

FCC RF Test Report

Applicant: vivo Mobile Communication Co., Ltd
Product Name: Mobile Phone
Brand Name: vivo
Model Name: V2521
FCC ID: 2AUCY-V2521
Standard: 47 CFR Part 22/24/27/90
Test Date: 08/15/2025 –09/15/2025
Issued Date: 09/15/2025

Approved By:	Reviewed By:	Tested By:
Huanbin Wei	Ye Lin	Xinmao Liu
LAB Manager	Technical Director	Test Engineer

※ ※ Notice ※ ※

1. The laboratory has passed the accreditation by The American Association for Laboratory Accreditation (A2LA). The accreditation number is 7172.01.
2. The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.
3. The test report is invalid if there is any evidence of erasure and/or falsification.
4. The test report is only valid for the test samples.
5. Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.
6. If any question about this report, please contact the laboratory.
7. We evaluated the uncertainty of the relevant test items. The U_{lab} (lab Uncertainty) is less than $U_{CISPR/ETSI}$ (CISPR/ETSI Uncertainty). Test uncertainty is not added to the test results.
8. The Product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
9. N/A: Not required/not applicable.

※ ※ Modified History ※ ※

Rev.	Description	Issued Date	Author	Remark
Rev.1.0	Initial Test Report Release	09/15/2025	Xinmao Liu	-

※ ※ Table of Contents ※ ※

1 General Information.....	5
1.1 Test Standards	5
1.2 Test Location.....	5
1.3 Applicant Information	5
1.4 Manufacturer Information	5
1.5 Description for Equipment under Test (EUT).....	6
1.6 Technical Information	7
2 Test Summary	9
2.1 GSM850/WCDMA B5/LTE B5&26(824-849MHz)	9
2.2 GSM1900/WCDMA B2/LTE B2	10
2.3 WCDMA B4/LTE B4/66/CA_66C	11
2.4 LTE B7/38/41/CA_7C/CA_38C/CA_41C	12
2.5 LTE B12&17 (698-746 MHz).....	13
2.6 LTE B13 (777-787 MHz)	14
2.7 LTE B26 (814-824 MHz)	15
3 General Test Conditions/Configurations	16
3.1 Test Mode	16
3.2 Test Environments	16
3.3 Test Frequencies	17
3.4 Description of Tests	27
3.5 Test Setups	35
3.6 Test Configurations	38
3.7 Test Results for multi-transmitter	39
4 Appendixes for Test Data	40
4.1 Appendix list.....	40
4.2 Appendix Description	40
5 Measurement System Information.....	41
5.1 Conducted Measurement.....	41
5.2 Radiated Measurement.....	41
6 Measurement Uncertainty	43

1 General Information

1.1 Test Standards

Standards	47 CFR Part 22 47 CFR Part 24 47 CFR Part 27 47 CFR Part 90 ANSI C63.26-2015 FCC KDB 971168 D01 Power Meas. License Digital Systems v03
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1.2 Test Location

Name	vivo Mobile Communication Co., Ltd. Testing Center
Address 1	3 / F, Building M1, Zone B, vivo Industrial Park, No.1 vivo Road, Chang'an, Dongguan, Guangdong, China
Address 2	3 / F, Building R5, Zone B, vivo Industrial Park, No.1 vivo Road, Chang'an, Dongguan, Guangdong, China
Phone Number	+86 769 38816888
Accreditation Certificate	The laboratory is a testing organization accredited by FCC as a accredited testing laboratory. The designation number is xxx.

1.3 Applicant Information

Applicant	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

1.4 Manufacturer Information

Manufacturer	vivo Mobile Communication Co., Ltd.
Address	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China

1.5 Description for Equipment under Test (EUT)

EUT Name	Mobile Phone
Brand Name	vivo
Model Name	V2521
FCC ID	2AUCY-V2521
IMEI Code	Conducted : 860105089999193 Radiated : 860105089998815
Hardware version	MP_0.1
Software version	PD2511KF_EX_A_15.0.11.10.W30
Antenna Type	PIFA Antenna
Antenna Gain	GSM850 : -5.5dBi (Ant31) GSM1900 : -1.4dBi (Ant13) ,-1.1dBi (Ant31) UMTS Band II : -1.4dBi (Ant13) ,-1.1dBi (Ant31) UMTS Band IV : -2.1dBi (Ant13) ,-2.2dBi (Ant31) UMTS Band V : -4.5dBi (Ant13) ,-5.5dBi (Ant31) LTE Band 2 : -1.4dBi (Ant13) ,-1.1dBi (Ant31) LTE Band 4 : -3.3dBi (Ant11) ,-2.1dBi (Ant13) ,-2.2dBi (Ant31) LTE Band 5 : -4.5dBi (Ant13) ,-5.5dBi (Ant31) LTE Band 7 : -2.5dBi (Ant11) ,1.6dBi (Ant13) ,2.2dBi (Ant31) LTE Band 12 : -5.3dBi (Ant13) ,-5.8dBi (Ant31) LTE Band 13 : -5.3dBi (Ant13) ,-5.8dBi (Ant31) LTE Band 17 : -5.3dBi (Ant13) ,-5.8dBi (Ant31) LTE Band 26 : -4.5dBi (Ant13) ,-5.5dBi (Ant31) LTE Band 38 : -2.5dBi (Ant11) ,1.6dBi (Ant13) ,2.2dBi (Ant31) LTE Band 41 : -2.5dBi (Ant11) ,1.6dBi (Ant13) ,2.2dBi (Ant31) LTE Band 66 : -3.3dBi (Ant11) ,-2.1dBi (Ant13) ,-2.2dBi (Ant31) LTE CA_7C : -2.5dBi (Ant11) ,1.6dBi (Ant13) ,2.2dBi (Ant31) LTE CA_41C : -2.5dBi (Ant11) ,1.6dBi (Ant13) ,2.2dBi (Ant31) LTE CA_66C : -3.3dBi (Ant11) ,-2.1dBi (Ant13) ,-2.2dBi (Ant31)
Type of Modulation for uplink	GSM: GMSK/8PSK WCDMA : QPSK/16QAM LTE :QPSK/16QAM/64QAM
Remark: As above information is provided and confirmed by the applicant. vivo Lab is not liable to the accuracy, suitability, reliability or/and integrity of the information.	

