

Report No.: SAR/2021/5000401

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FCC TEST REPORT

Application No.: AR/2021/50004

Applicant: Xiaomi Communications Co., Ltd.

Address of Applicant #019, 9th Floor, Building 6, 33 Xi'ergi Middle Road, Haidian District, Beijing, China,

100085

Manufacturer: Xiaomi Communications Co., Ltd.

Address of Manufacturer #019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China,

100085

EUT Description: Mobile Phone Model No.: 21081111RG Trade Mark: **XIAOMI** FCC ID: 2AFZZ11RG Standards: 47 CFR Part 2

> 47 CFR Part 22 subpart H 47 CFR Part 24 subpart E 47 CFR Part 27 subpart C 47 CFR Part 90 subpart S

Date of Receipt: 2021/6/10

Date of Test: 2021/6/10 to 2021/7/27

Date of Issue: 2021/7/27 Test Result: PASS *

Authorized Signature:

Derek Yang Wireless Laboratory Manager

Derde yang



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In the configuration tested, the EUT detailed in this report complied with the standards specified above.



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1 Version

Revision Record							
Version	Chapter	Date	Modifier	Remark			
01		2021-07-27		Original			

Authorized for issue by:	
Prepared By	Dee.Zheng
	(Dee Zheng) / Engineer
Checked By	Jun Hong
	(Jim Huang) / Reviewer





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Test Summary 2

2.1 GSM850/UMTS Band 5 & LTE Band 5 / 26(824~849 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*	
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913	FCC: ERP ≤ 7 W	Section 1 of Appendix B	Pass	А	
Peak-Average Ratio		Limit≤13 dB	Section 2 of Appendix B	Pass	А	
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А	
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А	
Band Edges Compliance	§2.1051, §22.917	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass	А	
Spurious Emission at Antenna Terminals	§2.1051, §22.917	FCC: ≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B	Pass	А	
Field Strength of Spurious Radiation	§2.1053, §22.917	FCC: ≤ -13 dBm/100 kHz.	Section 7 of Appendix B	Pass	В	
Frequency Stability	§2.1055, §22.355	≤ ±2.5ppm.	Section 8 of Appendix B	Pass	Α	
Remark: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".						

2.2 GSM 1900/UMTS Band 2 /LTE Band 2

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232	EIRP ≤ 2 W	Section 1 of Appendix B	Pass	А
Peak-Average Ratio	§2.1046, §24.232	Limit≤13 dB	Section 2 of Appendix B	Pass	А
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А



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		<u> </u>				
Band Edges Compliance	§2.1051, §24.238	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass	А	
Spurious Emission at Antenna Terminals	§2.1051, §24.238	≤ -13 dBm/1 MHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B	Pass	Α	
Field Strength of Spurious Radiation	§2.1053, §24.238	≤ -13 dBm/1 MHz.	Section 7 of Appendix B	Pass	В	
Frequency Stability	§2.1055, §24.235	≤ ±2.5 ppm.	Section 8 of Appendix B	Pass	А	
Remark: For the ve	Remark: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".					

2.3 UMTS Band 4 /LTE Band 4 /66

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*	
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)	EIRP ≤ 1 W	Section 1 of Appendix B	Pass	А	
Peak-Average Ratio	§2.1046, §27.50(d)	Limit≤13 dB	Section 2 of Appendix B	Pass	А	
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А	
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А	
Band Edges Compliance	§2.1051, §27.53(h)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass	А	
Spurious Emission at Antenna Terminals	§2.1051, §27.53(h)	≤ -13 dBm/1 MHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B	Pass	А	
Field Strength of Spurious Radiation	§2.1053, §27.53(h)	≤ -13 dBm/1 MHz.	Section 7 of Appendix B	Pass	В	
Frequency Stability	§2.1055, §27.54	≤ ±2.5 ppm.	Section 8 of Appendix B	Pass	А	
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2.4 LTE Band 7/38/41/CA 7C/ CA 38C/ CA 41C

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)	EIRP ≤ 2W	Section 1 of Appendix B	Pass	А
Peak-Average Ratio	§27.50(a)	≤13 dB	Section 2 of Appendix B	Pass	А
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А
Band Edges Compliance	§2.1051, §27.53(m4)	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.	Section 5 of Appendix B	Pass	А
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)	Channel Edge -25dBm/ 1 MHz 1 MHz 1 MHz 9 kHz 95 MHz X MHz 10th harmonics X=Max {6MHz, EBW}	Section 6 of Appendix B	Pass	А
Field Strength of Spurious Radiation	§2.1053, §27.53(m)	Channel Edge -25dBm/ 1 MHz 1 MHz 1 MHz 9 kHz 95 MHz XMHz 10th harmonics X=Max {6MHz, EBW}	Section 7 of Appendix B	Pass	В
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/frequency block.	Section 8 of Appendix B	Pass	А
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2.5 LTE Band 12/17

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*
Effective (Isotropic) Radiated Power Output Data	§27.50(c)	FCC: ERP ≤ 3 W.	Section 1 of Appendix B	Pass	А
Peak-Average Ratio	§2.1046, §27.50(c)	Limit≤13 dB	Section 2 of Appendix B	Pass	А
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А
Band Edges Compliance	§2.1051, §27.53(g)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass	Α
Spurious Emission at Antenna Terminals	§2.1051, §27.53(g)	FCC: ≤ -13 dBm/100 kHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B	Pass	А
Field Strength of Spurious Radiation	§2.1053, §27.53(g)	FCC: ≤ -13 dBm/100 kHz.	Section 7 of Appendix B	Pass	В
Frequency Stability	§2.1055, §27.54	≤ ±2.5ppm.	Section 8 of Appendix B	Pass	А
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2.6 LTE Band 13

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(b)	FCC: ERP ≤ 3 W.	Section 1 of Appendix B	Pass	А
Peak-Average Ratio	§27.50	Limit≤13 dB	Section 2 of Appendix B	Pass	А
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А
Bandwidth	§2.1049,	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	Α
Band Edges Compliance	§2.1051, §27.53(c)	≤ -13 dBm/1%*EBW, in 1 MHz bands immediately outside and adjacent to the frequency block.	Section 5 of Appendix B	Pass	А
Spurious Emission at Antenna Terminals	§2.1051, §27.53(c) §27.53(f)	FCC: ≤ -13 dBm/100 kHz, from 9 kHz to 10 th 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. 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.	Section 6 of Appendix B	Pass	Α
Field Strength of Spurious Radiation	§2.1053, §27.53(c) §27.53(f)	FCC: ≤ -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.	Section 7 of Appendix B	Pass	В
Frequency Stability	§2.1055, §27.54				



