TEST REPORT

Report No.:	BCTC2504708272-10E
Applicant:	Shenzhen Huafurui Technology Co., Ltd.
Product Name:	Smartphone
Test Model:	P90
Tested Date:	2025-04-07 to 2025-05-09
Issued Date:	2025-05-21

Shenzhen BCTC Testing Co., Ltd.

Product Name:	Smartphone
Trademark:	CUBOT
Model/Type reference:	P90
Prepared For:	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:	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
Prepared By:	Shenzhen BCTC Testing Co., Ltd.
Address:	1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China
Sample Received Date:	2025-04-07
Sample tested Date:	2025-04-07 to 2025-05-09
Issue Date:	2025-05-21
Report No.:	BCTC2504708272-10E
Test Standards:	ETSI EN 301 908-1 V15.2.1 (2023-01) ETSI EN 301 908-13 V13.2.1 (2022-02)
Test Results:	PASS
Remark:	This is LTE radio test report.

Tested by:

Brave Zeng/ Project Handler

Approved by:

Zero Zhou/Reviewer

The test report is effective only with both signature and specialized stamp. This result(s) shown in this report refer only to the sample(s) tested. Without written approval of Shenzhen BCTC Testing Co., Ltd, this report can't be reproduced except in full. The tested sample(s) and the sample information are provided by the client.

Table Of Content

(Note: N/A Means Not Applicable)

1. Version

Report No.	Issue Date	Description	Approved
BCTC2504708272-10E	2025-05-21	Original	Valid

2. Test Summary

No.	Description of Test	Result
1	Transmitter maximum output power	PASS
2	Transmitter spectrum emission mask	PASS
3	Transmitter spurious emissions	PASS
4	Transmitter minimum output power	PASS
5	Transmitter adjacent channel leakage power ratio	PASS
6	Control and monitoring functions	PASS
7	Receiver adjacent channel selectivity (ACS)	PASS
8	Receiver blocking characteristics	PASS
9	Receiver spurious response	PASS
10	Receiver intermodulation characteristics	PASS
11	Receiver spurious emissions	PASS
12	Radiated emissions	PASS
13	Receiver Reference Sensitivity Level	PASS
14	Receiver Total Radiated Sensitivity	PASS
15	Total Radiated Power	PASS

Note:
Pass: Test item meets the requirement.

3. Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the Product as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

Conducted RF Output Power	±0.6dB
Transmitter spectrum emission mask	±1.5dB
Conducted Transmitter spurious emissions	±1.0dB
Transmitter minimum output power	±1.0dB
Receiver adjacent channel selectivity	±0.5dB
Receiver blocking characteristics	±1.7dB
Receiver spurious response	±1.7dB
Receiver intermodulation characteristics	±1.3dB
Conducted Receiver spurious emissions	±1.0dB
Transmitter adjacent channel power leakage ratio	±0.8dB
Receiver Reference Sensitivity level	±1.0dB
Radiated Spurious Emissions	30-1000MHz ±4.8dB
	1-6GHz ±4.9dB
	6-18GHz ±4.9dB
Temperature	±1 degree
Humidity	± 5 %

4. Product Information And Test Setup

4.1 Product Information

Model/Type reference:	P90
Model differences:	N/A
LTE Band(s):	FDD Band 1, Band 3, Band 7, Band 8, Band 20, Band 28, Band 38, Band 40
Hardware Version:	3368D-MC-V1.1
Software Version:	CUBOT_P90_F021C_V01
Operation Frequency:	LTE Band 1: (UL)1920MHz~1980MHz (DL)2110MHz~2170MHz LTE Band 3: (UL)1710MHz~1785MHz (DL)1805MHz~1880MHz LTE Band 7: (UL)2500MHz~2570MHz (DL)2620MHz~2690MHz LTE Band 8: (UL)880MHz~915MHz (DL)925MHz~960MHz LTE Band 20: (UL)832MHz~862MHz (DL)791MHz~821MHz LTE Band 28: (UL)703MHz~748MHz, (DL)758MHz~803MHz LTE Band 38: (UL)2570MHz-2620MHz (DL)2570MHz-2620MHz LTE Band 40: (UL)2300MHz-2400MHz (DL)2300MHz-2400MHz
Max. RF output power:	LTE Band 1: 24.28 dBm LTE Band 3: 23.62 dBm LTE Band 7: 22.77 dBm LTE Band 8: 23.04 dBm LTE Band 20: 24.09 dBm LTE Band 28: 23.60 dBm LTE Band 38: 24.44 dBm LTE Band 40: 22.48 dBm
Type of Modulation:	QPSK, 16-QAM
Antenna Type:	Internal antenna
Antenna Gain:	LTE band 1: -1.25 dBi LTE Band 3: -1.91 dBi LTE Band 7: -1.97 dBi LTE Band 8: -1.35 dBi LTE Band 20: 0.61 dBi LTE Band 28: 0.87 dBi

LTE Band 38: -2.4 dBi

LTE Band 40: -0.01 dBi

Remark:

☒ The antenna gain of the product comes from the antenna report provided by the customer, and the test data is affected by the customer information.

☐ The antenna gain of the product is provided by the customer, and the test data is affected by the customer information.

Ratings:	DC 9V from adapter/DC 3.87V from battery
Adapter 1 Information:	Model: HJ-PD18W-EU Input: 100-240V~ 50/60Hz 0.6A Output: 5.0V ⎓ 3.0A 15.0W OR 9.0V ⎓ 2.0A 18.0W OR 12.0V ⎓ 1.5A 18.0W MAX
Adapter 2 Information:	Model: TPD-203A120167VF01 Input: 100-240V~ 50/60Hz 0.6A Output: 5.0V ⎓ 3.0A 15.0W or 9.0V ⎓ 2.22A 19.98W or 12.0V ⎓ 1.67A 20.04W

Cable of Product

No.	Cable Type	Quantity	Provider	Length (m)	Shielded	Note
1	--	--	Applicant	---	Yes/No	With a ferrite ring in mid Detachable
2	--	--	BCTC	--	Yes/No	--

4.2 Test Setup Configuration

See test photographs attached in EUT TEST SETUP PHOTOGRAPHS for the actual connections between Product and support equipment.

4.3 Support Equipment

No.	Device Type	Brand	Model	Series No.	Note
1.	Adapter	/	TPD-203A120167 VF01	---	---
2.	Adapter	/	HJ-PD18W-EU	---	---
3.	TF card	SanDisk	32G	---	---

Notes:
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.

4.4 Test Mode And Test Environment

1. Test Mode & Normal Test Conditions:

Test Mode:	Keep the EUT in Transmitting mode by Simulator Base station.
Humidity (%):	20-75
Atmospheric Pressure(mbar):	1008
Temperature(℃):	25
Test Voltage(DC):	3.87V

2. Extreme Test Conditions:
For tests at extreme temperatures, measurements shall be made over the extremes of the operating temperature range as declared by the manufacturer.
For tests at extreme voltages, measurements shall be made over the extremes of the power source voltage range as declared by the manufacturer.

Test Conditions	LTLV	LTHV	HTLV	HTHV
Temperature (℃)	-10	-10	45	45
Test Voltage (DC)	3.48	4.26	3.48	4.26

4.5 Channel List

Test Configuration LTE Band 1	5 MHz Bandwidth	Lowest	18025	1922.5 MHz
		Middle	18300	1950.0 MHz
		Highest	18575	1977.5 MHz
	10 MHz Bandwidth	Lowest	18050	1925.0 MHz
		Middle	18300	1950.0 MHz
		Highest	18550	1975.0 MHz
	20 MHz Bandwidth	Lowest	18100	1930.0 MHz
		Middle	18300	1950.0 MHz
		Highest	18500	1970.0 MHz
Test Configuration LTE Band 3	1.4 MHz Bandwidth	Lowest	19207	1710.7 MHz
		Middle	19575	1747.5 MHz
		Highest	19943	1784.3 MHz
	5 MHz Bandwidth	Lowest	19225	1712.5 MHz
		Middle	19575	1747.5 MHz
		Highest	19925	1782.5 MHz
	10 MHz Bandwidth	Lowest	19250	1715.0 MHz
		Middle	19575	1747.5 MHz
		Highest	19900	1780.0 MHz
	20 MHz Bandwidth	Lowest	19300	1720.0 MHz
		Middle	19575	1747.5 MHz
		Highest	19850	1775.0 MHz
Test Configuration LTE Band 7	5 MHz Bandwidth	Lowest	20775	2502.5 MHz
		Middle	21100	2535.0 MHz
		Highest	21425	2567.5 MHz
	10 MHz Bandwidth	Lowest	20800	2505.0 MHz
		Middle	21100	2535.0 MHz
		Highest	21400	2565.0 MHz
	20 MHz Bandwidth	Lowest	20850	2510.0 MHz
		Middle	21100	2535.0 MHz
		Highest	21350	2560.0 MHz
Test Configuration LTE Band 8	1.4 MHz Bandwidth	Lowest	21457	880.7 MHz
		Middle	21625	897.5 MHz
		Highest	21793	914.3 MHz
	5 MHz Bandwidth	Lowest	21475	882.5 MHz
		Middle	21625	897.5 MHz
		Highest	21775	912.5 MHz
	10 MHz Bandwidth	Lowest	21500	885.0 MHz
		Middle	21625	897.5 MHz
		Highest	21750	955.0 MHz
Test Configuration LTE Band 20	5 MHz Bandwidth	Lowest	24175	834.5 MHz
		Middle	24300	847.0 MHz
		Highest	24425	859.5 MHz
	10 MHz Bandwidth	Lowest	24200	837.0 MHz
		Middle	24300	847.0 MHz
		Highest	24400	857.0 MHz
	20 MHz Bandwidth	Lowest	24250	842.0 MHz
		Middle	24300	847.0 MHz
		Highest	24350	852.0 MHz