1.6 Technical Information

Supporting Operating frequency range(s)	Description	
	GSM850	Uplink:824-849MHz, Downlink:869-894MHz
	GSM1900	Uplink:1850-1910MHz, Downlink:1930-1990MHz
	UMTS Band II	Uplink:1850-1910MHz, Downlink:1930-1990MHz
	UMTS Band IV	Uplink:1710-1755MHz, Downlink:2110-2155MHz
	UMTS Band V	Uplink:824-849MHz, Downlink:869-894MHz
	LTE Band 2	Uplink:1850-1910MHz, Downlink:1930-1990MHz
	LTE Band 4	Uplink:1710-1755MHz, Downlink:2110-2155MHz
	LTE Band 5	Uplink:824-849MHz, Downlink:869-894MHz
	LTE Band 7	Uplink:2500-2570MHz, Downlink:2620-2690MHz
	LTE Band 12	Uplink:669-716MHz, Downlink:729-746MHz
	LTE Band 13	Uplink:777-787MHz, Downlink:746-756MHz
	LTE Band 17	Uplink:704-716MHz, Downlink:734-746MHz
	LTE Band 26A	Uplink:814-824MHz, Downlink:859-869MHz
	LTE Band 26B	Uplink:824-849MHz, Downlink:869-894MHz
	LTE Band 38	Uplink:2570-2620MHz, Downlink:2570-2620MHz
	LTE Band 41	Uplink:2496-2690MHz, Downlink:2496-2690MHz
	LTE Band 66	Uplink:1710-1780MHz, Downlink:2110-2200MHz
	LTE UL CA:CA_7C;CA_41C;CA_66C; CA_2A-4A; CA_2A-7A; CA_2A-66A; CA_4A-5A; CA_4A-7A; CA_5A-7A; CA_5A-66A	

Maximum output power
(EIRP/ERP)

Ant31:

GSM850: 24.74dBm

Ant13 :

GSM1900: 28.08dBm

UMTS Band II: 22.23dBm

UMTS Band VI: 22.18dBm

UMTS Band V: 17.40dBm

LTE Band 2: 22.29dBm

LTE Band 4: 21.15dBm

LTE Band 5: 17.26 dBm

LTE Band 7: 24.56 dBm

LTE Band 12: 16.40 dBm

LTE Band 13: 15.84 dBm

LTE Band 17: 16.50 dBm

LTE Band 26A: 17.14 dBm

LTE Band 26B: 17.17 dBm

LTE Band 38: 25.37 dBm

LTE Band 41: 25.23 dBm

LTE Band 66: 21.43 dBm

UL CA_7C: 24.23 dBm

UL CA_41C: 24.8 dBm

UL CA_66C: 21.17 dBm

2 Test Summary

2.1 GSM850/WCDMA B5/LTE B5&26(824-849MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	$ERP \leq 7W$	Pass	-
Peak-Average Ratio	§22.913(d)	Limit ≤ 13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §22.917(a)	≤ -13 dBm/1%EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass	-
Field Strength of Spurious Radiation	§2.1053, §22.917(a)	≤ -13 dBm/100 kHz	Pass	-
Frequency Stability	§2.1055, §22.355	$\leq \pm 2.5$ ppm	Pass	-

2.2 GSM1900/WCDMA B2/LTE B2

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	$EIRP \leq 2W$	Pass	-
Peak-Average Ratio	§24.232(d)	Limit ≤ 13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §24.238(a)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)	≤ -13 dBm/1MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass	-
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	≤ -13 dBm/1 MHz	Pass	-
Frequency Stability	§2.1055, §24.235	Within authorized bands of operation/frequency block.	Pass	-

2.3 WCDMA B4/LTE B4/66/CA_66C

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)	$EIRP \leq 1W$	Pass	-
Peak-Average Ratio	§27.50(d)	Limit $\leq$ 13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §27.53(h)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)	≤ -13 dBm/1MHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass	-
Field Strength of Spurious Radiation	§2.1053, §27.53(h)	≤ -13 dBm/1 MHz	Pass	-
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/frequency block.	Pass	-

2.4 LTE B7/38/41/CA_7C/CA_38C/CA_41C

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)	$EIRP \leq 2W$	Pass	-
Peak-Average Ratio	§27.50(a)	Limit ≤ 13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §27.53(m 4)	For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log (P)$ dB at or below 2490.5 MHz	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)	≤ -25 dBm/1 MHz	Pass	-
Field Strength of Spurious Radiation	§2.1053, §27.53(m)	≤ -25 dBm/1 MHz	Pass	-
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/frequency block	Pass	-

2.5 LTE B12&17 (698-746 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(c)	$ERP \leq 3W$	Pass	-
Peak-Average Ratio	§27.50(c)	Limit $\leq$ 13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §27.53(g)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §27.53(g)	≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass	-
Field Strength of Spurious Radiation	§2.1053, §27.53(g)	≤ -13 dBm/100 kHz	Pass	-
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/frequency block	Pass	-

2.6 LTE B13 (777-787 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(b)	$ERP \leq 3W$	Pass	-
Peak-Average Ratio	§27.50(a)	Limit ≤ 13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §27.53(c)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §27.53(c) §27.53(f)	≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges. On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than $65 + 10 \log(P)$ dB in a 6.25 kHz band segment, for mobile and portable stations;	Pass	-
Field Strength of Spurious Radiation	§2.1051, §27.53(c) §27.53(f)	≤ -13 dBm/100 kHz. For operations in the 746–758 MHz, 775–788 MHz, and 805–806 MHz bands, emissions in the band 1559–1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth.	Pass	-
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/frequency block.	Pass	-

2.7 LTE B26 (814-824 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Remark
Effective (Isotropic) Radiated Power Output Data	§2.1046, §90.635(b)	EIRP < 100W	Pass	-
Peak-Average Ratio	---	Limit≤13 dB	Pass	-
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Pass	-
Band Edges Compliance	§2.1051, §90.691(a)	For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power (P) in watts by at least 116 Log ₁₀ (f/6.1) decibels or 50 + 10 Log ₁₀ (P) decibels or 80 decibels, whichever is the lesser attenuation, where f is the frequency removed from the center of the outer channel in the block in kilohertz and where f is greater than 12.5 kHz.	Pass	-
Spurious Emission at Antenna Terminals	§2.1051, §90.691	≤43 +10Log ₁₀ (P), from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass	-
Field Strength of Spurious Radiation	§2.1053, §90.691	≤43 +10Log ₁₀ (P), from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Pass	-
Frequency Stability	§2.1055, §90.213	≤ ±2.5 ppm	Pass	-

3 General Test Conditions/Configurations

3.1 Test Mode

Test Mode	Test Modes Description
GSM/TM1	GSM system, GSM/GPRS, GMSK modulation
GSM/TM2	GSM system, EDGE, 8PSK modulation
UMTS/TM1	WCDMA system, QPSK modulation
UMTS/TM2	HSDPA system, QPSK modulation
UMTS/TM3	HSUPA system, QPSK modulation
LTE/TM1	LTE system, QPSK modulation
LTE/TM2	LTE system, 16QAM modulation
LTE/TM3	LTE system, 64QAM modulation

Note:The test mode(s) are selected according to relevant radio technology specifications.