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2.7 LTE Band 26(814~824 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*
Transmitter Conducted Power Output	§2.1046, §90.635	< 100 W.	Section 1 of Appendix B	Pass	Α
Peak-Average Ratio		FCC: Limit≤13 dB	Section 2 of Appendix B	Pass	А
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B	Pass	А
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А
Emission Mask	§2.1051 § 90.691	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 Log10(f/6.1) decibels or 50+10Log10(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.	Section 5 of Appendix B	Pass	A
Spurious Emission at Antenna Terminals	§2.1051, §90.691	< 43 + 10Log10(P[Watts]) for all out-of-band emissions	Section 6 of Appendix B	Pass	Α
Field Strength of Spurious Radiation	§2.1053, §90.691	< 43 + 10Log10(P[Watts]) for all out-of-band emissions	Refer to SZCR210602159002	Pass	А
Frequency §2.1055, Stability §90.213 < ±2.5ppm. Section 8 of Appendix B Pass A					
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2.8 LTE Band 42

Test Item	FCC Rule No.	Requirements	Test Result	Verdict	Test Lab*
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(k)(3)	EIRP ≤ 30dBm	Section 1 of Appendix B	Pass	А
Peak-Average Ratio	§27.50(k)(4)	FCC: Limit≤13 dB	Section 2 of Appendix B	Pass	А
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B	Pass	А
Band Edges Compliance	§2.1051, §27.50(n)(2)	For mobile operations in the 3450- 3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.	Section 5 of Appendix B	Pass	А
Spurious Emission at Antenna Terminals Spurious §2.1051, §27.50(n)(2) For mobile operations in the 3450- 3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed –13 dBm/MHz. For mobile operations in the 3450- 3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed –13 dBm/MHz.				А	
Field Strength of Spurious Radiation	§2.1053, §27.50(n)(2)	For mobile operations in the 3450-3550 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed -13 dBm/MHz.	Section 7 of Appendix B	Pass	В
Frequency Stability	§2.1055, §27.54	Within authorized bands of operation/ frequency block.	Section 8 of Appendix B	Pass	Α
Remark: For the verdict, the "N/A" denotes "not applicable", the "N/T" denotes "not tested".					



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General Information 3

3.1 Details of Client

Applicant:	Xiaomi Communications Co., Ltd.
Address of Applicant	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085
Manufacturer:	Xiaomi Communications Co., Ltd.
Address of Manufacturer	#019, 9th Floor, Building 6, 33 Xi'erqi Middle Road, Haidian District, Beijing, China, 100085

3.2 Test Location

Lab A:

Company:	SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch	
Address:	No. 1 Workshop, M-10, Middle section, Science & Technology Park, Shenzhen, Guangdong, China	
Post code:	518057	
Test engineer:	Dee Zheng,Swing Hu,Habit Zeng	

Lab B:

Company:	SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD.	
Address:	1/F, Unit D, Building 1, Kanghong Orange Technology Park, No.137, Keyua 3rd Road, Fengdong New City, Xi'an, Shaanxi China	
Post code:	710086	
Test engineer:	Leah Chen,Ken Liu,Andy Yao	



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3.3 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

Lab A:

• A2LA (Certificate No. 3816.01)

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 3816.01.

VCCI

The 3m Fully-anechoic chamber for above 1GHz, 10m Semi-anechoic chamber for below 1GHz, Shielded Room for Mains Port Conducted Interference Measurement and Telecommunication Port Conducted Interference Measurement of SGS-CSTC Standards Technical Services Co., Ltd. have been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-20026, R-14188, C-12383 and T-11153 respectively.

• FCC -Designation Number: CN1178

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized as an accredited testing laboratory.

Designation Number: CN1178. Test Firm Registration Number: 406779.

• Innovation, Science and Economic Development Canada

SGS-CSTC Standards Technical Services Co., Ltd., Shenzhen EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0006.

IC#: 4620C.

Lab B:

A2LA (Certificate No. 4854.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (XI 'AN) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 4854.01.

FCC-Designation Number: CN1271.



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3.4 General Description of EUT

EUT Description:	Mobile Phone	
Model No.:	21081111RG	
Trade Mark:	XIAOMI	
Hardware Version:	P2	
Software Version:	MIUI 12.5	
Sample Type:	⊠Portable Device,	
Antenna Type:	Fixed Internal Antenna	
Antenna Gain:	© Provided by applicant GSM850: -4.08dBi(Ant1); -6.2dBi(Ant3) GSM1900: -1.73dBi(Ant2); -1.9dBi(Ant5) WCDMA Band II: -1.73dBi(Ant2); -2.4dBi(Ant5) WCDMA Band IV: -1.99dBi(Ant2); -2.4dBi(Ant5) WCDMA Band IV: -4.08dBi(Ant1); -6.2dBi(Ant3) LTE Band 2: -1.42dBi(Ant2); -4.6dBi(Ant8) LTE Band 4: -1.99dBi(Ant2); -2.63dBi(Ant4); -2.4dBi(Ant5);-3.7dBi(Ant8) LTE Band 5: -4.08dBi(Ant1); -6.2dBi(Ant3) LTE Band 7: -1.2dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-1.83dBi(Ant8) LTE Band 12: -5.16dBi(Ant1); -5.8dBi(Ant3) LTE Band 13: -5.16dBi(Ant1); -5.8dBi(Ant3) LTE Band 17: -5.16dBi(Ant1); -5.8dBi(Ant3) LTE Band 17: -5.16dBi(Ant1); -6.2(Ant3) LTE Band 26: -4.08dBi(Ant1); -6.2(Ant3) LTE Band 38: -1.2dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-1.83dBi(Ant8) LTE Band 41: -1.2dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-1.83dBi(Ant8) LTE Band 66: -0.94dBi(Ant6); -2.65dBi(Ant11);1.95dBi(Ant12); 0.1dBi(Ant13) LTE Band 66: -0.94dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-3.7dBi(Ant8) LTE CA_7C: -1.2dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-1.83dBi(Ant8) LTE CA_38C: -1.2dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-1.83dBi(Ant8) LTE CA_41C: -1.2dBi(Ant2); -2.16dBi(Ant4); 0.1dBi(Ant5);-1.83dBi(Ant8)	
RF Cable*:	☑Provided by applicant0.5dBm	

Remark1:

*Since the above data and/or information is provided by the applicant relevant results or conclusions of this report are only made for these data and/or information, SGS is not responsible for the authenticity, integrity and results of the data and information and/or the validity of the conclusion.