Test Configuration LTE Band 28	3 MHz Bandwidth	Lowest	27225	704.5 MHz
		Middle	27375	719.5 MHz
		Highest	27645	746.5 MHz
	5 MHz Bandwidth	Lowest	27235	705.5 MHz
		Middle	27385	720.5 MHz
		Highest	27635	745.5 MHz
	10 MHz Bandwidth	Lowest	27260	708.0 MHz
		Middle	27410	723.0 MHz
		Highest	27610	743.0 MHz
	20 MHz Bandwidth	Lowest	27310	713.0 MHz
		Middle	27460	728.0 MHz
		Highest	27560	738.0 MHz
Test Configuration LTE Band 38	5 MHz Bandwidth	Lowest	37775	2572.5 MHz
		Middle	38000	2595.0 MHz
		Highest	38225	2617.5 MHz
	10 MHz Bandwidth	Lowest	37800	2575.0 MHz
		Middle	38000	2595.0 MHz
		Highest	38200	2615.0 MHz
	15 MHz Bandwidth	Lowest	37825	2577.5 MHz
		Middle	38000	2595.0 MHz
		Highest	38175	2612.5 MHz
	20 MHz Bandwidth	Lowest	37850	2580.0 MHz
		Middle	38000	2595.0 MHz
		Highest	38150	2610.0 MHz
Test Configuration LTE Band 40	5 MHz Bandwidth	Lowest	38675	2302.5 MHz
		Middle	39150	2350.0 MHz
		Highest	39625	2397.5 MHz
	10 MHz Bandwidth	Lowest	38700	2305.0 MHz
		Middle	39150	2350.0 MHz
		Highest	39600	2395.0 MHz
	15 MHz Bandwidth	Lowest	38725	2307.5 MHz
		Middle	39150	2350.0 MHz
		Highest	39575	2392.5 MHz
	20 MHz Bandwidth	Lowest	38725	2310.0 MHz
		Middle	39150	2350.0 MHz
		Highest	39550	2390.0 MHz

5. Test Facility And Test Instrument Used

5.1 Test Facility

All measurement facilities used to collect the measurement data are located at Shenzhen BCTC Testing Co., Ltd. Address: 1-2/F., Building B, Pengzhou Industrial Park, No.158, Fuyuan 1st Road, Zhancheng, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, China. The site and apparatus are constructed in conformance with the requirements of ANSI C63.4 and CISPR 16-1-1 other equivalent standards.

5.2 Test Instrument Used

Item	Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until
1	966 chamber	ChengYu	966 Room	966	May 15, 2023	May 14, 2026
2	Receiver	R&S	ESR	102075	May 16, 2024	May 15, 2025
3	Receiver	R&S	ESRP	101154	May 16, 2024	May 15, 2025
4	Amplifier	Schwarzbeck	BBV9744	9744-0037	May 16, 2024	May 15, 2025
5	TRILOG Broadband Antenna	Schwarzbeck	VULB 9163	942	May 21, 2024	May 20, 2025
6	Loop Antenna	Schwarzbeck	FMZB1519B	00014	May 21, 2024	May 20, 2025
7	Amplifier	SKET	LAPA_01G18G-45dB	SK2021040901	May 16, 2024	May 15, 2025
8	Horn Antenna	Schwarzbeck	BBHA9120D	1541	May 21, 2024	May 20, 2025
9	Preamplifier	MITEQ	TTA1840-35-HG	2034381	May 16, 2024	May 15, 2025
10	Horn antenna	Schwarzbeck	BBHA9170	00822	May 21, 2024	May 20, 2025
11	Spectrum Analyzer 9kHz-40GHz	R&S	FSP 40	100363	May 16, 2024	May 15, 2025
12	Software	Frad	EZ-EMC	FA-03A2 RE	\	\
13	Spectrum Analyzer	Keysight	N9020A	MY49100060	May 16, 2024	May 15, 2025
14	Signal Generator	Keysight	N5182B	MY56200519	May 16, 2024	May 15, 2025
15	Signal Generator	Keysight	83711B	US37100131	May 16, 2024	May 15, 2025
16	Communication test set	R&S	CMW500	126173	Nov. 11. 2024	Nov. 10, 2025
17	band rejection filter	ZBSF	ZBSF-C2441.5	1706003606	May 16, 2024	May 15, 2025
18	Programmable constant temperature and humidity test chamber	DGBELL	BTKS5-150C	\	Jul. 01, 2024	Jun. 30, 2025
19	Radio frequency control box	MAIWEI	MW200-RFCB	\	\	\
20	Software	MAIWEI	MTS 8200	\	\	\

6. Transmitter Maximum Output Power

6.1 Definition

The following UE Power Classes define the maximum output power for any transmission bandwidth within the channel bandwidth. The period of measurement shall be at least one sub-frame (1 ms).

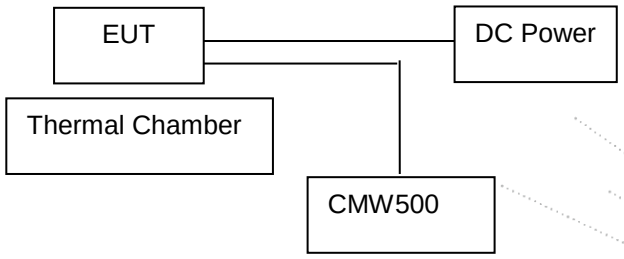
6.2 Test Method

Test environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; as specified in annex B.
Frequencies to be tested: low range, mid-range, high range; as specified in ETSI TS 136 508 [2], clause 4.3.1. Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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 ETSI TS 136 521-1 [1], clause 6.2.2.4.1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

6.3 Limit

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)
22	23	+3,0/-4,5
28	23	+2,7/-3,2
31	23	±2,7
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
65	23	±2,7
68	23	±2,7
NOTE: For transmission bandwidths (ETSI 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).		

6.4 Test Setup



6.5 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 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.
Details of the test method can be found in ETSI TS 136 521-1 [1], clause 6.2.2.

6.6 Test Result

Please refer to Appendix 1. Transmitter maximum output power
Test Result: Pass

7. Transmitter Spectrum Emission Mask

7.1 Definition

The spectrum emission mask of the UE applies to frequencies (ΔfOOB) starting from the ± edge of the assigned E-UTRA channel bandwidth.

7.2 Test Method

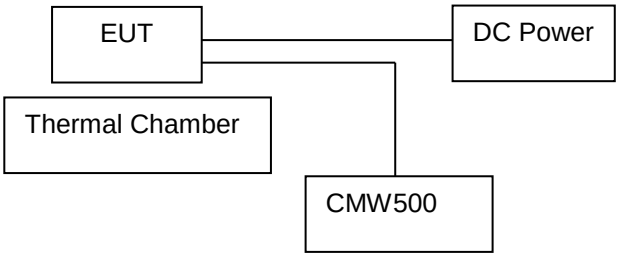
Test environment: normal, as specified in annex B.
Frequencies to be tested: low range, mid-range and high range; as specified in ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidths to be tested: lowest, 5 MHz, 10 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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 ETSI TS 136 521-1 [1], clause 6.6.2.1.4.1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

7.3 Limit

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 are to 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.

7.4 Test Setup



7.5 Test procedure

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 table 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, operating band combinations and environmental conditions.

7.6 Test Result

Please refer to Appendix 2. Transmitter spectrum emission mask
Test Result: Pass

8. Transmitter Spurious Emissions

8.1 Definition

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.4] 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.

8.2 Test Method

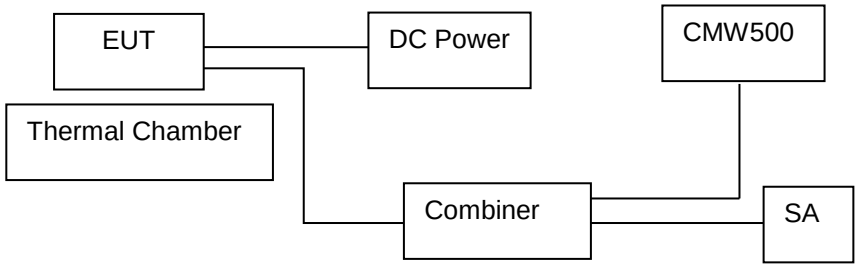
Test Environment: normal, as specified in annex B.
Frequencies to be tested: low range, mid-range, high range; see ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2]. Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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 ETSI TS 136 521-1 [1], clause 6.6.3.1.4.1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

8.3 Limit

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: Applies for Band 42 and Band 43.			