3.2 Test Environments

Temperature		15°C ~ 35°C
Relative Humidity		53% to 62%
Atmospheric Pressure		100 kPa to 102 kPa
Voltage	VL	3.7V
	VN	3.91V
	VH	4.4V

Note:

VL=Low Extreme Test Voltage

VN=Normal Voltage

VH=High Extreme Test Voltage

3.3 Test Frequencies

3.3.1 GSM

Band	TX/RX	RF Channel		
		Low(L)	Middle(M)	High(H)
GSM850	TX	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6MHz	848.8MHz
	RX	Channel 128	Channel 190	Channel 251
		869.2MHz	881.6MHz	893.8MHz
GSM1900	TX	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0MHz	1909.8MHz
	RX	Channel 512	Channel 661	Channel 810
		1930.2MHz	1960.0MHz	1989.8MHz

3.3.2 WCDMA

Test Mode	TX/RX	RF Channel		
		Low(L)	Middle(M)	High(H)
WCDMA Band II	TX	Channel 9262	Channel 9400	Channel 9538
		1852.4MHz	1880.0MHz	1907.6MHz
	RX	Channel 9662	Channel 9800	Channel 9938
		1932.4MHz	1960.0MHz	1987.6MHz
WCDMA Band IV	TX	Channel 1312	Channel 1413	Channel 1513
		1712.4MHz	1732.6MHz	1752.6MHz
	RX	Channel 1537	Channel 1638	Channel 1738
		2112.4MHz	2132.6MHz	2152.6MHz
WCDMA Band V	TX	Channel 4132	Channel 4182	Channel 4233
		826.4MHz	836.4MHz	846.6MHz
	RX	Channel 4357	Channel 4407	Channel 4458
		871.4MHz	881.4MHz	891.6MHz

3.3.3 LTE

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B2	Low Range	1.4	18607	1850.7	607	1930.7
		3	18615	1851.5	615	1931.5
		5	18625	1852.5	625	1932.5
		10	18650	1855	650	1935
		15	18675	1857.5	675	1937.5
		20	18700	1860	700	1940
	Mid Ranges	1.4/3/5/10/15/20	18900	1880	900	1960
	High Range	1.4	19193	1909.3	1193	1989.3
		3	19185	1908.5	1185	1988.5
		5	19175	1907.5	1175	1987.5
		10	19150	1905	1150	1985
		15	19125	1902.5	1125	1982.5
		20	19100	1900	1100	1980

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B4	Low Range	1.4	19957	1710.7	1957	2110.7
		3	19965	1711.5	1965	2111.5
		5	19975	1712.5	1975	2112.5
		10	20000	1715	2000	2115
		15	20025	1717.5	2025	2117.5
		20	20050	1720	2050	2120
	Mid Ranges	1.4/3/5/10/15/20	20175	1732.5	2175	2132.5
	High Range	1.4	20393	1754.3	2393	2154.3
		3	20385	1753.5	2385	2153.5
		5	20375	1752.5	2375	2152.5
		10	20350	1750	2350	2150
		15	20325	1747.5	2325	2147.5
		20	20300	1745	2300	2145

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B5	Low Range	1.4	20407	824.7	2407	869.7
		3	20415	825.5	2415	870.5
		5	20425	826.5	2425	871.5
		10	20450	829	2450	874
	Mid Ranges	1.4/3/5/10	20525	836.5	2525	881.5
	High Range	1.4	20643	848.3	2643	893.3
		3	20635	847.5	2635	892.5
		5	20625	846.5	2625	891.5
		10	20600	844	2600	889

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B7	Low Range	5	20775	2502.5	2775	2622.5
		10	20800	2505	2800	2625
		15	20825	2507.5	2825	2627.5
		20 [1]	20850	2510	2850	2630
	Mid Ranges	5/10/15/20	21100	2535	3100	2655
	High Range	5	21425	2567.5	3425	2687.5
		10	21400	2565	3400	2685
		15	21375	2562.5	3375	2682.5
		20	21350	2560	3350	2680

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B12	Low Range	1.4	23017	699.7	5017	729.7
		3	23025	700.5	5025	730.5
		5	23035	701.5	5035	731.5
		10	23060	704	5060	734
	Mid Ranges	1.4/3/5/10	23095	707.5	5095	737.5
	High Range	1.4	23173	715.3	5173	745.3
		3	23165	714.5	5165	744.5
		5	23155	713.5	5155	743.5
		10	23130	711	5130	741

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B13	Low Range	5	23205	779.5	5205	748.5
		10	23230	782	5230	751
	Mid Ranges	5/10	23230	782	5230	751
	High Range	5	23255	784.5	5255	753.5
		10	23230	782	5230	751

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B17	Low Range	5	23755	706.5	5755	736.5
		10	23780	709	5780	739
	Mid Ranges	5/10	23790	710	5790	740
	High Range	5	23825	713.5	5825	743.5
		10	23800	711	5800	741

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B26 (814-824)	Low Range	1.4	26697	814.7	8697	859.7
		3	26705	815.5	8705	860.5
		5	26715	816.5	8715	861.5
		10	26740	819	8740	864
	Mid Ranges	1.4/3/5/10	26740	819	8740	864
	High Range	1.4	26783	823.6	8783	868.3
		3	26775	822.5	8775	867.5
		5	26765	821.5	8755	866.5
		10	26740	819	8740	864

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B26 (824-849)	Low Range	1.4	26797	824.7	8797	869.7
		3	26805	825.5	8805	870.5
		5	26815	826.5	8815	871.5
		10	26840	829	8840	874
		15	26865	831.5	8865	876.5
	Mid Ranges	1.4/3/5/10/15	26915	836.5	8915	881.5
	High Range	1.4	27033	848.3	9033	893.3
		3	27025	847.5	9025	892.5
		5	27015	846.5	9015	891.5
		10	26990	844	8990	889
		15	26965	841.5	8965	886.5

Band	Test Frequency	Bandwidth (MHz)	NUL	Frequency of Uplink [MHz]	NDL	Frequency of Downlink [MHz]
LTE B66	Low Range	1.4	131979	1710.7	66443	2110.7
		3	131987	1711.5	66451	2111.5
		5	131997	1712.5	66461	2112.5
		10	132022	1715	66486	2115
		15	132047	1717.5	66511	2117.5
		20	132072	1720	66536	2120
	Mid Ranges	1.4/3/5/10/15/20	132322	1745	66786	2145
	High Range	1.4	132665	1779.3	67329	2199.3
		3	132657	1778.5	67321	2198.5
		5	132647	1777.5	67311	2197.5
		10	132622	1775	67286	2195
		15	132597	1772.5	67261	2192.5
		20	132572	1770	67236	2190

Band	Test Frequency	Bandwidth (MHz)	EARFCN	Frequency (MHz)
LTE B38	Low Range	5	37775	2572.5
		10	37800	2575
		15	37825	2577.5
		20	37850	2580
	Mid Ranges	5/10/15/20	38000	2595
	High Range	5	38225	2617.5
		10	38200	2615
		15	38175	2612.5
		20	38150	2610

Band	Test Frequency	Bandwidth (MHz)	EARFCN	Frequency (MHz)
LTE B41	Low Range	5	39675	2498.5
		10	39700	2501
		15	39725	2503.5
		20	39750	2506
	Mid Ranges	5/10/15/20	40620	2593
	High Range	5	41565	2687.5
		10	41540	2685
		15	41515	2682.5
		20	41490	2680