Remark2: Conduction Power & EIRP of all antennas are tested, and only the worst data is presented



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3.5 Test Mode

Test Mode	Test Modes Description	
GSM/TM1	GSM system, GSM/GPRS, GMSK modulation	
GSM/TM2	GSM system, EGPRS, 8PSK modulation	
UMTS/TM1	UMTS system, WCDMA, QPSK modulation	
CDMA/TM1	CDMA system, OQPSK modulation	
EVDO/TM1	CDMA system, OQPSK modulation	
LTE/TM1	LTE system, QPSK modulation	
LTE/TM2	LTE system, 16QAM modulation	
LTE/TM3	LTE system, 64QAM modulation	

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

3.6 Test Environment

Operating Environment:				
Humidity:	50 % RH			
Atmospheric Pressure:	101.3	0 KPa		
Temperature	NT	25 °C		
	LV	3.5V		
Voltage:	NV	3.85V		
	HV	4.35V		

Remark: LV= lower extreme test voltage; NV= nominal voltage HV= upper extreme test voltage; NT= normal temperature





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3.7 Technical Specification

Characteristics	Description				
	⊠ GSM				
Radio System Type	⊠ UMTS				
	Band	TX		RX	
	GSM850	824 to 84	49 MHz	869 to 894 MHz	
	GSM1900	1850 to 1910 MHz		1930 to 1990 MHz	
	UMTS Band II	1850 to 1910 MHz		1930 to 1990 MHz	
	UMTS Band IV	1710 to	1755 MHz	2110 to 2155 MHz	
	UMTS Band V	824 to 84	49 MHz	869 to 894 MHz	
	LTE Band 2	1850 to	1910 MHz	1930 to 1990 MHz	
	LTE Band 4	1710 to	1755 MHz	2110 to 2155 MHz	
	LTE Band 5	824 to 8	49 MHz	869 to 894 MHz	
	LTE Band 7	2500 to	2570 MHz	2620 to 2690 MHz	
	LTE Band 12	699 to 716 MHz		729 to 746 MHz	
Supported Frequency Range	LTE Band 13	777 to 787 MHz		746 to 756 MHz	
	LTE Band 17	704 to 7	16 MHz	734 to 746 MHz	
	LTE Band 26	814 to 824MHz		859 to 869 MHz	
	(814 to 824 MHz)				
	LTE Band 26 (824 to 849 MHz)	824 to 849 MHz		869 to 894 MHz	
	LTE Band 38	2570 to 2620 MHz		2570 to 2620 MHz	
	LTE Band 41	2496 to 2690MHz		2496 to 2690MHz	
	LTE Band 42	3450 to 3	3550 MHz	3450 to 3550 MHz	
	LTE Band 66	1710 to	1780 MHz	2110 to 2200 MHz	
	LTE CA_7C	2500 to	2570 MHz	2620 to 2690 MHz	
	LTE CA_38C	2570 to 2	2620 MHz	2570 to 2620 MHz	
	LTE CA_41C	2496 to 2690MHz		2496 to 2690MHz	
	GSM system:		⊠0.2 MHz ⊠5 MHz		
Comparisod Character Development	LTE Band 2		3 MHz; ⊠5 MHz; ⊠ MHz, ⊠20 MHz		
Supported Channel Bandwidth	LTE Band 4		☑3 MHz; ☑5 MHz; ☑ 5 MHz, ☑20 MHz		
	LTE Band 5	⊠1.4 MHz;⊠3 MHz; ⊠5 M 10 MHz		3 MHz; ⊠5 MHz; ⊠	