E-UTRA Band	Spurious emission						
	Protected band	Frequency range (MHz)			Maximum Level (dBm)	MBW (MHz)	Comment
1	E-UTRA Band 1, 7, 8, 20, 22, 28, 31, 32, 38, 40, 42, 43, 65, 67, 68	F_{DL_low}	-	F_{DL_high}	-50	1	
	E-UTRA Band 3, 34	F_{DL_low}	-	F_{DL_high}	-50	1	Note 3
	Frequency range	1 895	-	1 915	-15,5	5	Notes 3, 8
	Frequency range	1 915	-	1 920	+1,6	5	Notes 3, 8, 42
3	E-UTRA Band 1, 7, 8, 20, 28, 31, 32, 33, 34, 38, 40, 43, 65, 67, 68	F_{DL_low}	-	F_{DL_high}	-50	1	
	E-UTRA Band 3	F_{DL_low}	-	F_{DL_high}	-50	1	Note 3
	E-UTRA Band 22, 42	F_{DL_low}	-	F_{DL_high}	-50	1	Note 2
7	E-UTRA Band 1, 3, 7, 8, 20, 22, 28, 31, 32, 33, 34, 40, 42, 43, 65, 67, 68	F_{DL_low}	-	F_{DL_high}	-50	1	
	Frequency range	2 570	-	2 575	+1,6	5	Notes 3, 4
	Frequency range	2 575	-	2 595	-15,5	5	Notes 3, 4
	Frequency range	2 595		2 620	-40	1	Notes 3, 4
8	E-UTRA Band 1, 20, 28, 31, 32, 33, 34, 38, 40, 65, 67, 68	F_{DL_low}	-	F_{DL_high}	-50	1	
	E-UTRA Band 3	F_{DL_low}	-	F_{DL_high}	-50	1	Note 2
	E-UTRA Band 7	F_{DL_low}	-	F_{DL_high}	-50	1	Note 2
	E-UTRA Band 8	F_{DL_low}	-	F_{DL_high}	-50	1	Note 3
	E-UTRA Band 22, 42, 43	F_{DL_low}	-	F_{DL_high}	-50	1	Note 2
20	E-UTRA Band 1, 3, 7, 8, 22, 31, 32, 33, 34, 40, 43, 65, 67, 68	F_{DL_low}	-	F_{DL_high}	-50	1	
	E-UTRA Band 20	F_{DL_low}	-	F_{DL_high}	-50	1	Note 3
	E-UTRA Band 38, 42	F_{DL_low}	-	F_{DL_high}	-50	1	Note 2
	Frequency range	758	-	788	-50	1	
22	E-UTRA Band 1, 3, 7, 8, 20, 28, 31, 32, 33, 34, 38, 40, 43, 65, 67, 68	F_{DL_low}	-	F_{DL_high}	-50	1	
	Frequency range	3 510	-	3 525	-40	1	Note 3
	Frequency range	3 525	-	3 590	-50	1	
20	E-UTRA Band 1, 3, 7, 8, 33, 34, 43	F_{DL_low}	-	F_{DL_high}	-50	1	
	E-UTRA Band 20	F_{DL_low}	-	F_{DL_high}	-50	1	Note 3
	E-UTRA Band 38, 42	F_{DL_low}	-	F_{DL_high}	-50	1	Note 2

8.4 Test Setup



8.5 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), 5 MHz bandwidth (band 20) are reported.
Nothing emissions have been detected in the frequency range 9 kHz to 30MHz

8.6 Test Result

Please refer to Appendix 3. Transmitter Spurious Emissions
Test Result: Pass

9. Transmitter Minimum Output Power

9.1 Definition

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.

9.2 Test Method

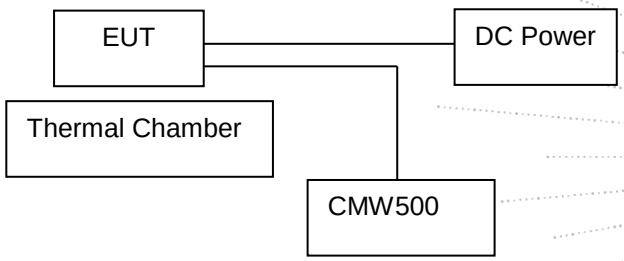
Test Environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; as specified in annex B.
Frequencies to be tested: low range, mid-range and high range; see ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth, as specified in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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 ETSI TS 136 521-1 [1], clause 6.3.2.4.1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

9.3 Limit

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

9.4 Test Setup



9.5 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 6.3.2.1.4.1-1. 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 (1ms). For TDD slots with transient periods are not under test.
4. Repeat for applicable test frequencies, channel bandwidths, operating band combinations and environmental conditions.

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.

9.6 Test Result

Please refer to Appendix 4. Transmitter minimum output power
Test Result: Pass

10. Transmitter Adjacent Channel Leakage Power Ratio

10.1 Definition

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.
E-UTRA Adjacent Channel Leakage power Ratio (E-UTRAACLR) 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 at nominal channel spacing. The assigned E-UTRA channel power and adjacent E-UTRA channel power are measured with rectangular filters with measurement bandwidths specified in table 6.6.2.3.3.1-1 in ETSI TS 136 521-1 [1].
UTRA Adjacent Channel Leakage power Ratio is specified for both the first UTRA adjacent channel (UTRAACLR1) and the 2nd UTRA adjacent channel (UTRAACLR2). The UTRA channel power is measured with a RRC bandwidth filter with roll-off factor α = 0,22. The assigned E-UTRA channel power is measured with a rectangular filter with measurement bandwidth specified in table 4.2.11.1.2-2.

10.2 Test Method

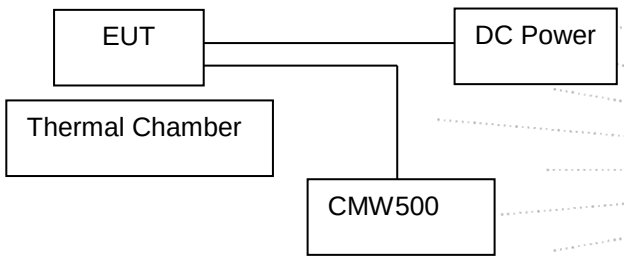
Test Environment: normal, TL/VL, TL/VH, TH/VL and TH/VH, as specified in annex B.
Frequencies to be tested: low range, mid-range and high range; see ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidth to be tested: lowest, 5 MHz, 10 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI TS 136 521-1 [1], clauses C.0, C.1, 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 ETSI TS 136 521-1 [1].
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

10.3 Limit

See clause 4.2.4.11.1.2 of ETSI EN 301 908-13

10.4 Test Setup



10.5 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 6.6.2.3.4.1-1. 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.

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.

10.6 Test Result

Please refer to Appendix 5. Transmitter adjacent channel leakage power ratio
Test Result: Pass

11. Control and Monitoring Functions (UE)

11.1 Definition

This requirement, together with other control and monitoring technical requirements identified in the table of cross references in the applicable part, verifies that the control and monitoring functions of the UE prevent it from transmitting in the absence of a valid network.

This test is applicable to radio communications equipment and ancillary equipment in the operating band defined in the applicable part of this multipart harmonized standard.

This test shall be performed on the radio communications equipment and/or a representative configuration of the ancillary equipment.

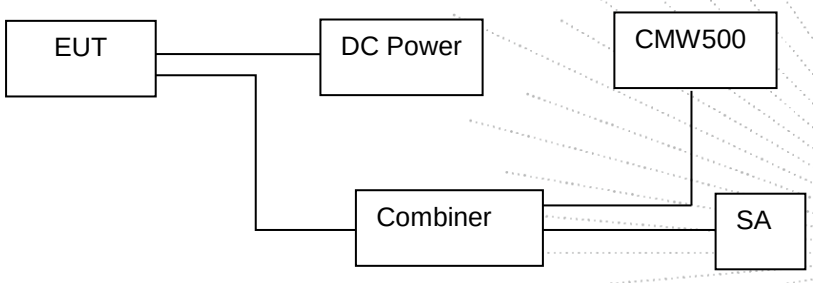
11.2 Test Method

a) 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.
b) The UE shall be switched on for a period of approximately fifteen minutes, and then switched off.
c) 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.
d) The maximum power emitted from the UE throughout the duration of the test shall be recorded.

11.3 Limit

The maximum measured power during the duration of the test shall not exceed -30dBm.

11.4 Test Setup

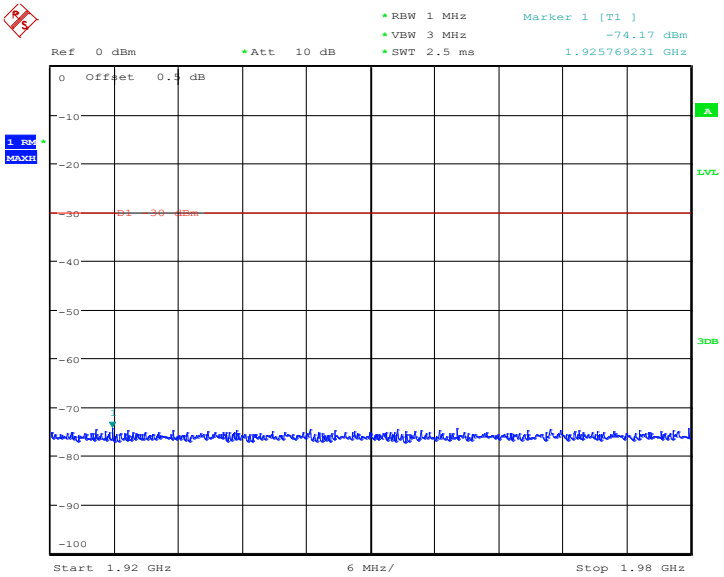


11.5 Test Procedure

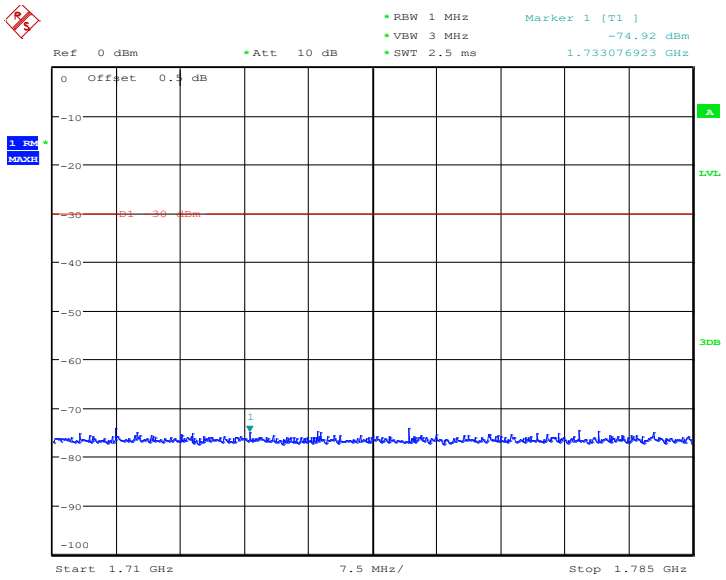
1.At the start of the test, the UE shall be switched off. The UE antenna connector shall be connected to a power measuring equipment, with the following characteristics: - the RF bandwidth shall exceed the total operating transmit frequency range of the UE for operation with an applicable part; - the 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.
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.

