31	Horizontal	-74.14		
3495	H	-76.93		
5242.5	H	-67.79		

Note: The test frequency range is 30MHz to 12,75GHz, the reading of other frequencies emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

n 7, Middle Channel- traffic mode, Bandwidth:5MHz				
Frequency (MHz)	Spurious Emission		Limit dBm(EIRP)	Result
	Polarization	Level dBm(EIRP)		
351.47	Vertical	-50.34	Blew 1G: -36 Above 1G: -30	Pass
5070	V	-42.22		
7605	V	-45.65		
351.47	Horizontal	-47.76		
5070	H	-41.93		
7605	H	-45.49		
n 7, Middle Channel - idle mode				
Frequency (MHz)	Spurious Emission		Limit dBm(EIRP)	Result
	Polarization	Level dBm(EIRP)		
351.47	Vertical	-71.50	Below 1G: -57 Above 1G: -47	Pass
5070	V	-74.84		
7605	V	-64.17		
351.47	Horizontal	-73.61		
5070	H	-77.72		
7605	H	-67.38		

Note: The test frequency range is 30MHz to 12,75GHz, the reading of other frequencies emissions is attenuated more than 20 dB below the limits or the field strength is too small to be measured.

7. Photographs of Test Configuration

Radiated Emission



8. Photographs of EUT

Please refer to document Appendix No.: TCT250324E012-B & TCT250324E012-C

9. Test Data for NR n1, NR n3 and NR n7.

Refer to Appendix NR n1, NR n3 and NR n7

*******END OF REPORT*******