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LTE Band 7			Page: 17 of 46
Life Band 12		LTE Band 7	⊠5 MHz; ⊠10 MHz; ⊠15 MHz, ⊠ 20 MHz
LTE Band 13		LTE Band 12	
LTE Band 17		LTE Band 13	
LTE Band 26(814-824)			7 =
LTE Band 26(824-849) 10 MHz; ∑15 MHz, ∑		LTE Band 26(814-824)	
LTE Band41 LTE Band42 LTE Band42 LTE Band42 LTE Band66 LTE Band CA_7C LTE Band CA_7C LTE Band CA_7C LTE Band CA_7C LTE Band CA_38C LTE Band CA_38C LTE Band CA_38C LTE Band CA_38C LTE Band CA_41C LTE Band CA_50C LTE Band CA_70C LTE Band CA		LTE Band 26(824-849)	10 MHz; ⊠15 MHz
LTE Band42 LTE Band42 LTE Band42 LTE Band66 LTE Band66 LTE Band66 LTE Band66 LTE Band66 LTE Band66 LTE Band CA_7C LTE Band CA_7C LTE Band CA_7C LTE Band CA_7C LTE Band CA_38C LTE Band CA_38C LTE Band CA_38C LTE Band CA_38C LTE Band CA_41C LTE		LTE Band38	20 MHz
LTE Band66		LTE Band41	20 MHz
LTE Bandob 10 MHz; \$\times 15 \text{ MHz}\$, \$\times 20 \text{ MHz}\$ \$\times 100 \text{ MHz} + 200 \text{ MHz}\$ \$\times 150 \text{ MHz} + 150 \text{ MHz}\$ \$\times 150 \text{ MHz} + 150 \text{ MHz}\$ \$\times 200 \text{ MHz} + 200 \text{ MHz}\$ \$\times 150 \text{ MHz} + 200 MHz		LTE Band42	20 MHz
LTE Band CA_7C 10MHz+15MHz 15MHz+20MHz 15MHz+20MHz 20MHz+20MHz 20MHz+20MHz 20MHz+20MHz 20MHz+20MHz 20MHz+20MHz 20MHz+20MHz 20MHz+20MHz 210MHz+15MHz 210MHz+15MHz 210MHz+15MHz 210MHz+15MHz 215MHz+15MHz 215MHz+20MHz 20MHz+20MHz 20MHz+		LTE Band66	
LTE Band CA_38C S15MHz+15MHz		LTE Band CA_7C	⊠10MHz+15MHz ⊠15MHz+15MHz ⊠15MHz+20MHz
LTE Band CA_41C □ 10MHz+15MHz □ 10MHz+20MHz □ 15MHz+20MHz □ 15MHz+15MHz □ 15MHz+20MHz □ 15MHz+20MHz □ 15MHz+20MHz □ 20MHz+20MHz □ 20MHz+20		LTE Band CA_38C	⊠15MHz+15MHz
Note2: WCDMA supports HSUPA, HSDPA, DS-HSDPA,HSPA+, but only the worst case was tested and the data displayed in this report. Characteristics Description GSM850 GSM1900 248KGXW; 246KG7W GSM1900 248KGXW; 246KG7W UMTS Band II UMTS Band IV UMTS Band IV UMTS Band IV UMTS Band V 4M18F9W; UMTS Band V 4M19F9W; UMTS Band V 4M19F9W; UMTS Band V LTE Band 2 LTE Band 2 LTE Band 4 Note2: WCDMA supports HSUPA, HSDPA, DS-HSDPA,HSPA+, but only the worst case was tested and the data displayed in this report. 248KGXW; 246KG7W UMTS Band II UMTS Band IV UMTS Band IV UMTS Band V 4M18F9W; UMTS Band V 4M19F9W; UMTS Band V 4M48G7D;1M10W7D; 1M10W7D 1M9G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D; 17M9W7D LTE Band 4 1M10G7D;1M10W7D; 1M10W7D		LTE Band CA_41C	⊠5MHz+20MHz ⊠10MHz+15MHz ⊠10MHz+20MHz ⊠15MHz+15MHz
Characteristics Description GSM850 GSM1900 CHTS Band II UMTS Band IV UMTS Band IV UMTS Band IV UMTS Band V Description Worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) LTE Band 4 Worst case was tested and the data displayed in this report. Description GSM850 GSM1900 248KGXW; 246KG7W UMTS Band II 4M17F9W; UMTS Band IV 4M18F9W; UMTS Band V 4M19F9W; LTE Band 2 LTE Band 2 Worst case was tested and the data displayed in this report. Description GSM850 GSM1900 248KGXW; 246KG7W UMTS Band II 4M17F9W; UMTS Band IV 4M18F9W; LTE Band 2 LTE Band 4 LTE Band 5 LTE Band 6 LTE Band 7 LTE Band 7 LTE Band 8 LTE Band 8 LTE Band 9 LTE Band 9 LTE Band 1 LTE Band 3 LTE Band 1 LTE Band 1 LTE Band 3 LTE Band 4 LTE Band 1 LTE Band 3 LTE Band 4 LTE Band 1 LTE Band 3 LTE Band 3 LTE Band 4 LTE Band 3 LTE Band 4 LTE Band 1 LTE Band 3 LTE Band 4 LTE Band 3 LTE Band 4 LTE Band 4 LTE Band 3 LTE Band 4 LTE Ban			⊠20MHz+20MHz
Characteristics Description GSM850 QSM1900 Q48KGXW; 246KG7W GSM1900 Q4M17F9W; UMTS Band II UMTS Band IV UMTS Band IV UMTS Band V 4M18F9W; UMTS Band V 4M19F9W; UMTS Band V UMTS Band V LTE Band 2 Description GSM850 Q48KGXW; 246KG7W QSM1900 Q4M17F9W; UMTS Band IV 4M18F9W; UMTS Band V 4M19F9W; LTE Band 2 LTE Band 2 LTE Band 4 LTE Band 7 LTE Band 8 LTE Band 8 LTE Band 8 LTE Band 7 LTE Band 9 L		Note2: WCDMA supports HSUPA, HSDPA, DS-HSDPA,HSPA+, but on	
Designation of Emissions (Remark: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) Description GSM850 248KGXW; 246KG7W UMTS Band II 4M17F9W; UMTS Band IV 4M18F9W; UMTS Band V 4M19F9W; 1M09G7D;1M10W7D; 1M10W7D 2M70G7D;2M69W7D; 2M69W7D 4M48G7D;4M47W7D; 4M48W7D 8M96G7D;8M93W7D; 8M93W7D 13M5G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D; 17M9W7D 1M10G7D;1M10W7D; 1M10W7D		worst case was tested and the data displayed in this report.	
Designation of Emissions (Remark: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) GSM850 248KGXW; 246KG7W UMTS Band II 4M17F9W; UMTS Band IV 4M18F9W; UMTS Band V 4M19F9W; 1M09G7D;1M10W7D; 1M10W7D 2M70G7D;2M69W7D; 2M69W7D 4M48G7D;4M47W7D; 4M48W7D 8M96G7D;8M93W7D; 8M93W7D 13M5G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D; 17M9W7D 1M10G7D;1M10W7D; 1M10W7D	Characteristics	Description	
Designation of Emissions (Remark: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) GSM1900 248KGXW; 246KG7W UMTS Band II 4M17F9W; UMTS Band IV 4M18F9W; 1M09G7D;1M10W7D; 1M10W7D 2M70G7D;2M69W7D; 2M69W7D 4M48G7D;4M47W7D; 4M48W7D 8M96G7D;8M93W7D; 8M93W7D 13M5G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D; 17M9W7D 1M10G7D;1M10W7D; 1M10W7D			248KGXW; 246KG7W
Designation of Emissions (Remark: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) UMTS Band II UMTS Band IV 4M18F9W; UMTS Band V 4M19F9W; 1M09G7D;1M10W7D; 1M10W7D 2M70G7D;2M69W7D; 2M69W7D 4M48G7D;4M47W7D; 4M48W7D 8M96G7D;8M93W7D; 8M93W7D 13M5G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D 1M10G7D;1M10W7D; 1M10W7D			
UMTS Band IV	Designation of Emissions		·
Remark: the necessary bandwidth of which is the worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) UMTS Band V 4M19F9W; 1M09G7D;1M10W7D; 1M10W7D 2M70G7D;2M69W7D; 2M69W7D 4M48G7D;4M47W7D; 4M48W7D 8M96G7D;8M93W7D; 8M93W7D 13M5G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D; 17M9W7D 1M10G7D;1M10W7D; 1M10W7D		UMTS Band IV	•
worst value from the measured occupied bandwidths for each type of channel bandwidth configuration.) LTE Band 4		UMTS Band V	4M19F9W;
I I I E Band /I	worst value from the measured occupied bandwidths for each type of channel bandwidth	LTE Band 2	2M70G7D;2M69W7D; 2M69W7D 4M48G7D;4M47W7D; 4M48W7D 8M96G7D;8M93W7D; 8M93W7D 13M5G7D;13M5W7D; 13M4W7D 17M9G7D;17M9W7D; 17M9W7D
		LTE Band 4	