11.6 Test Result

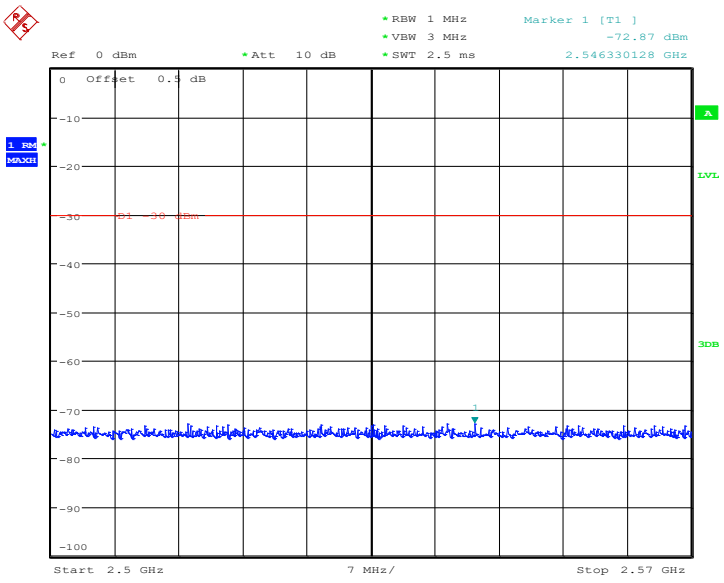
Band 1



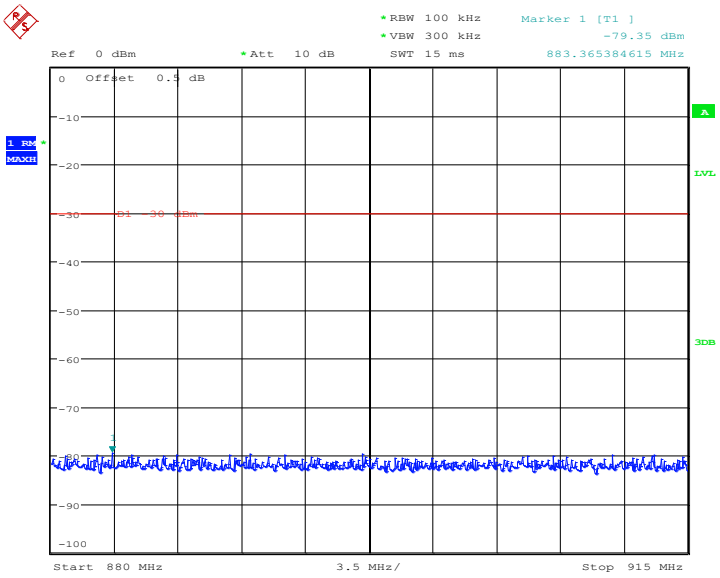
Band 3


RBW 1 MHz
VBW 3 MHz
SWT 2.5 ms
Marker 1 [T1]
-74.92 dBm
1.733076923 GHz
Ref 0 dBm
Att 10 dB
Offset 0.5 dB
1 RM
MAXH
A
LVL
3DB
Start 1.71 GHz
7.5 MHz/
Stop 1.785 GHz

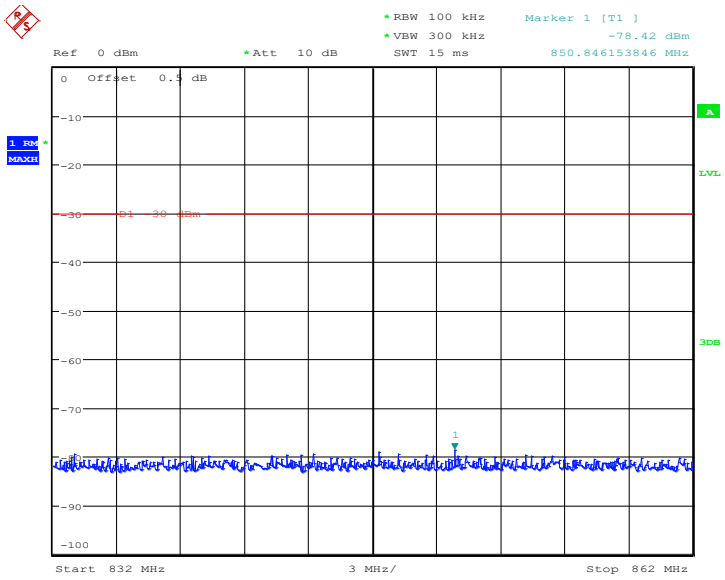
Band 7


RBW 1 MHz
VBW 3 MHz
SWT 2.5 ms
Marker 1 [T1]
-72.87 dBm
2.546330128 GHz
Ref 0 dBm
Att 10 dB
Offset 0.5 dB
1 RM
MAXH
A
LVL
3DB
Start 2.5 GHz
7 MHz/
Stop 2.57 GHz

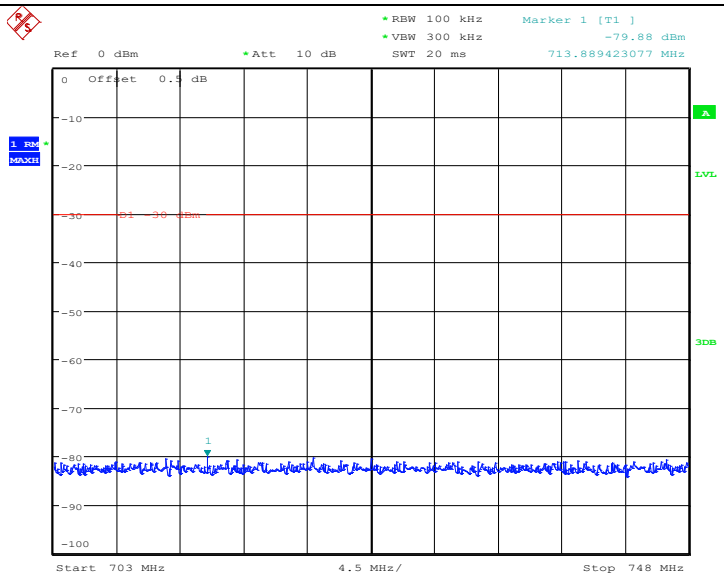
Band 8



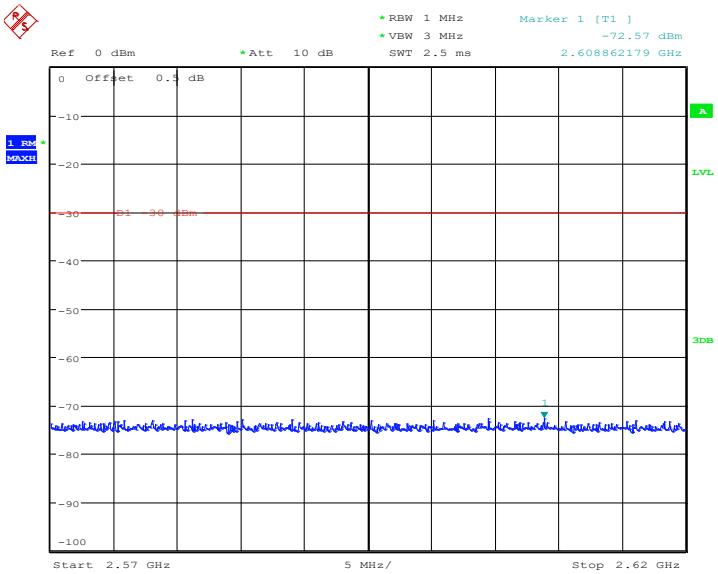
Band 20



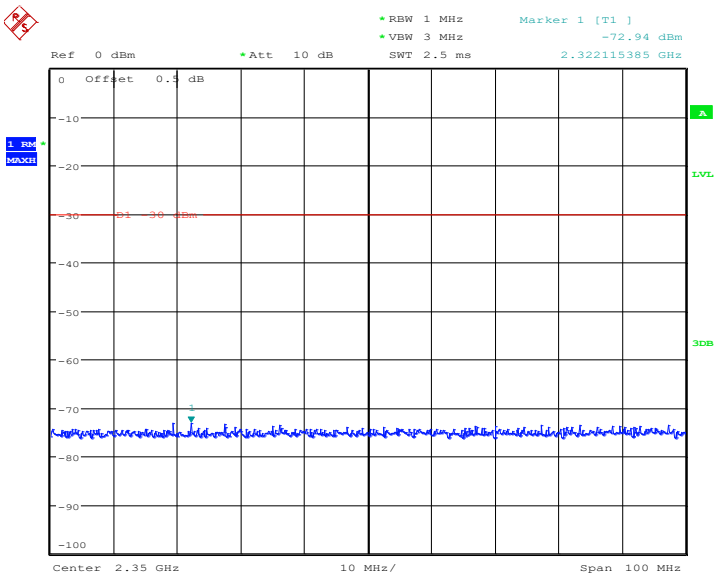
Band 28



Band 38



Band 40


RBW 1 MHz
VBW 3 MHz
SWT 2.5 ms
Marker 1 [T1]
-72.94 dBm
2.322115385 GHz
Ref 0 dBm
Att 10 dB
Offset 0.5 dB
1 RM
MAXH
A
LVL
3DB
Center 2.35 GHz
10 MHz/
Span 100 MHz

12. Receiver Adjacent Channel Selectivity (ACS)

12.1 Definition

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).