3.3.4 LTE intra-band contiguous Carrier Aggregation (DL CA and UL CA)

CA_7C											
Range	CC-Combo /NRB_agg [RB]	CC1(not1)					CC2(not1)				
		BW [RB]	NUL	fUL [MHz]	NDL	fDL [MHz]	BW [RB]	NUL	fUL [MHz]	NDL	fDL [MHz]
Low	50+100	50	20805	2505.5	2805	2625.5	100	20949	2519.9	2949	2639.9
		100	20850	2510	2850	2630	50	20994	2524.4	2994	2644.4
	75+50	75	20825	2507.5	2825	2627.5	50	20945	2519.5	2945	2639.5
	75+75	75	20825	2507.5	2825	2627.5	75	20975	2522.5	2975	2642.5
	75+100	75	20828	2507.8	2828	2627.8	100	20999	2524.9	2999	2644.9
		100	20850	2510	2850	2630	75	21021	2527.1	3021	2647.1
	100+100	100	20850	2510	2850	2630	100	21048	2529.8	3048	2649.8
Mid	50+100	50	21006	2525.6	3006	2645.6	100	21150	2540	3150	2660
		100	21051	2530.1	3051	2650.1	50	21195	2544.5	3195	2664.5
	75+50	75	21051	2530.1	3051	2650.1	50	21171	2542.1	3171	2662.1
	75+75	75	21025	2527.5	3025	2647.5	75	21175	2542.5	3175	2662.5
	75+100	75	21003	2525.3	3003	2645.3	100	21174	2542.4	3174	2662.4
		100	21026	2527.6	3026	2647.6	75	21197	2544.7	3197	2664.7
	100+100	100	21001	2525.1	3001	2645.1	100	21199	2544.9	3199	2664.9
High	50+100	50	21206	2545.6	3206	2665.6	100	21350	2560	3350	2680
		100	21251	2550.1	3251	2670.1	50	21395	2564.5	3395	2684.5
	75+50	75	21277	2552.7	3277	2672.7	50	21397	2564.7	3397	2684.7
	75+75	75	21225	2547.5	3225	2667.5	75	21375	2562.5	3375	2682.5
	75+100	75	21179	2542.9	3179	2662.9	100	21350	2560	3350	2680
		100	21201	2545.1	3201	2665.1	75	21372	2562.2	3372	2682.2
	100+100	100	21152	2540.2	3152	2660.2	100	21350	2560	3350	2680

CA_66C											
Range	CC-Combo /NRB_agg [RB]	CC1(not1)					CC2(not1)				
		BW [RB]	NUL	fUL [MHz]	NDL	fDL [MHz]	BW [RB]	NUL	fUL [MHz]	NDL	fDL [MHz]
Low	50+75	50	132025	1715.3	66489	2115.3	75	132145	1727.3	66609	2127.3
		75	132047	1717.5	66511	2117.5	50	132167	1729.5	66631	2129.5
	50+100	50	132027	1715.5	66491	2115.5	100	132171	1729.9	66635	2129.9

		100	132072	1720	66536	2120	50	132216	1734.4	66680	2134.4
	75+75	75	132047	1717.5	66511	2117.5	75	132197	1732.5	66661	2132.5
	75+100	75	132050	1717.8	66514	2117.8	100	132221	1734.9	66685	2134.9
		100	132072	1720	66536	2120	75	132243	1737.1	66707	2137.1
	100+25	100	132072	1720	66536	2120	25	132189	1731.7	66653	2131.7
		25	132005	1713.3	66469	2113.3	100	132122	1725	66586	2125
	100+100	100	132072	1720	66536	2120	100	132270	1739.8	66734	2139.8
Mid	50+75	50	132351	1747.9	66815	2147.9	75	132471	1759.9	66935	2159.9
		75	132373	1750.1	66837	2150.1	50	132493	1762.1	66957	2162.1
	50+100	50	132328	1745.6	66792	2145.6	100	132472	1760	66936	2160
		100	132373	1750.1	66837	2150.1	50	132517	1764.5	66981	2164.5
	75+75	75	132347	1747.5	66811	2147.5	75	132497	1762.5	66961	2162.5
	75+100	75	132325	1745.3	66789	2145.3	100	132496	1762.4	66960	2162.4
		100	132348	1747.6	66812	2147.6	75	132519	1764.7	66983	2164.7
	100+25	100	132397	1752.5	66861	2152.5	25	132514	1764.2	66978	2164.2
		25	132330	1745.8	66794	2145.8	100	132447	1757.5	66911	2157.5
	100+100	100	132323	1745.1	66787	2145.1	100	132521	1764.9	66985	2164.9
High	50+75	50	132477	1760.5	66941	2160.5	75	132597	1772.5	67061	2172.5
		75	132499	1762.7	66963	2162.7	50	132619	1774.7	67083	2174.7
	50+100	50	132428	1755.6	66892	2155.6	100	132572	1770	67036	2170
		100	132473	1760.1	66937	2160.1	50	132617	1774.5	67081	2174.5
	75+75	75	132447	1757.5	66911	2157.5	75	132597	1772.5	67061	2172.5
	75+100	75	132401	1752.9	66885	2152.9	100	132572	1770	67036	2170
		100	132423	1755.1	66887	2155.1	75	132594	1772.2	67058	2172.2
	100+25	100	132522	1765	66986	2165	25	132639	1776.7	67103	2176.7
		25	132455	1758.3	66919	2158.3	100	132572	1770	67036	2170
	100+100	100	132374	1750.2	66838	2150.2	100	132572	1770	67036	2170

Band	Range	CC- Combo /NRB_agg [RB]	CC1 Note1			CC2 Note1		
			BW [RB]	NUL/DL	fUL/DL[MHz]	BW [RB]	NUL/DL	fUL/DL[MHz]
CA_41C	Low	25+100	25	39683	2499.3	100	39800	2511
			100	39750	2506	25	39867	2517.7
		50+75	50	39703	2501.3	75	39823	2513.3
			75	39725	2503.5	50	39845	2515.5
		50+100	50	39705	2501.5	100	39849	2515.9
			100	39750	2506	50	39894	2520.4

		75+75	75	39725	2503.5	75	39875	2518.5
		75+100	75	39728	2503.8	100	39899	2520.9
			100	39750	2506	75	39921	2523.1
		100+100	100	39750	2506	100	39948	2525.8
	Mid	25+100	25	40528	2583.8	100	40645	2595.5
			100	40595	2590.5	25	40712	2602.2
		50+75	50	40549	2585.9	75	40669	2597.9
			75	40571	2588.1	50	40691	2600.1
		50+100	50	40526	2583.6	100	40670	2598
			100	40571	2588.1	50	40715	2602.5
		75+75	75	40545	2585.5	75	40695	2600.5
		75+100	75	40523	2583.3	100	40694	2600.4
			100	40546	2585.6	75	40717	2602.7
		100+100	100	40521	2583.1	100	40719	2602.9
	High	25+100	25	41373	2668.3	100	41490	2680
			100	41440	2675	25	41557	2686.7
		50+75	50	41395	2670.5	75	41515	2682.5
			75	41417	2672.7	50	41537	2684.7
		50+100	50	41346	2665.6	100	41490	2680
			100	41391	2670.1	50	41535	2684.5
		75+75	75	41365	2667.5	75	41515	2682.5
		75+100	75	41319	2662.9	100	41490	2680
			100	41341	2665.1	75	41512	2682.2
		100+100	100	41292	2660.2	100	41490	2680