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		Paye. 10 01 40
		4M48G7D;4M47W7D; 4M49W7D
		8M95G7D;8M93W7D; 8M93W7D
		13M5G7D;13M5W7D; 13M5W7D
		17M9G7D;17M9W7D; 17M9W7D
		1M09G7D;1M10W7D; 1M10W7D
	LTE Dond E	2M69G7D;2M69W7D; 2M69W7D
	LTE Band 5	4M48G7D;4M47W7D; 4M48W7D
		8M96G7D;8M93W7D; 8M93W7D
		4M48G7D;4M47W7D; 4M48W7D
		8M95G7D;8M93W7D; 8M93W7D
	LTE Band 7	13M5G7D;13M5W7D; 13M5W7D
		18M0G7D;17M9W7D; 17M9W7D
		1M09G7D;1M10W7D; 1M10W7D
		2M70G7D;2M69W7D; 2M69W7D
	LTE Band 12	4M48G7D;4M48W7D; 4M48W7D
		8M97G7D;8M93W7D; 8M93W7D
	LTE Band13	4M48G7D;4M47W7D; 4M48W7D
		8M93G7D;8M91W7D; 8M91W7D
	LTE Band 17	4M48G7D;4M47W7D; 4M49W7D
		8M99G7D;8M92W7D; 8M95W7D
	LTE B. 100	1M09G7D;1M10W7D; 1M10W7D
	LTE Band 26	2M69G7D;2M69W7D; 2M69W7D
	(814-849)	4M47G7D;4M47W7D; 4M48W7D
		8M95G7D;8M93W7D; 8M93W7D
		1M09G7D;1M09W7D; 1M10W7D
	LTE Band 26	2M70G7D;2M69W7D; 2M69W7D
		4M48G7D;4M47W7D; 4M49W7D
	(824-849)	8M95G7D;8M92W7D; 8M96W7D
		13M5G7D;13M5W7D; 13M5W7D
		4M48G7D;4M47W7D; 4M47W7D
	LTE B. 100	8M93G7D;8M93W7D; 8M93W7D
	LTE Band 38	13M5G7D;13M5W7D; 13M5W7D
		18M0G7D;17M9W7D; 17M9W7D
		4M48G7D;4M47W7D; 4M47W7D
		8M95G7D;8M93W7D; 8M95W7D
	LTE Band 41	13M5G7D;13M5W7D; 13M5W7D
		18M0G7D;17M9W7D; 17M9W7D
		4M48G7D;4M47W7D; 4M47W7D
	LTE Band 42	8M95G7D;8M91W7D; 8M95W7D
		13M5G7D;13M5W7D; 13M5W7D
		18M0G7D;18M0W7D; 17M9W7D
		1M09G7D;1M10W7D; 1M10W7D
		2M70G7D;2M69W7D; 2M69W7D
	LTE Band 66	4M48G7D;4M47W7D; 4M49W7D
	2.2 24.14 00	8M95G7D;8M93W7D; 8M95W7D
		13M5G7D;13M5W7D; 13M5W7D
		17M9G7D;17M9W7D; 17M9W7D
		50RB+100RB:27M6G7D;27M6W7D; 27M6W7D
		75RB+50RB:23M0G7D;23M0W7D; 23M1W7D
	LTE Bond CA 7C	75RB+75RB:28M2G7D;28M2W7D; 28M2W7D
	LTE Band CA_7C	75RB+100RB:32M6G7D;32M6W7D; 32M5W7D
		100RB+50RB:27M6G7D;27M6W7D; 27M6W7D
		100RB+75RB:32M5G7D;32M6W7D; 32M6W7D
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	0
	100RB+100RB:37M5G7D;37M5W7D; 37M5W7D
LTE Band CA_38C	75RB+75RB:28M2G7D;28M3W7D; 28M3W7D 100RB+100RB:37M5G7D;37M5W7D; 37M4W7D
LTE Band CA_41C	25RB+100RB:22M8G7D;22M8W7D; 22M8W7D; 50RB+75RB:23M1G7D;23M1W7D; 23M1W7D; 50RB+100RB:27M7G7D;27M7W7D; 27M7W7D; 75RB+50RB:23M1G7D;23M0W7D; 23M1W7D; 75RB+75RB:28M2G7D;28M3W7D; 28M3W7D; 75RB+100RB:32M6G7D;32M6W9D; 32M7W7D; 100RB+25RB:22M8G7D;22M8W7D; 22M8W7D; 100RB+50RB:27M7G7D;27M7W7D; 27M6W7D; 100RB+75RB:32M6G7D;32M7W7D; 32M6W7D; 100RB+100RB:37M5G7D;37M5W7D; 37M5W7D;



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3.8 Test Frequencies

Test Mode	TX / RX	TY / PY RF Channel				
i est ivioue	IA/NA	Low (L)	Middle (M)	High (H)		
	TX	Channel 128	Channel 190	Channel 251		
GSM850	1.7	824.2MHz	836.6 MHz	848.8 MHz		
	DV	Channel 128	Channel 190	Channel 251		
	RX	869.2 MHz	881.6 MHz	893.8 MHz		

Test Mode	TX / RX	TY / PY RF Channel			
i est ivioue		Low (L)	Middle (M)	High (H)	
	TX	Channel 512	Channel 661	Channel 810	
GSM1900	1.7	1850.2MHz 1880.0 MHz	1909.8 MHz		
	RX	Channel 512	Channel 661	Channel 810	
		1930.2 MHz	1960.0 MHz	1989.8 MHz	

Test Mode	TX / RX	RF Channel				
rest wode	IX/IX	Low (L)	Middle (M)	High (H)		
	TX	Channel 9262	Channel 9400	Channel 9538		
WCDMA Band II	IA	1852.4 MHz	1880.0 MHz 1907.6 MH			
WCDIVIA Band II	D	Channel 9662	Channel 9800	Channel 9938		
	RX	1932.4 MHz	1960.0 MHz	1987.6 MHz		

Test Mode	TX / RX		RF Channel	
i est Mode	IA/ NA	Low (L)	Middle (M)	High (H)
		Channel 1312	Channel 1413	Channel 1513
WCDMA Band IV	TX	1712.4MHz	1732.6 MHz	1752.6 MHz
WCDIVIA Band IV	RX	Channel 1537	Channel 1638	Channel 1738
	KΛ	2112.4 MHz	2132.6 MHz	2152.6 MHz

Test Mode	TX / RX RF Channel			
I est Mode		Low (L)	Middle (M)	High (H)
	TV	Channel 4132	Channel 4182	Channel 4233
MCDMA Bond V	TX	826.4MHz 836.4 MHz	836.4 MHz	846.6 MHz
WCDMA Band V	DV	Channel 4357	Channel 4407	Channel 4458
	RX	871.4 MHz	881.4 MHz	891.6 MHz



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Test Mode	Bandwidth	TX / RX		RF Channel	
rest iviode	Danuwiuin	IA/KA	Low (L)	Middle (M)	High (H)
			Channel 18607	Channel 18900	Channel 19193
		TX	1850.7 MHz	1880 MHz	1909.3 MHz
	1.4MHz	RX	Channel 607	Channel 900	Channel 1193
		KA	1930.7 MHz	1960 MHz	1989.3 MHz
			Channel 18615	Channel 18900	Channel 19185
	3MHz	TX	1851.5 MHz	1880 MHz	1908.5 MHz
		RX	Channel 615	Channel 900	Channel 1185
		KA	1931.5 MHz	1960 MHz	1988.5 MHz
			Channel 18625	Channel 18900	Channel 19175
	58411	TX	1852.5 MHz	1880 MHz	1907.5 MHz
	5MHz	RX	Channel 625	Channel 900	Channel1175
LTE Dand O			1932.5 MHz	1960 MHz	1987.5 MHz
LTE Band 2	10MHz RX	TX	Channel 18650	Channel 18900	Channel 19150
			1855 MHz	1880 MHz	1905 MHz
		DV	Channel 650	Channel 900	Channel 1150
		KA	1935 MHz	1960 MHz	1985 MHz
			Channel 18675	Channel 18900	Channel 19125
		TX	1857.5 MHz	1880 MHz	1902.5 MHz
	15MHz	RX	Channel 675	Channel 900	Channel 1125
		100	1937.5 MHz	1960 MHz	1982.5 MHz
			Channel 18700	Channel 18900	Channel 19100
		TX	1860 MHz	1880 MHz	1900 MHz
	20MHz	DV	Channel 700	Channel 900	Channel 1100
		RX	1940 MHz	1960 MHz	1980 MHz