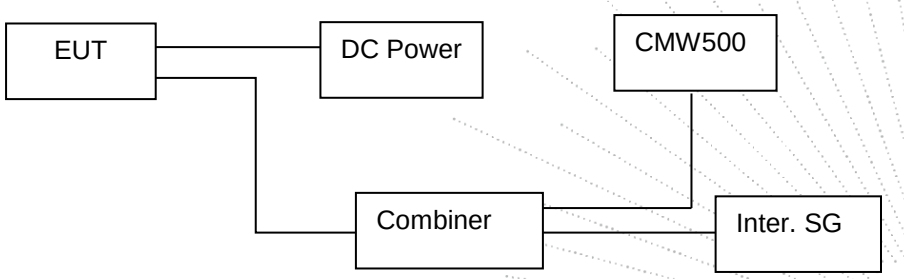
12.2 Test Method

Test Environment: normal, as specified in annex B.
Frequencies to be tested: mid-range see ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI TS 136 521-1 [1], clauses C.0, C.1 and C.3.1 and uplink signals according to clauses H.1 and H.3.1.
4) The UL and DL Reference Measurement channels are set according to ETSI TS 136 521-1 [1], table 7.5.4.1-1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

12.3 Limit

The throughput Rav shall be ≥ 95 %

12.4 Test Setup



12.5 Test 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 7.5.4.1-1. 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.

12.6 Test Result

Please refer to Appendix 6. Receiver adjacent channel selectivity
Test Result: Pass

13. Receiver Blocking Characteristics

13.1 Definition

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.

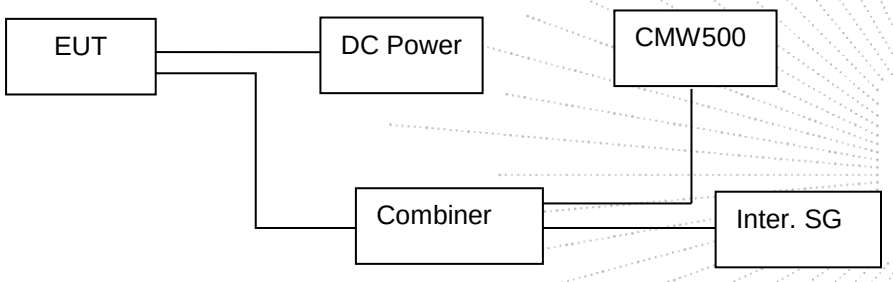
13.2 Test Method

Test Environment: normal, as specified in annex B.
For In-band blocking, the frequencies to be tested are mid-range as defined in ETSI TS 136 508 [2], clause 4.3.1.
For out-of-band blocking, the frequency to be tested is low or high range as defined in ETSI TS 136 508 [2], clause 4.3.1.
For Narrow-band blocking, the frequencies to be tested are mid-range as defined in ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in ETSI 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 ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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.-1.
4) The UL and DL Reference Measurement channels are set according to ETSI TS 136 521-1 [1], table 7.6.1.4.1-1, or table 7.6.2.4.1-1, or table 7.6.2.4.1-1 as applicable.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

13.3 Limit

The throughput Rav shall be ≥ 95 %

13.4 Test Setup



13.5 Test 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 $\leqslant$ 3,0 GHz or within +0, -4,0 dB of the target level for carrier frequency 3,0 GHz < f $\leqslant$ 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.

12.6 Test Result

Please refer to Appendix. 7 Receiver blocking characteristics in-band & 8. Receiver blocking characteristics narrow-band
Test Result: Pass

14. Receiver Intermodulation Characteristics

14.1 Definition

Intermodulation response rejection is a measure of the capability of the receiver to receive- 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.

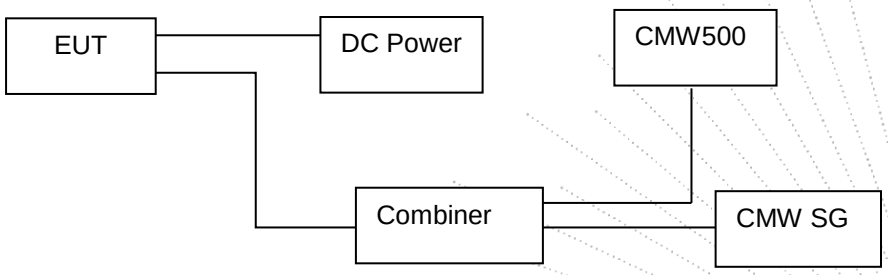
14.2 Test Method

Test Environment: normal, as specified in annex B.
Frequencies to be tested: mid-range; see ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidths to be tested: lowest, 5 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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 ETSI TS 136 521-1 [1], table 7.8.4.1-1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

14.3 Limit

The throughput Rav shall be ⩾ 95 %.

14.4 Test Setup



14.5 Test 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 7.8.1.4.1-1. 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 7.8.1.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3. Set the Downlink signal level to the value as defined in table 4.2.9.2-1. 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 4.2.9.2-1 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].

4. Set the Interfering signal levels to the values as defined in table 4.2.9.2-1, using a modulated interferer bandwidth as defined in annex D of 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 for applicable test frequencies, channel bandwidths and operating band combinations.

14.6 Test Result

Please refer to Appendix 9. Receiver intermodulation characteristics
Test Result: Pass

15. Receiver Spurious Response

15.1 Definition

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 4.2.7.1.2-4 is not met.

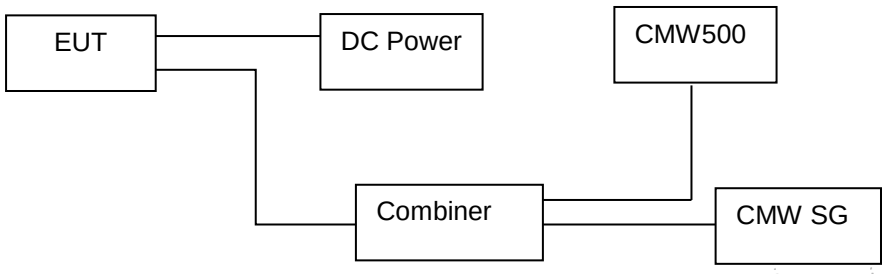
15.2 Test Method

The initial conditions shall be the same as for those in out-of-band blocking in clause 5.3.6.1.1 in order to test spurious responses obtained in clause 5.3.6.1.2 under the same conditions.

15.3 Limits

The throughput Rav shall be ≥ 95 %

15.4 Test Setup



15.5 Test 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 4.2.8.2-2. 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..

15.6 Test Result

Test Result: Pass

16. Receiver Spurious Emissions

16.1 Definition

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

16.2 Test Method

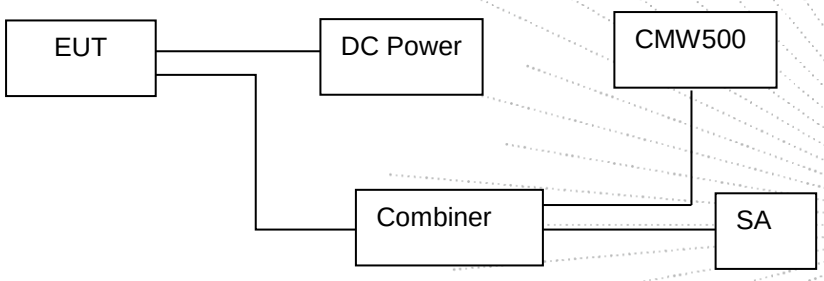
Test Environment: normal, as specified in annex B.
Frequencies to be tested: low range, mid-range and high range; as specified in ETSI TS 136 508 [2], clause 4.3.1. Channel bandwidth to be tested: highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1. Uplink/Downlink configurations: as specified in ETSI TS 136 521-1 [1]:
1) Connect a spectrum analyser (or other suitable test equipment) to the UE antenna connectors.
2) The parameter settings for the cell are set up according to ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI TS 136 521-1 [1], clauses C.0, C.1 and C.3.1.
4) The DL Reference Measurement channels are set according to ETSI TS 136 521-1 [1], clause 7.9.4.1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

16.3 Limit

Table 4.2.10.2-1: General receiver spurious emission requirements

Frequency Band	Measurement bandwidth	Maximum level	Note
30 MHz ≤ f < 1 GHz	100 kHz	-57 dBm	
1 GHz ≤ f ≤ 12,75 GHz	1 MHz	-47 dBm	
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.			

16.4 Test Setup



16.5 Test Procedure

1. Sweep the spectrum analyzer (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.
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.

16.6 Test Result

Please refer to Appendix 11. Receiver spurious emissions
Test Result: Pass

17. Radiated Emissions

17.1 Definition

This test assesses the ability of radio communications equipment and ancillary equipment to limit unwanted emissions from the enclosure port.

This test is applicable to radio communications equipment and ancillary equipment.

This test shall be performed on the radio communications equipment and/or a representative configuration of the ancillary equipment.

17.2 Test Method

Whenever possible the test site should be a fully anechoic chamber simulating the free-space conditions. EUT shall be placed on a non-conducting support. Mean power of any spurious components shall be detected by the test antenna and measuring receiver (e.g. a spectrum analyser).

At each frequency at which a component is detected, the EUT shall be rotated to obtain maximum response, and the effective radiated power (e.r.p.) of that component determined by a substitution measurement, which shall be the reference method. The measurement shall be repeated with the test antenna in the orthogonal polarization plane. Test systems are allowed to be pre-substituted by carrying out the substitution measurement for each frequency and by recording the obtained value into test system software as a correction factor.

NOTE: Effective radiated power (e.r.p.) refers to the radiation of a half wave tuned dipole instead of an isotropic antenna. There is a constant difference of 2,15 dB between e.i.r.p. and e.r.p.

e.r.p. (dBm) = e.i.r.p. (dBm) - 2,15 (ITU-R Recommendation SM.329-12 [3], annex 1).