3.4 Description of Tests

3.4.1 Effective (Isotropic) Radiated Power Output Data

RF output power limits are specified in terms of the ERP or the EIRP. Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are defined as the product of the power supplied to the antenna and its gain (relative to a dipole antenna in the case of ERP, and relative to an isotropic antenna in the case of EIRP); however, when working in decibels (i.e., logarithmic scale), the ERP and EIRP represent the sum of the transmit antenna gain (in dBd or dBi, respectively) and the conducted RF output power (expressed in dB relative to watts or milliwatts).

Test Procedures

According to KDB 971168 D01 Section 5 and ANSI C63.26 Section 5.2

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation as follows:

$$\text{ERP (dBm)} = \text{Conducted (dBm)} + \text{antenna gain (dBd)}$$

$$\text{EIRP (dBm)} = \text{Conducted (dBm)} + \text{antenna gain (dBi)}$$

$$\text{EIRP} = \text{ERP} + 2.15, \text{ where ERP and EIRP are expressed in consistent units}$$

Note: Reference test setup 1

3.4.2 Peak-Average Ratio

Peak-to-average ratio measurement is performed at the conducted port of the EUT. The inherent randomness of the power peaks in a noise-like signal and the wide bandwidths associated with modern technologies makes it difficult to quantify the peak power using traditional measurement techniques. Because the peak power of a noise-like signal is predictable only on a statistical basis, a statistical measurement of the peak power is preferred. CCDF curves provide a means for characterizing the power peaks of a noise-like signal on a statistical basis. A CCDF curve depicts the probability of the peak signal amplitude exceeding the average power level.

Test Procedures

According to KDB 971168 D01 v03-Section 5.7.2 and ANSI C63.26 Section 5.2.3.4

- 1) The spectrum analyzer center frequency is set to the EUT channel center frequency.
- 2) Set resolution/measurement bandwidth $\geq$ OBW or specified reference bandwidth.
- 3) Set the number of counts to a value that stabilizes the measured CCDF curve.
- 4) Set the measurement interval as follows:
 - a) For continuous transmissions, set to the greater of $[10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})]$ or 1ms.
 - b) For burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize. Set the measurement interval to a time that is less than or equal to the burst duration.
 - c) If there are several carriers in a single antenna port, the peak power shall be determined for each individual carrier (by disabling the other carriers while measuring the required carrier) and the total peak power calculated from the sum of the individual carrier peak powers.
- 5) Record the maximum PAPR level associated with a probability of 0.1%.

Note: Reference test setup 3

3.4.3 Occupied Bandwidth

The Occupied Bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers are each equal to 0.5% of the total mean power of the given emission.

The 26 dB BW is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated by at least 26 dB below the transmitter power.

Test Procedures

According to KDB 971168 D01 v03-Section 4.3 and ANSI C63.26 Section 5.4

- 1) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (typically a span of $1.5 \times \text{OBW}$ is sufficient).
- 2) The nominal RBW shall be in the range of 1% to 5% of the anticipated OBW, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- 3) Set the reference level of the instrument as required to prevent the signal amplitude from exceeding.
- 4) Set the detection mode to peak, and the trace mode to max-hold.
- 5) Determine the reference value by either of the following:
 - a) Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).
 - b) Set the EUT to transmit an unmodulated carrier. Set the spectrum analyzer marker to the level of the carrier.
- 6) Determine the “-26 dB amplitude” as equal to (Reference Value - X).
- 7) Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “-X dB amplitude” determined in step f). If a marker is below this “-X dB amplitude” value it should be as close as possible to this value. The OBW is the positive frequency difference between the two markers.
- 8) Test the Power bandwidth (99%) use the instrument 99% OBW function.

Note: Reference test setup 3

3.4.4 Band Edges Compliance

The limits for emissions close to the authorized channel, band, or block, often referred to as out-of-band emissions or band-edge emissions, may be specified in terms of a reference bandwidth and/or an emission limit that varies with the frequency offset from the edge of the channel, band, or block. However, in the 1megahertz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

Test Procedures

KDB 971168 D01 v03-Section 6 and ANSI C63.26 Section 5.7

- 1) Set the spectrum analyzer center frequency to the block, band, or channel edge frequency.
- 2) Set the span wide enough to capture the fundamental emission closest to the authorized block or band edge, and to include all modulation products that spill into the immediately adjacent frequency band
- 3) The nominal RBW shall be set $\geq 1\%$ the emission bandwidth, and the VBW shall be set $\geq 3 \times \text{RBW}$.
- 4) Set the detection mode to RMS, and the trace mode to max-hold.
- 5) Set the number of points in sweep $\geq 2 \times \text{span} / \text{RBW}$.
- 6) Compare the results with the corresponding limit in the applicable regulation.
- 7) The test report shall include the data plots of the measuring instrument display and the measured data.

Note: Reference test setup 3

3.4.5 Spurious and Harmonic Emissions at Antenna Terminal

Normally, the applicable rule part specifies the reference bandwidth for measuring unwanted emission levels. Typically, 100 kHz if the authorized frequency band/block is at or below 1 GHz and 1 MHz if the authorized frequency band/block is above 1 GHz.

Test Procedures

KDB 971168 D01 v03-Section 6 and ANSI C63.26 Section 5.7

- 1) Set the spectrum start frequency to the 9 kHz, and Stop frequency set the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.
- 2) Set the number of points in sweep $\geq 2 \times (\text{span} / \text{RBW})$
- 3) Set the detection mode to rms, and the trace mode to max-hold.
- 5) Identify and measure the highest spurious emission levels in each frequency range. It is not necessary to re-measure the out-of-band emissions as a part of this test. Record the frequencies and amplitudes corresponding to the measured emissions and capture the data plots.
- 6) Compare the results with the corresponding limit in the applicable regulation.
- 7) The test report shall include the data plots of the measuring instrument display and the measured data.

Note: Reference test setup 3

3.4.6 Field Strength of Spurious Radiation

Using the test configuration shown in Figure 6 below, we measure the radiated emissions directly from the EUT and convert the measured field strength or received power to ERP or EIRP, as required, for comparison to the applicable limits. As stated in 5.5.1 of ANSI C63.26-2015, the field strength measurement method using a test site validated to the requirements of ANSI C63.4 is an alternative to the substitution measurement method.