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Toot Mode	Bandwidth	TX / RX		RF Channel	
Test Mode	Danuwium	IA/KA	Low (L)	Middle (M)	High (H)
			Channel 19957	Channel 20175	Channel 20393
		TX	1710.7 MHz	1732.5 MHz	1754.3 MHz
	1.4MHz	RX	Channel 1975	Channel 2175	Channel 2375
		KA	2112.5 MHz	2132.5MHz	2152.5 MHz
			Channel 19965	Channel 20175	Channel 20385
		TX	1711.5 MHz	1732.5 MHz	1753.5 MHz
	3MHz	RX	Channel 2000	Channel 2175	Channel 2350
		KA	2115 MHz	2132.5MHz	2150 MHz
	5MHz		Channel 19975	Channel 20175	Channel 20375
		TX	1712.5 MHz	1732.5 MHz	1752.5 MHz
		RX	Channel 1975	Channel 2175	Channel 2375
LTC Dond 4			2112.5 MHz	2132.5MHz	2152.5 MHz
LTE Band 4	10MHz	TX	Channel 20000	Channel 20175	Channel 20350
			1715 MHz	1732.5 MHz	1750 MHz
		RX	Channel 2000	Channel 2175	Channel 2350
		INA	2115 MHz	2132.5MHz	2150 MHz
			Channel 20025	Channel 20175	Channel 20325
		TX	1717.5 MHz	1732.5 MHz	1747.5 MHz
	15MHz	RX	Channel 2025	Channel 2175	Channel 2325
		100	2117.5 MHz	2132.5MHz	2147.5 MHz
			Channel 20050	Channel 20175	Channel 20300
		TX	1720 MHz	1732.5 MHz	1745 MHz
	20MHz	DV	Channel 2050	Channel 2175	Channel 2300
		RX	2120 MHz	2132.5MHz	2145 MHz

Took Mode	Donalisidah	TV / DV	RF Channel		
Test Mode	Bandwidth	TX / RX	Low (L)	Middle (M)	High (H)
			Channel 20407	Channel 20525	Channel 20643
	1.4MHz	TX	824.7 MHz	836.5 MHz	848.3 MHz
		RX	Channel 2407	Channel 2525	Channel 2643
		KA.	869.7 MHz	881.5 MHz	893.3 MHz
	3MHz		Channel 20415	Channel 20525	Channel 20635
		TX	825.5 MHz	836.5 MHz	847.5 MHz
		RX	Channel 2415	Channel 2525	Channel 2635
LTE Davide			870.5 MHz	881.5 MHz	892.5 MHz
LTE Band 5		TX	Channel 20425	Channel 20525	Channel 20625
			826.5 MHz	836.5 MHz	846.5 MHz
	5MHz	RX	Channel 2425	Channel 2525	Channel 2625
	10MHz		871.5 MHz	881.5 MHz	891.5 MHz
			Channel 20450	Channel 20525	Channel 20600
		TX	829 MHz	836.5 MHz	844 MHz
		RX	Channel 2450	Channel 2525	Channel 2600
		INΛ	874 MHz	881.5 MHz	889 MHz



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			ı ag		
Test Mode	Bandwidth	TX / RX	RF Channel		
i est ivioue	Danawatii	IX/IX	Low (L)	Middle (M)	High (H)
			Channel 20775	Channel 21100	Channel 21425
		TX	2502.5 MHz	2535 MHz	2567.5 MHz
	5MHz	RX	Channel 2775	Channel 3100	Channel 5825
		KA.	2622.5 MHz	2655 MHz	2687.5 MHz
			Channel 20800	Channel 21100	Channel 21400
		TX	2505 MHz	2535 MHz	2565 MHz
	10MHz	RX	Channel 2800	Channel 3100	Channel 3400
1.TE D 1.7			2625 MHz	2655 MHz	2685 MHz
LTE Band 7			Channel 20825	Channel 21100	Channel 21375
	451411		2507.5 MHz	2535 MHz	2562.5 MHz
	15MHz		Channel 2825	Channel 3100	Channel 3375
		RX	2627.5 MHz	2655 MHz	2682.5 MHz
			Channel 20850	Channel 21100	Channel 21350
		TX	2510 MHz	2535 MHz	2560 MHz
	20MHz	RX	Channel 2850	Channel 3100	Channel 3350
		KΛ	2630 MHz	2655 MHz	2680 MHz

Took Mode	Donalissialth	TV / DV		RF Channel	
Test Mode	Bandwidth	TX / RX	Low (L)	Middle (M)	High (H)
			Channel 23017	Channel 23095	Channel 23173
		TX	699.7 MHz	707.5 MHz	715.3 MHz
	1.4MHz	RX	Channel 5017	Channel 5095	Channel 5173
		KΛ	729.7 MHz	737.5 MHz	745.3 MHz
			Channel 23025	Channel 23095	Channel 23165
		TX	700.5 MHz	707.5 MHz	714.5 MHz
	3MHz	RX	Channel 5025	Channel 5095	Channel 5165
1.TE D 140		KΧ	730.5 MHz	737.5 MHz	744.5 MHz
LTE Band 12		5MHz TX RX	Channel 23035	Channel 23095	Channel 23155
			701.5 MHz	707.5 MHz	713.5 MHz
	SIVIHZ		Channel 5035	Channel 5095	Channel 5155
			731.5 MHz	737.5 MHz	743.5 MHz
			Channel 23060	Channel 23095	Channel 23130
		TX	704 MHz	707.5 MHz	711 MHz
	10MHz	DV	Channel 5060	Channel 5095	Channel 5130
		RX	734 MHz	737.5 MHz	741 MHz

Test Mode	Bandwidth	TX / RX		RF Channel	
rest Mode	Danuwidin	IA/KA	Low (L)	Middle (M)	High (H)
			Channel 23025	Channel 23230	Channel 23255
		TX	779.5 MHz	782 MHz	784.5 MHz
	5MHz	RX	Channel 5205	Channel 5230	Channel 5255
LTE Band 13		KΛ	748.5 MHz	751 MHz	753.5 MHz
LIE Dallu 13			Channel 23230	Channel 23230	Channel 23230
		TX	782 MHz	782 MHz	782 MHz
	10MHz	DV	Channel 5230	Channel 5230	Channel 5230
		RX	751 MHz	751 MHz	751 MHz



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Test Mode	Bandwidth	TX / RX	RF Channel			
rest Mode	Dariuwiuiri	IA/KA	Low (L)	Middle (M)	High (H)	
			Channel 23755	Channel 23790	Channel 23825	
		TX	706.5 MHz	710 MHz	713.5 MHz	
	5MHz	5MHz RX	Channel 5755	Channel 5790	Channel 5825	
LTE Band 17			736.5 MHz	740 MHz	743.5 MHz	
LIE Dallu II			Channel 23780	Channel 23790	Channel 23800	
		TX	709 MHz	710 MHz	711 MHz	
	10MHz	RX	Channel 5780	Channel 5790	Channel 5800	
		KΛ	739 MHz	740 MHz	741 MHz	