Measurements are made with a tuned dipole antenna or a reference antenna with a known gain referenced to an isotropic antenna. Unless otherwise stated, all measurements are done as mean power (RMS).

If a different test site or method is used, this shall be stated in the test report. The results shall be converted to the reference method values and the validity of the conversion shall be demonstrated.

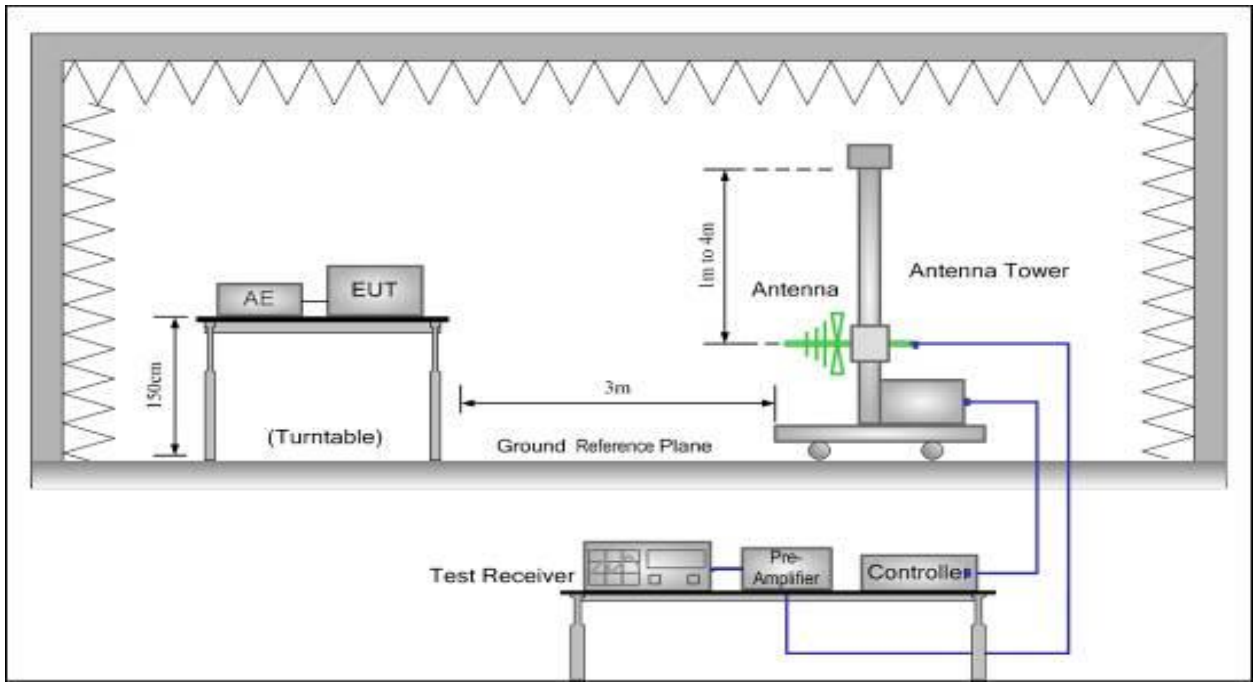
17.3 Limit

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

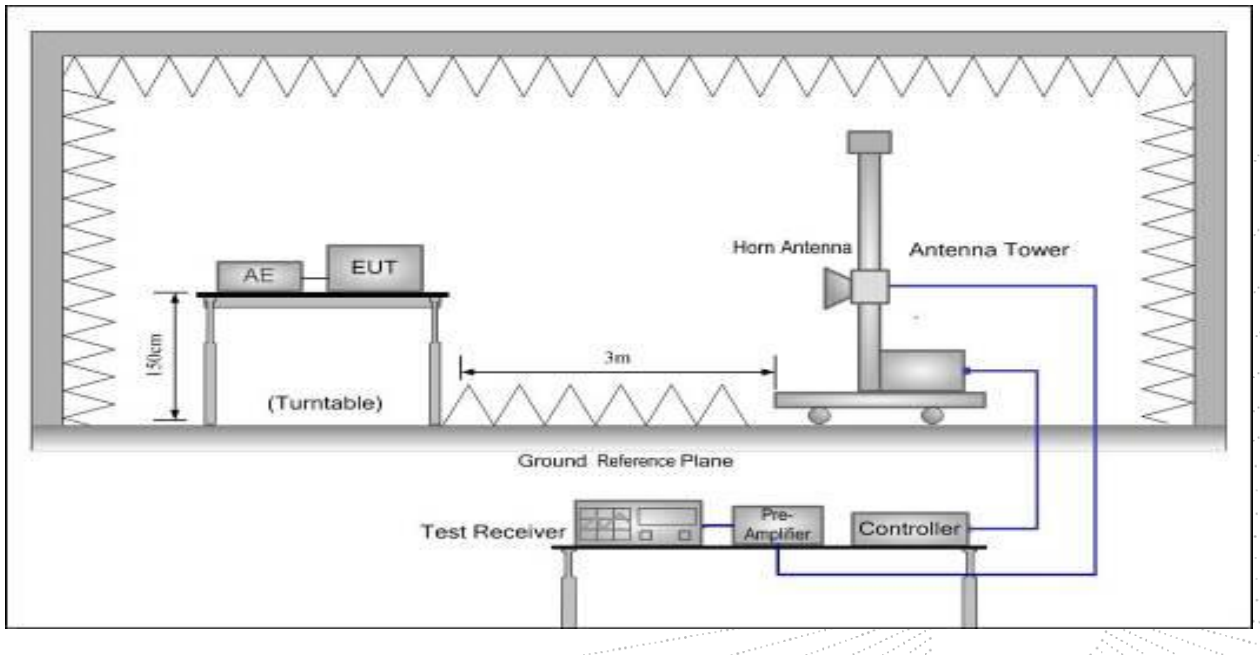
Frequency	Minimum requirement (e.r.p.)/ reference bandwidth idle mode	Minimum requirement (e.r.p.)/ reference bandwidth traffic mode	Applicability
30 MHz ≤ f < 1 000 MHz	-57 dBm/100 kHz	-36 dBm/100 kHz	All
1 GHz ≤ f < 12,75 GHz	-47 dBm/1 MHz	-30 dBm/1 MHz	All
fc - 2,5 × 5 MHz < f < fc + 2,5 × 5 MHz		Not defined	UTRA FDD, UTRA TDD, 3,84 Mcps option, cdma2000, spreading rate 3
fc - 2,5 × $BW_{Channel}$ MHz < f < fc + 2,5 × $BW_{Channel}$ MHz		Not defined	E-UTRA FDD, E-UTRA TDD, Mobile WiMAX, UMB
fc - 2,5 × 10 MHz < f < fc1 + 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
NOTE: fc is the UE transmit centre frequency.			

17.4 Test Setup

Below 1GHz



Above 1GHz



17.5 Test Procedure

Substitution method was performed to determine the actual ERP emission levels of the EUT.
The following test procedure as below:

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:
ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd)
where:
Pg is the generator output power into the
Substitution antenna.

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.

17.6 Test Result

EUTRA Band 1, Middle Channel- traffic mode				
Frequency (MHz)	**Spurious Emission**		**Limit dBm(EIRP)**	**Result**
	Polarization	**Level dBm(EIRP)**		
364.31	Vertical	-47.62	Blew 1G: -36 Above 1G: -30	Pass
1910	V	-45.23		
3950	V	-44.83		
364.31	Horizontal	-40.99		
1910	H	-38.35		
3950	H	-37.15		
EUTRA Band 1, Middle Channel - idle mode				
Frequency (MHz)	**Spurious Emission**		**Limit dBm(EIRP)**	**Result**
	Polarization	**Level dBm(EIRP)**		
364.31	Vertical	-68.61	Below 1G: -57 Above 1G: -47	Pass
1910	V	-72.35		
3950	V	-73.49		
364.31	Horizontal	-77.25		
1910	H	-75.23		
3950	H	-70.80		

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.

18. Receiver Reference Sensitivity Level

18.1 Definition

Reference sensitivity measures the UE's ability to receive data with a given average throughput for a specified reference measurement channel, under conditions of low signal level, ideal propagation and no added noise.
A UE unable to meet the throughput requirement under these conditions will decrease the effective coverage area of an e-NodeB.

18.2 Test Method

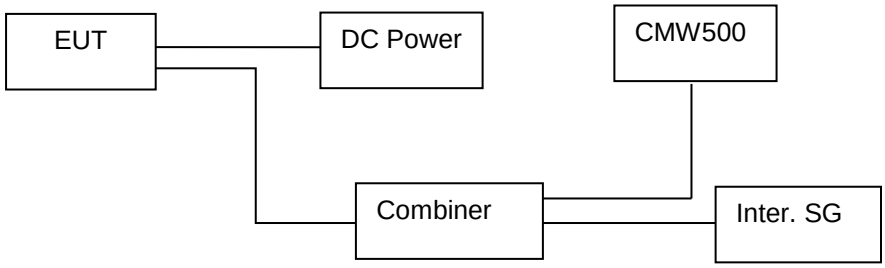
Test Environment: normal, TL/VL, TL/VH, TH/VL, TH/VH; as specified in annex B.
Frequencies to be tested: low range, mid-range, high range see ETSI TS 136 508 [2], clause 4.3.1.
Channel bandwidth to be tested: lowest, 5 MHz and highest channel bandwidth as defined in ETSI TS 136 508 [2], clause 4.3.1.
Uplink/Downlink configurations: as specified in ETSI 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 ETSI TS 136 508 [2], clause 4.4.3.
3) Downlink signals are initially set up according to ETSI 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 ETSI TS 136 521-1 [1], table 7.3.4.1-1.
5) Propagation conditions are set according to ETSI TS 136 521-1 [1], clause B.0.
6) Ensure the UE is in State 3A-RF according to ETSI 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 ETSI TS 136 521-1 [1], ETSI TS 136 508 [2] and ETSI TS 136 509 [i.10] respectively.