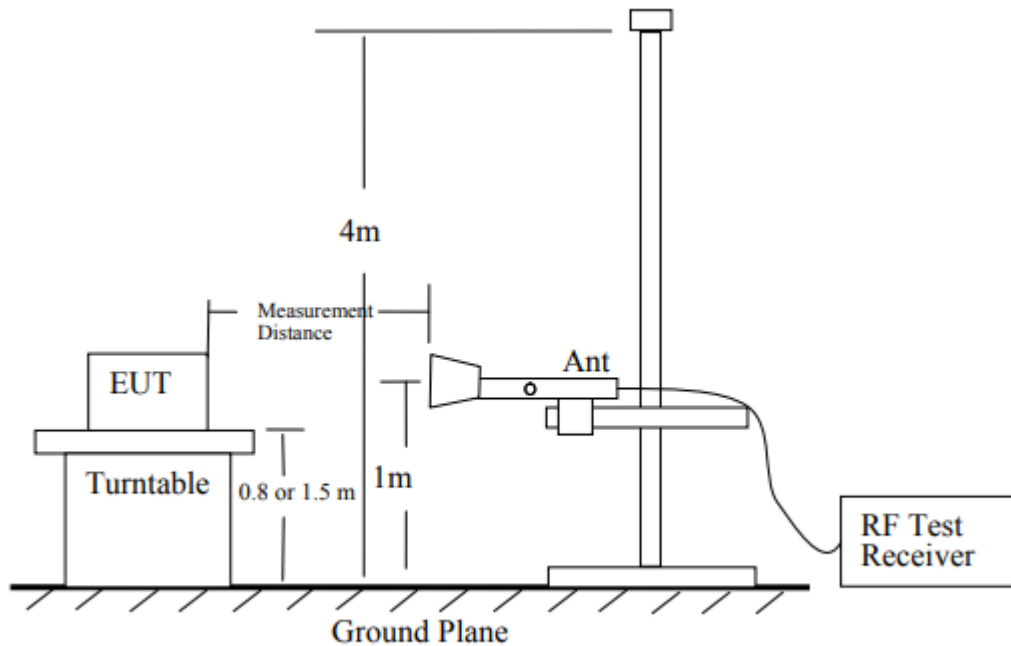


Figure 6—Test site-up for radiated ERP and/or EIRP measurements

Test Procedures

For below 1GHz, the EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 or 10 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation.

For above 1GHz, the EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation

(Distance from antenna to EUT is 2.4m for measurements >18GHz).

The EUT was set 3 or 10 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.

The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

Exploratory test the EUT in the lowest channel, the middle channel ,the Highest channel.

The radiation measurements are performed in X、Y、Z axis of EUT, and the worst orientation is reported.

The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

Radiated spurious emissions were investigated from 9kHz to 30MHz, There were no emissions found with less than 20dB of margin from 9kHz to 30MHz.

Radiated Power Measurement Calculation According to ANSI C63.26-2015

a) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$

b) $E \text{ (dB}\mu\text{V/m)} = \text{Measured amplitude level (dBm)} + 107 + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}.$

c) $E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20\log(D) + 104.8;$ where D is the measurement distance (in the far field region) in m.

d) $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 20\log(D) - 104.8;$ where D is the measurement distance (in the far field region) in m.

So, from d) The measuring distance is usually at 3m, then $20*\log(3)=9.5424$ Then, $\text{EIRP (dBm)} = E \text{ (dB}\mu\text{V/m)} + 9.5424 - 104.8 = E \text{ (dB}\mu\text{V/m)} - 95.2576$

Note: Reference test setup 4

3.4.7 Frequency Stability

Frequency stability testing is performed in accordance with the guidelines of KDB 971168 D01 v03-Section 9 and ANSI C63.26 Section 5.6.

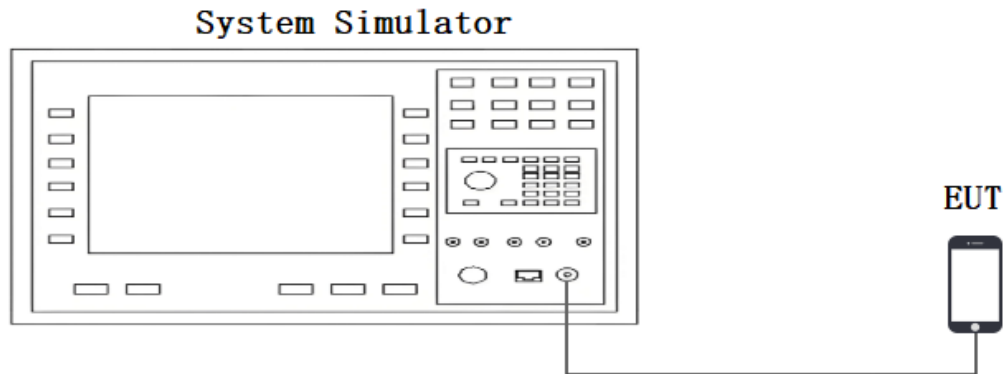
The frequency stability of the transmitter is measured by:

- a) At 10 °C intervals of temperatures between –30 °C and +50 °C at the manufacturer's rated supply voltage
- b) At +20 °C temperature and $\pm 15\%$ supply voltage variations. If a product is specified to operate over a range of input-voltage then the –15% variation is applied to the lowermost voltage and the +15% is applied to the uppermost voltage. For handheld equipment that is only capable of operating from internal batteries and the supply voltage cannot be varied, the frequency stability tests shall be performed at the nominal battery voltage and the battery end point voltage specified by the manufacturer.