Toot Mode	Dondwidth	TV / DV		RF Channel	
Test Mode	Bandwidth	TX / RX	Low (L)	Middle (M)	High (H)
			Channel 26697	Channel 26740	Channel 26783
		TX	814.7 MHz	819 MHz	823.3 MHz
	1.4MHz	RX	Channel 8697	Channel 8740	Channel 8783
			859.7 MHz	864MHz	868.3 MHz
			Channel 26705	Channel 26740	Channel 26775
		TX	815.5 MHz	819 MHz	822.5 MHz
	3MHz	RX	Channel 8705	Channel 8740	Channel 8775
LTE Band 26			860.5 MHz	864MHz	867.5 MHz
(814-824)			Channel 26715	Channel 26740	Channel 26765
(0.1.02.)	ENALL-	TX	816.5 MHz	819 MHz	821.5 MHz
	5MHz	RX	Channel 8715	Channel 8740	Channel 8755
		KA	861.5 MHz	864MHz	866.5 MHz
			Channel 26740	Channel 26740	Channel 26740
		TX	819 MHz	819 MHz	819 MHz
	10MHz	RX	Channel 8740	Channel 8740	Channel 8740
		KΛ	864MHz	864MHz	864MHz



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Test Mode	Bandwidth	TX / RX		RF Channel		
i est ivioue	Danuwidin	IA/IX	Low (L)	Middle (M)	High (H)	
			Channel 26797	Channel 26915	Channel 27033	
		TX	824.7 MHz	836.5 MHz	848.3 MHz	
	1.4MHz	RX	Channel 8697	Channel 8915	Channel 9033	
		KA	859.7 MHz	881.5 MHz	893.3 MHz	
		,	Channel 26805	Channel 26915	Channel 27025	
		TX	825.5 MHz	836.5 MHz	847.5 MHz	
	3MHz	RX	Channel 8805	Channel 8915	Channel 9025	
		KA	860.5 MHz	881.5 MHz	892.5 MHz	
	5MHz	TX	Channel 26815	Channel 26915	Channel 27015	
LTE Band26			826.5 MHz	836.5 MHz	846.5 MHz	
(824-849)		RX	Channel 8815	Channel 8915	Channel 9015	
(0=1010)			871.5 MHz	881.5 MHz	891.5 MHz	
			Channel 26840	Channel 26915	Channel 26990	
		TX	829 MHz	836.5 MHz	844 MHz	
	10MHz	RX	Channel 8840	Channel 8915	Channel 8990	
		KA	874 MHz	881.5 MHz	889 MHz	
			Channel 26865	Channel 26915	Channel 26965	
		TX	831.5 MHz	836.5 MHz	841.5 MHz	
	15MHz	RX	Channel 8865	Channel 8915	Channel 8965	
		1.70	876.5 MHz	881.5 MHz	886.5 MHz	



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Test Mode	Bandwidth	TX / RX	RF Channel				
rest Mode	Dariuwiuiri	IA/KA	Low (L)	Middle (M)	High (H)		
	5MHz	TX/RX	Channel 37775	Channel38000	Channel 38225		
	SIVITZ	I A/NA	2572.5 MHz	2595 MHz	2617.5 MHz		
	10MH -	10MHz TX/RX	Channel 37800	Channel38000	Channel 38200		
LTE Band 38	TOIVITZ		2575 MHz	2595 MHz	2615 MHz		
LIE Dallu 30	15MHz	TX/RX	Channel 37825	Channel38000	Channel 38175		
	IOIVITZ	17/11/	2577.5 MHz	2595 MHz	2612.5 MHz		
	20MHz	TX/RX	Channel 37850	Channel38000	Channel 38150		
	ΖυΙνίΠΖ	17/11/	2580 MHz	2595 MHz	2610 MHz		

Test Mode	Bandwidth	TX / RX	RF Channel				
i est ivioue	Dariuwiutii	IA/KA	Low (L)	Middle (M)	High (H)		
			Channel 39675	Channel40620	Channel 41565		
	5MHz	TX / RX	2498.5 MHz	2593 MHz	2687.5 MHz		
			Channel 39700	Channel40620	Channel 41540		
LTE Band 41	10MHz	TX / RX	2501 MHz	2593 MHz	2685 MHz		
(2496-2690)			Channel 39725	Channel40620	Channel 41515		
,	15MHz	TX / RX	2503.5 MHz	2593 MHz	2682.5 MHz		
			Channel 39750	Channel40620	Channel 41490		
	20MHz	TX / RX	2506 MHz	2593 MHz	2680 MHz		

Test Mode	Bandwidth	TX / RX	RF Channel				
i est ivioue	Dariuwiuiri	IA/KA	Low (L)	Middle (M)	High (H)		
			Channel 42115	Channel 42590	Channel 43065		
	5MHz	TX / RX	3452.5 MHz	3500 MHz	3547.5 MHz		
			Channel 42140	Channel 42590	Channel 43040		
1.75.5	10MHz	TX / RX	3455 MHz	3500 MHz	3545 MHz		
LTE Band 42			Channel 42165	Channel 42590	Channel 43015		
	15MHz	TX / RX	3457.5 MHz	3500 MHz	3542.5 MHz		
			Channel 42190	Channel 42590	Channel 42990		
	20MHz	TX / RX	3460 MHz	3500 MHz	3540 MHz		



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Test Mode	Bandwidth	TX / RX		RF Channel	
rest Mode	Danuwium	IA/KA	Low (L)	Middle (M)	High (H)
			Channel 131979	Channel 132322	Channel 132665
		TX	1710.7 MHz	1745 MHz	1779.3 MHz
	1.4MHz	RX	Channel 66443	Channel 66786	Channel 67329
		KA	2110.7 MHz	2145MHz	2199.3 MHz
			Channel 131987	Channel 132322	Channel 132657
		TX	1711.5 MHz	1745 MHz	1778.5MHz
	3MHz	RX	Channel 66451	Channel 66786	Channel 67121
		KA	2111.5 MHz	2145MHz	2198.5MHz
			Channel 131997	Channel 132322	Channel 132647
		TX	1712.5 MHz	1745 MHz	1777.5 MHz
	5MHz	RX	Channel 66461	Channel 66786	Channel 67311
LTE Davidee			2112.5 MHz	2145MHz	2197.5 MHz
LTE Band66			Channel 132022	Channel 132322	Channel 132622
		TX	1715 MHz	1745 MHz	1775 MHz
	10MHz	RX	Channel 66486	Channel 66786	Channel 67286
		KA	2115 MHz	2145MHz	2195 MHz
			Channel 132047	Channel 132322	Channel 132597
		TX	1717.5 MHz	1745 MHz	1772.5 MHz
	15MHz	RX	Channel 66511	Channel 66786	Channel 67261
		100	2117.5 MHz	2145MHz	2192.5 MHz
			Channel 132072	Channel 132322	Channel 132572
		TX	1720 MHz	1745 MHz	1770 MHz
	20MHz	RX	Channel 66536	Channel 66786	Channel 67236
		KΛ	2120 MHz	2145MHz	2190 MHz



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Table 4.3.1.1.7A-1: Test frequencies for CA 7C

Range	CC-Combo / N _{RB_agg} [RB]		CC1 Note1				CC2 Note1				
		BW [RB]	NuL	f∪∟ [MHz]	N _{DL}	f _{DL} [MHz]	BW [RB]	NuL	f∪∟ [MHz]	N _{DL}	f _{DL} [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
Note 1:	Carriers in inc	creasing f	requency	order.						<u></u>	

Table 4.3.1.2.6A-1: Test frequencies for CA_38C

Range	CC- Combo / NRB_agg [RB]		CC1 Note1			CC2 Note1		
		BW [RB]	N _{UL/DL}	ful/bl [MHz]	BW [RB]	N _{UL/DL}	f _{UL/DL} [MHz]	
Low	75+75	75	37825	2577.5	75	37975	2592.5	
	100+100	100	37850	2580	100	38048	2599.8	
Mid	75+75	75	37925	2587.5	75	38075	2602.5	
	100+100	100	37901	2585.1	100	38099	2604.9	
High	75+75	75	38025	2597.5	75	38175	2612.5	
	100+100	100	37952	2590.2	100	38150	2610	
Note 1:	Carriers in i	Carriers in increasing frequency order.						