18.3 Limit

Channel bandwidth							
E-UTRA Band	**1,4 MHz (dBm)**	**3 MHz (dBm)**	**5 MHz (dBm)**	**10 MHz (dBm)**	**15 MHz (dBm)**	**20 MHz (dBm)**	**Duplex Mode**
1	-	-	-99,3	-96,3	-94,5	-93,3	FDD
3	-101,0	-98,0	-96,3	-93,3	-91,5	-90,3	FDD
7	-	-	-97,3	-94,3	-92,5	-91,3	FDD
8	-101,5	-98,5	-96,3	-93,3	-	-	FDD
20	-	-	-96,3	-93,3	-90,5	-89,3	FDD
22	-	-	-96,0	-93,0	-91,2	-90,0	FDD
28	-	-99,5	-97,8	-94,8	-93,0	-90,3	FDD
31	-98,3	-95,0	-92,8	-	-	-	FDD
33	-	-	-99,3	-96,3	-94,5	-93,3	TDD
34	-	-	-99,3	-96,3	-94,5	-	TDD
38	-	-	-99,3	-96,3	-94,5	-93,3	TDD
40	-	-	-99,3	-96,3	-94,5	-93,3	TDD
42	-	-	-98,0	-95,0	-93,2	-92,0	TDD
43	-	-	-98,0	-95,0	-93,2	-92,0	TDD
65	-103,5	-100,5	-98,8	-95,8	-94,0	-92,8	FDD

NOTE 1: The transmitter shall be set to maximum output power level (ETSI TS 136 521-1 [1], table 7.3.5-2).
NOTE 2: The reference measurement channel is specified in ETSI TS 136 521-1 [1], clause A.3.2 with one sided dynamic OCNG Pattern OP.1 FDD/TDD as described in ETSI TS 136 521-1 [1], clauses A.5.1.1 and A.5.2.1.
NOTE 3: The signal power is specified per port.

18.4 Test Setup



18.5 Test Procedure

1) SS transmits PDSCH via PDCCH DCI format 1A for C_RNTI to transmit the DL RMC according to ETSI TS 136 521-1 [1], table 7.3.4.1-1. 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 ETSI TS 136 521-1 [1], table 7.3.4.1-1. Since the UE has no payload data to send, the UE transmits uplink MAC padding bits on the UL RMC.

3) Set the Downlink signal level to the appropriate REFSENS value defined in table 4.2.12.1.2-1. 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. (obtain correct UE output power as specified in ETSI TS 136 521-1 [1]).

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

5) Repeat for applicable test frequencies, channel bandwidths and operating bands.

Details of the test method can be found in ETSI TS 136 521-1 [1], clause 7.3.

18.6 Test Result

Please refer to Appendix 10. Receiver Reference Sensitivity Level
Test Result: Pass

19. Test Data for LTE Band 1, LTE Band 3, LTE Band 7, LTE Band 8, LTE Band 20, LTE Band 28, LTE Band 38, LTE Band 40

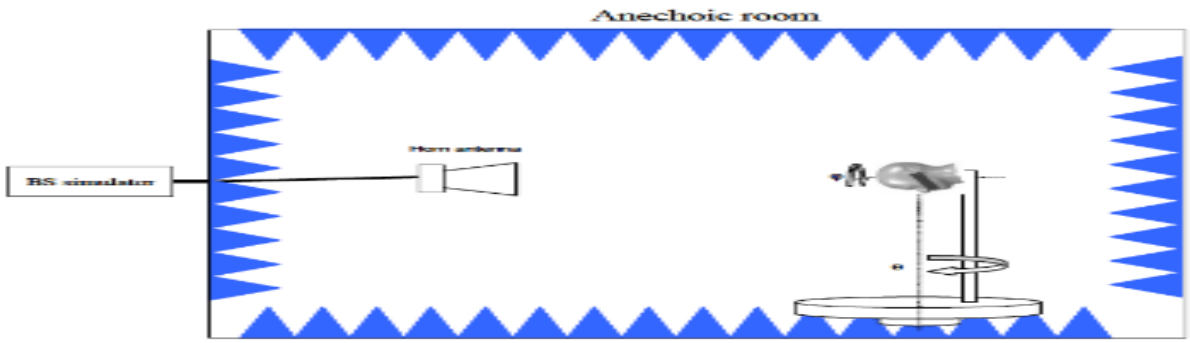
Refer to Appendix for LTE Band 1, LTE Band 3, LTE Band 7, LTE Band 8, LTE Band 20, LTE Band 28, LTE Band 38, LTE Band 40

20. Receiver Total Radiated Sensitivity

20.1 Test Requirement & Test Method

ETSI EN 301 908-13

20.2 Test Setup



20.3 Limit

The average measured Total Radiated Sensitivity (TRS) of low, mid and high channels for handheld UE shall be lower than the average TRS requirement specified in table 4.2.13.2-1. The averaging shall be done in linear scale for the TRS results of both right and left side of the phantom head. Average TRS requirement is shown in the column "Average" on the requirement tables.

$$TRS_{average} = 10\log\left[6\Big/\left(\frac{1}{10^{P_{left\_low}/10}}+\frac{1}{10^{P_{left\_mid}/10}}+\frac{1}{10^{P_{left\_high}/10}}+\frac{1}{10^{P_{right\_low}/10}}+\frac{1}{10^{P_{right\_mid}/10}}+\frac{1}{10^{P_{right\_high}/10}}\right)\right]$$

Table 4.2.13.2-1: TRS minimum requirements for E-UTRA FDD and TDD bands in the speech position Beside Head Hand Left and Beside Head Hand Right (BHHL/BHHR) for the primary mechanical mode

Operating band	Unit	<REFI$_{or}$>
		Average
1	dBm/10 MHz	-86
3	dBm/10 MHz	-86
7	dBm/10 MHz	-85,7
8	dBm/10 MHz	-82,5
20	dBm/10 MHz	-82,5
28	dBm/10 MHz	-82,5
38	dBm/20 MHz	-82,5
40	dBm/20 MHz	-82,5
NOTE: Not applicable for carrier aggregation.		

20.4 Test Procedure:

1) Position the UE according to the DUT positioning for speech mode.
2) Power on the UE.
3) Set the initial conditions as per Subclause 7.3 of 3GPP TS 36.521-1, with the following exception: set the carrier frequency, channel bandwidth, RB length and RB location as per Table 5.3-2 for FDD mode or Table 5.4-2 for TDD mode. For DUTs with more than one receiver port, all the tests should be performed using both (all) antenna ports simultaneously.
4) Follow Steps 1 through 4 in Subclause 7.3.4.2 of 3GPP TS 36.521-1, with the following exception: measure the receiver sensitivity by adjusting the downlink signal level to 95 % throughput of the maximum throughput of the reference channel (maximum throughput is per Annex A of 3GPP TS 36.521-1).
5) For the anechoic chamber based methodologies,
For FDD mode: repeat Step 1) with 3-D sampling grid specified in Subclause 4.4. The minimum RF power level resulting in a data throughput greater than or equal to 95 % throughput of the maximum throughput for each test shall be recorded for integration pursuant to Subclause 7.1.5.1 to calculate TRS.
For TDD mode: Repeat Step 1) until a sufficient number of independent samples (see section 4.5) of 〖〖|S〗_(21,n,m)^thres |〗^2has been measured. The minimum RF power level resulting in a data throughput greater than or equal to 95 % throughput of the maximum throughput for each sample shall be recorded for calculating the TRS according to Subclause
7.1.6.1.
6) Repeat the measurement of the DUT on the left and right ears of the head phantom using the left and right hand phantom for low, mid and high channels.
7) Calculate the average and minimum TRS.

20.5 Test Result

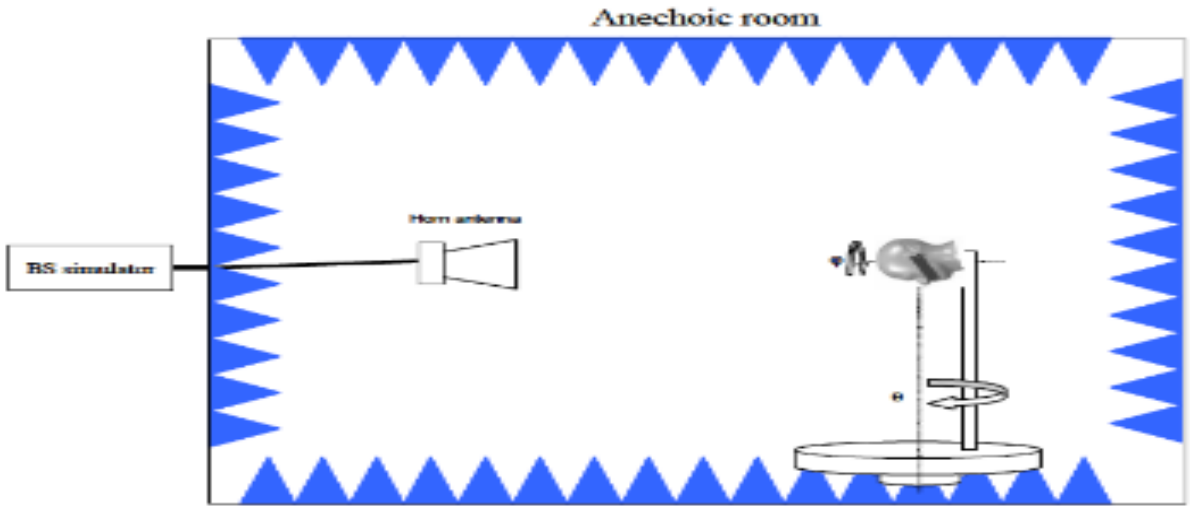
Note: This product does not meet the size required by the standard.