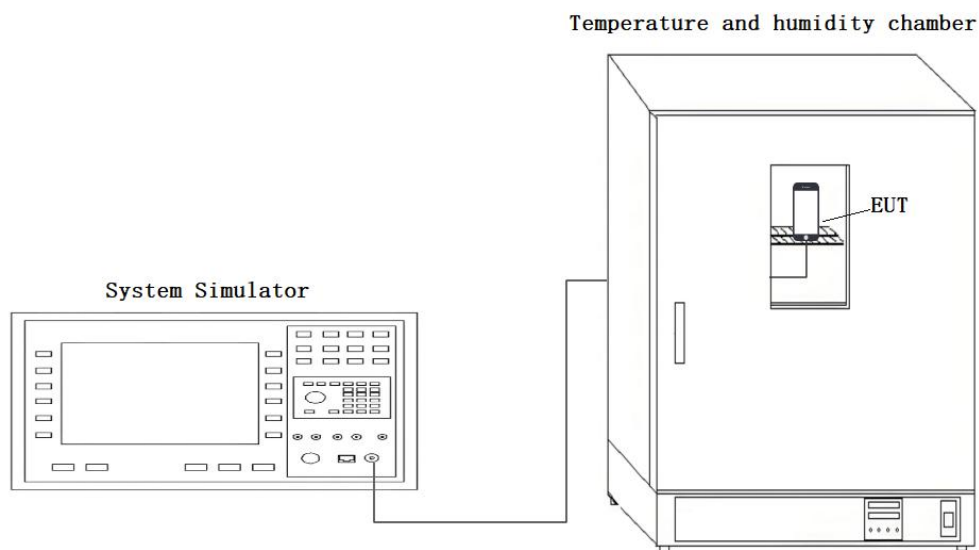
Note: Reference test setup 2

3.5 Test Setups

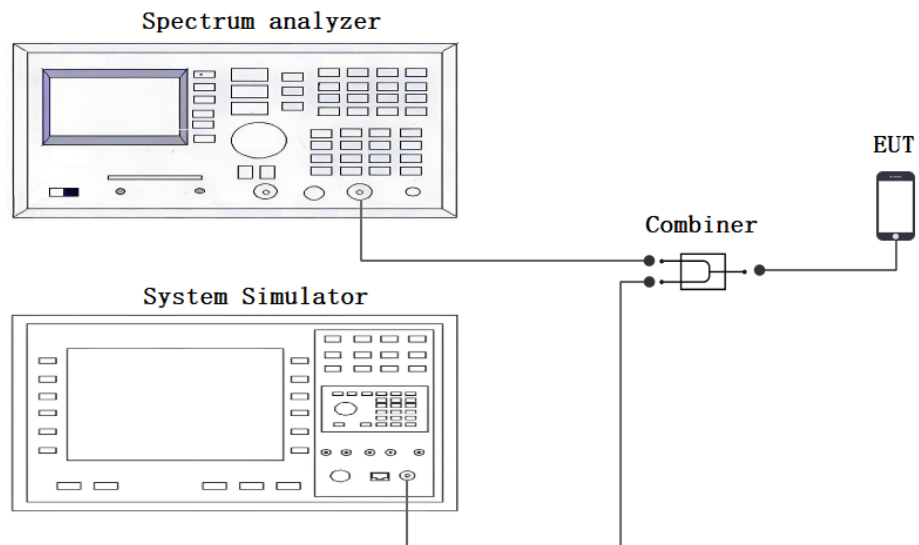
3.5.1 Test Setup 1



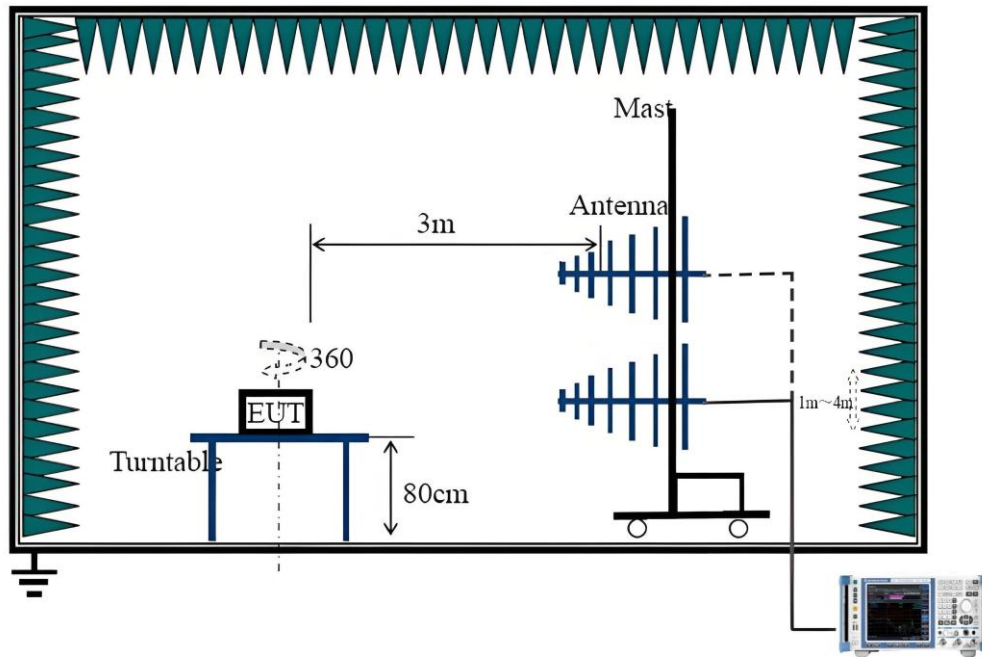
3.5.2 Test Setup 2



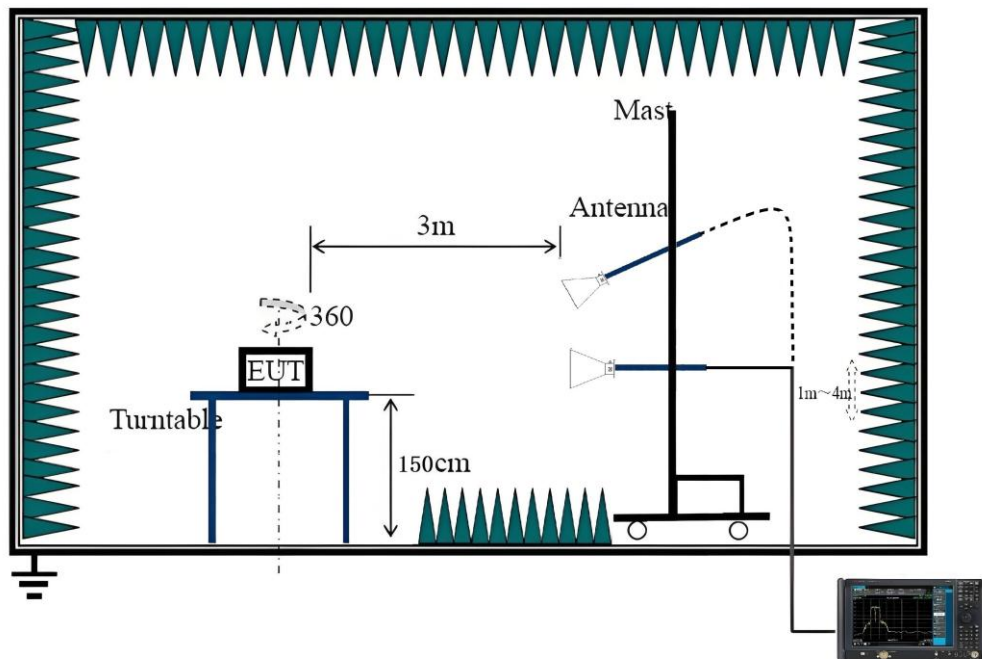
3.5.3 Test Setup 3



3.5.4 Test Setup 4



(30 MHz-1 GHz)



(Above 1 GHz)