21. Total Radiated Power

21.1 Test Requirement & Test Method

ETSI EN 301 908-13

21.2 Test Setup



21.3 Limit

The average TRP of low, mid and high channels in beside head position shall be higher than minimum performance
requirements for roaming bands shown in table 4.2.14.2-1. The averaging shall be done in linear scale for the TRP results of both right and left side of the phantom head.

$$TRP_{average} = 10\log\left[\frac{10^{P_{left\_low}/10} + 10^{P_{left\_mid}/10} + 10^{P_{left\_high}/10} + 10^{P_{right\_low}/10} + 10^{P_{right\_mid}/10} + 10^{P_{right\_high}/10}}{6}\right]$$

Table 4.2.14.2-1: TRP minimum performance requirement for E-UTRA FDD and TDD bands in the speech position Beside Head Hand Left and Beside Head Hand Right (BHHL/BHHR) for primary mechanical mode

Operating band	Unit	Power Class 3
		Power (dBm) Average
1	dBm/10 MHz	10,9
3	dBm/10 MHz	10,9
7	dBm/10 MHz	10,9
8	dBm/10 MHz	7,6
20	dBm/10 MHz	7,6
28	dBm/10 MHz	7,6
38	dBm/20 MHz	10,9
40	dBm/20 MHz	10,9
NOTE: Not applicable for carrier aggregation.		

21.4 Test Procedure:

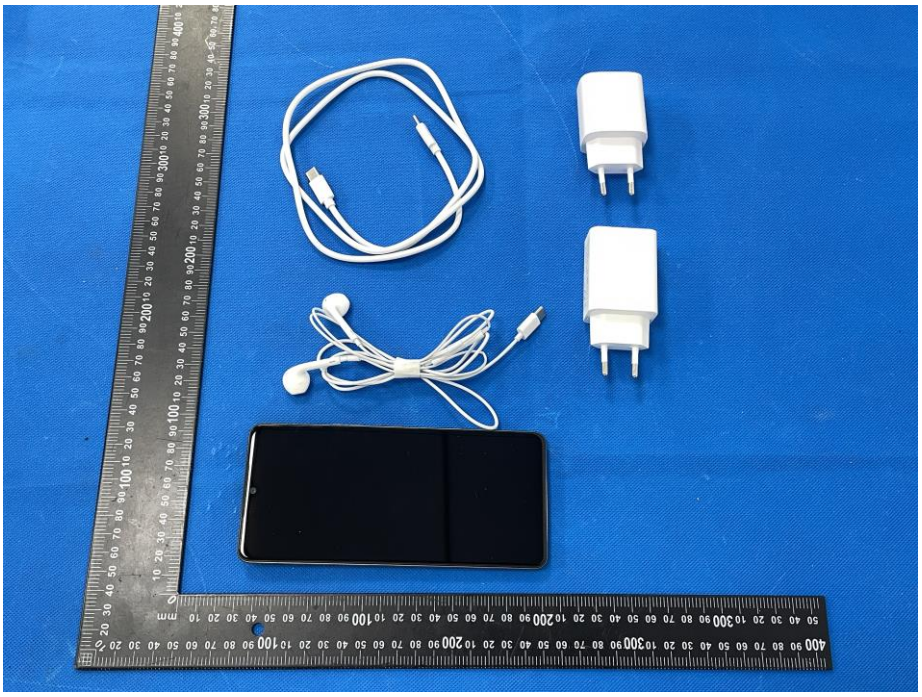
1) Position the UE according to the DUT positioning for speech mode.
2) Power on the UE.
3) Set the initial conditions as per Subclause 6.2.2 of 3GPP TS 36.521-1, with the following exception: set the carrier frequency, channel bandwidth, RB length and RB location as per Table 5.3-1 for FDD mode or TDD mode.
4) Follow Steps 1 and 2 in section 6.2.2.4.2 of 3GPP TS 36.521-1 and ensure that the DUT transmits with its maximum power.
5) For the anechoic chamber based methodologies, measure the spherical effective isotropic radiated power (EIRP) pattern following the sampling grid specified in Subclause 4.4.
For FDD mode: Calculate the TRP using the EIRP pattern data as per Subclause 6.1.5.1.
For TDD mode:
Slots with transient periods are not under test. The uplink downlink configuration and the special subframe configuration in TDD is set as per Table 8.2.2-1 of
3GPP TS 36.521-1. Calculate the TRP using the EIRP pattern data as per Subclause 6.1.6.1
6) Repeat the measurement of the DUT on the left and right ears of the head phantom using the left and right hand phantom for low, mid and high channels.
7) Calculate the average and minimum TRP.

21.5 Test Result

Note: This product does not meet the size required by the standard.

22. EUT Photographs

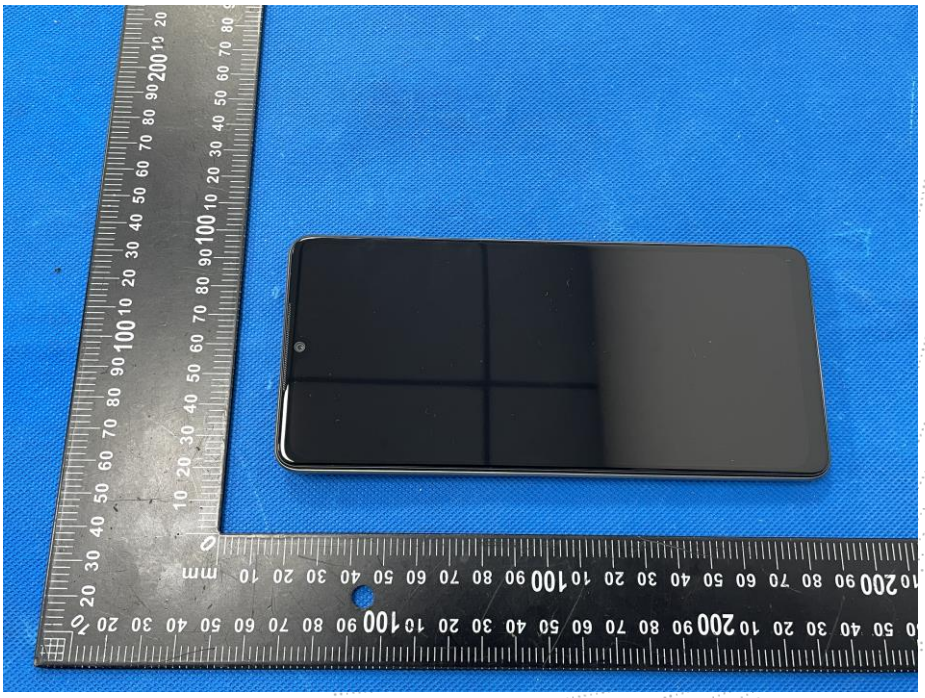
EUT Photo 1



EUT Photo 2

EUT Photo 3

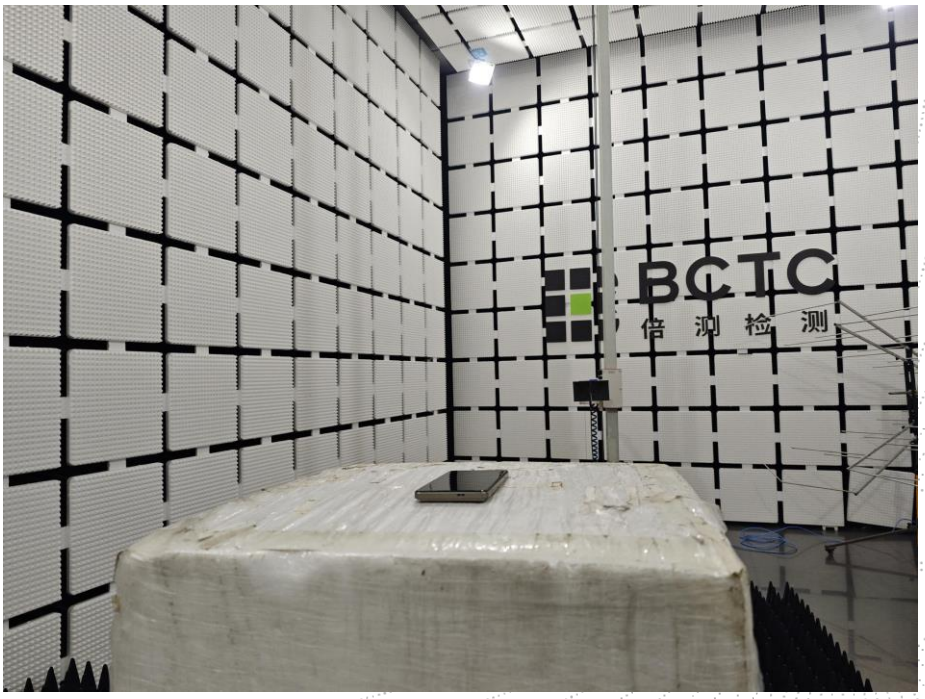
EUT Photo 4



NOTE: Appendix-Photographs Of EUT Constructional Details

23. EUT Test Setup Photographs

Spurious emissions



STATEMENT

1. The equipment lists are traceable to the national reference standards.

2. The test report can not be partially copied unless prior written approval is issued from our lab.

3. The test report is invalid without the "special seal for inspection and testing".

4. The test report is invalid without the signature of the approver.

5. The test process and test result is only related to the Unit Under Test.

6. Sample information is provided by the client and the laboratory is not responsible for its authenticity.

7. The quality system of our laboratory is in accordance with ISO/IEC17025.

8. If there is any objection to this test report, the client should inform issuing laboratory within 15 days from the date of receiving test report.

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