3.6 Test Configurations

Test Item	Test Conditions	
Effective (Isotropic) Radiated Power Output Data	Test Environment	Ambient Climate & Rated Voltage
	Test Channel	L, M, H
	Test Setup	Test setup 1
	Test Mode	GSM/TM1, GSM/TM2,UMTS/TM1,LTE/TM1, LTE/TM2, LTE/TM3
Peak-to-Average Ratio	Test Environment	Ambient Climate & Rated Voltage
	Test Channel	L, M, H
	Test Setup	Test setup 3
	Test Mode	GSM/TM1, GSM/TM2,UMTS/TM1,LTE/TM1, LTE/TM2, LTE/TM3
Bandwidth	Test Environment	Ambient Climate & Rated Voltage
	Test Channel	L, M, H
	Test Setup	Lowest, 5 MHz, 10 MHz, Highest
	Test Mode	GSM/TM1, GSM/TM2,UMTS/TM1,LTE/TM1, LTE/TM2, LTE/TM3
Band Edges Compliance	Test Environment	Ambient Climate & Rated Voltage
	Test Channel	L, H
	Test Setup	Test setup 3
	Test Mode	GSM/TM1, GSM/TM2,UMTS/TM1,LTE/TM1, LTE/TM2, LTE/TM3
Spurious Emission at Antenna Terminals	Test Environment	Ambient Climate & Rated Voltage
	Test Channel	L, M, H
	Test Setup	Test setup 3
	Test Mode	GSM/TM1, GSM/TM2,UMTS/TM1,LTE/TM1
Field Strength of Spurious Radiation	Test Environment	Ambient Climate & Rated Voltage
	Test Channel	L, M, H
	Test Setup	Test setup 4
	Test Mode	GSM/TM1,UMTS/TM1,LTE/TM1 Remark: The pre-tests cover all operation mode of EUT, only the worst results are reflected in the report.
Frequency Stability	Test Environment	(1) -30 °C to +50 °C with step 10 °C at Rated Voltage; (2) VL, VN and VH of Rated Voltage at Ambient Climate.
	Test Channel	L, M, H
	Test Setup	Test setup 2
	Test Mode	GSM/TM1, GSM/TM2,UMTS/TM1,LTE/TM1 The report only show the bandwidth with the worst case.

3.7 Test Results for multi-transmitter

The radiated spurious emissions were performed with single transmitter operation.

According to REDCA Technical Guidance Note 31 requirements, the simultaneous transmission of multi-transmitter was evaluated (NR_SA/NSA with Bluetooth, NR_SA/NSA with Wi-Fi and NR_SA/NSA with Bluetooth and Wi-Fi) and tested. only the worse-case data is showed in the following table.

License bands	Unlicensed bands	Test Data	Result
GSM850	802.11A-CH1	Appendix F of Radiated Spurious Emissions	Pass
LTE B2	802.11A-CH36	Appendix F of Radiated Spurious Emissions	Pass

4 Appendixes for Test Data

The detailed test records refer to the appendix documents.

4.1 Appendix list

Appendix No.	Description
R2508150011-RF05-A	Appendix for GSM850
R2508150011-RF05-B	Appendix for GSM1900
R2508150011-RF05-C	Appendix for WCDMA B2
R2508150011-RF05-D	Appendix for WCDMA B4
R2508150011-RF05-E	Appendix for WCDMA B5
R2508150011-RF05-F	Appendix for LTE B2
R2508150011-RF05-G	Appendix for LTE B4
R2508150011-RF05-H	Appendix for LTE B5
R2508150011-RF05-I	Appendix for LTE B7
R2508150011-RF05-J	Appendix for LTE B12
R2508150011-RF05-K	Appendix for LTE B13
R2508150011-RF05-L	Appendix for LTE B17
R2508150011-RF05-M	Appendix for LTE B26(814-824)
R2508150011-RF05-N	Appendix for LTE B26(824-849)
R2508150011-RF05-O	Appendix for LTE B38
R2508150011-RF05-P	Appendix for LTE B41
R2508150011-RF05-Q	Appendix for LTE B66
R2508150011-RF05-R	Appendix for LTE CA_7C
R2508150011-RF05-S	Appendix for LTE CA_41C
R2508150011-RF05-T	Appendix for LTE CA_66C

4.2 Appendix Description

Appendix	Description
Appendix A	Effective (Isotropic) Radiated Power Output Data
Appendix B	Peak-Average Ratio
Appendix C	Bandwidth
Appendix D	Band Edges Compliance
Appendix E	Spurious Emission at Antenna Terminals
Appendix F	Field Strength of Spurious Radiation
Appendix G	Frequency Stability

Note: The data presented is the worst antenna mode;

5 Measurement System Information

5.1 Conducted Measurement

Manufacturer	Device	Type	Serial number	Last calib	Valid period
Anritsu	Wideband radio communication tester	MT8821C	6202136016	08/11/2025	One year
R&S	Signal & Spectrum Analyzer	FSV3030	101862	03/22/2025	One year
R&S	Signal & Spectrum Analyzer	FSW26	104603	03/21/2025	One year
KEITHLEY	DC Power Supply	2303	0906159	03/17/2025	One year
GWS	Temprature Chamber	MW3040	22114056	03/15/2025	One year

5.2 Radiated Measurement

Manufacturer	Device	Type	Serial number	Last calib	Valid period
Keysight	Spectrum analyzer	N9010B 10HZ-40GHZ	MY60241172	03/21/2025	One year
Keysight	Spectrum analyzer	N9010B 10HZ- 26.5GHZ	MY60241106	03/22/2025	One year
Keysight	Spectrum analyzer	N9010B 10HZ-40GHZ	MY60241176	03/21/2025	One year
ETS	LOOP Antennas	6502	00239900	09/01/2024	Two years
ETS	Hybrid antenna (30MHz-3GHz)	3142E	00238743	09/05/2024	Two years
ETS	Horn antenna(1GHz- 18GHz)	3117	00240144	09/08/2024	Two years
ETS	Pyramidal Horn Antenna(18Hz-40GHz)	3116C-PA	00239875	09/01/2024	Two years
SCHWARZBEC K	Preamplifier(10MHz- 6GHz)	BBV 9743B	00319	03/27/2025	One year

ETS	Preamplifier(1GHz-18GHz)	TTLA0118G48 AC	201756002	03/27/2025	One year
ETS	Preamplifier(18GHz-40GHz)	3116C-PA	00263013	08/23/2024	One year
ETS	Preamplifier(18GHz-40GHz)	3116C-PA	00263013	08/20/2025	One year
HUATO	Temperature and humidity meter	A2000-EX	H2000GA793	08/14/2025	One year
ETS	Test software	7.5.5.12	NCR	NCR	NCR
Anritsu	Universal Radio Communication Tester	MT8820C/23.0 8S #001	6201564049	03/27/2025	One year
Note 1: NCR = No-Calibration Requirement.					

6 Measurement Uncertainty

For a 95% confidence level ($k = 2$), the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 as following:

Item	Measurement Uncertainty
Transmit Output Power Data	0.71dB
Occupied Bandwidth	0.40%
Band Edge	1.84dB
Spurious Emissions, Conducted	2.40dB
Field Strength of Spurious Radiation	30MHz -1000MHz: 5.04dB 1GHz -18GHz: 4.48dB 18GHz - 40GHz: 4.34dB
Frequency Stability	0.03ppm

The End of Report