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Table 4.3.1.2.9A-1: Test frequencies for CA_41C

Range	CC- Combo / NRB_agg [RB]	ombo / N _{RB_agg} CC1 [RB] Note1				CC2 Note1	
		BW		f ul/DL	BW		ful/DL
		[RB]	N _{UL/DL}	[MHz]	[RB]	N _{UL/DL}	[MHz]
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 2	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	2598.0
		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
Note 1:		ncreasing f	requency order.				



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Description of Tests 4

4.1 Conducted Output Power

Measurement Procedure: FCC KDB 971168 D01 V03r01

The transmitter output was connected to a calibrated coaxial cable, attenuator and power meter, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The power output at the transmitter antenna port was determined by adding the value of the cable insertion loss to the power reading. The tests were performed at three frequencies (low channel, middle channel and high channel) and on the highest power levels, which can be setup on the transmitters.

Remark: Reference test setup 1





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4.2 Effective (Isotropic) Radiated Power of Transmitter

Measurement Procedure: FCC KDB 971168 D01 V03r01; C63.26 (2015)

Calculate power in dBm by the following formula:

ERP (dBm) = Conducted Power (dBm) + antenna gain (dBd) EIRP(dBm) = Conducted Power (dBm) + antenna gain (dBi)

EIRP=ERP+2.15dB

4.3 Occupied Bandwidth

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 4.2

The occupied bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission shall be measured. The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel). The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1 percent of the selected span as is possible without being below 1 percent. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual. The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 percent of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded. The span between the two recorded frequencies is the occupied bandwidth.

Remark: Reference test setup 1

Test Settings

- 1. The signal analyzer's automatic bandwidth measurement capability was used to perform the 99% occupied bandwidth and the 26dB bandwidth. The bandwidth measurement was not influenced by any intermediate power nulls in the fundamental emission.
- 2. RBW = 1 5% of the expected OBW
- VBW ≥ 3 x RBW
- Detector = Peak
- Trace mode = max hold
- Sweep = auto couple
- 7. The trace was allowed to stabilize
- 8. If necessary, steps 2 7 were repeated after changing the RBW such that it would be within
 - 1 5% of the 99% occupied bandwidth observed in Step 7





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4.4 Band Edge at Antenna Terminals

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 6.0

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at two frequencies (low channel and high channel).in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to rms.

Remark: Reference test setup 1

Test Settings

- 1. Start and stop frequency were set such that the band edge would be placed in the center of the plot
- 2. Span was set large enough so as to capture all out of band emissions near the band edge
- 3. RBW > 1% of the emission bandwidth
- VBW > 3 x RBW
- Detector = RMS
- Number of sweep points ≥ 2 x Span/RBW
- 7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- Sweep time = auto couple
- 9. The trace was allowed to stabilize





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4.5 Spurious And Harmonic Emissions at Antenna Terminal

Measurement Procedure: FCC KDB 971168 D01 V03r01

The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth 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 emission are attenuated at least 26 dB below the transmitter power.

Remark: Reference test setup 1

Test Settings

- Start frequency was set to 30MHz and stop frequency was set to at least 10 * the fundamental frequency (separated into at least two plots per channel)
- Detector = RMS
- Trace mode = trace average for continuous emissions, max hold for pulse emissions
- Sweep time = auto couple
- The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings





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4.6 Peak-Average Ratio

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.7.1

A peak to average ratio measurement is performed at the conducted port of the EUT. For WCDMA signals, the spectrum analyzers Complementary Cumulative Distribution Function (CCDF) measurement profile is used to determine the largest deviation between the average and the peak power of the EUT in a given bandwidth. The CCDF curve shows how much time the peak waveform spends at or above a given average power level. The percent of time the signal spends at or above the level defines the probability for that particular power level. For GSM signals, an average and a peak trace are used on a spectrum analyzer to determine the largest deviation between the average and the peak power of the EUT in a bandwidth greater than the emission bandwidth. The traces are generated with the spectrum analyzer set to zero span mode.

Remark: Reference test setup 1

Test Settings

- The signal analyzer's CCDF measurement profile is enabled
- Frequency = carrier center frequency
- 3. Measurement BW > Emission bandwidth of signal
- 4. The signal analyzer was set to collect one million samples to generate the CCDF curve
- The measurement interval was set depending on the type of signal analyzed. For continuous signals (>98% duty cycle), the measurement interval was set to 1ms. For burst transmissions, the spectrum analyzer is set to use an internal "RF Burst" trigger that is synced with an incoming pulse and the measurement interval is set to less than the duration of the "on time" of one burst to ensure that energy is only captured during a time in which the transmitter is operating at maximum power





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4.7 Field Strength of Spurious Radiation

Measurement Procedure: FCC KDB 971168 D01 V03r01

Below 1GHz test procedure as below:

- 1). The EUT was powered ON and placed on a 80cm high table in the chamber. The antenna of the transmitter was extended to its maximum length.
- 2). The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m (for the test frequency of below 30MHz, the antenna was tuned to heights 1 meter) the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made.
- 3). Steps 1) and 2) were performed with the EUT and the receive antenna in both vertical and horizontal polarization.
- 4). The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter.
- 5). A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 2) is obtained for this set of conditions.
- 6). The output power into the substitution antenna was then measured.
- 7). Steps 5) and 6) were repeated with both antennas polarized.
- 8) Calculate power in dBm by the following formula:

ERP(dBm) = Pg(dBm) - cable loss (dB) + antenna gain (dBd)

Where:

Pd is the dipole equivalent power, Pg is the generator output into the substitution antenna, and the antenna gain is the gain of the substitute antenna used relative to either a half-wave dipole (dBd) or an isotropic source (dBi). The substitute level is equal to Pg [dBm] – cable loss [dB]. The calculated Pd levels are then compared to the absolute spurious emission limit of -13dBm which is equivalent to the required minimum attenuation of 43 + 10log10(Power [Watts]).

Above 1GHz test procedure as below:

- 1) Different between above is the test site, change from Semi- Anechoic Chamber to fully Anechoic Chamber
- 2) Calculate power in dBm by the following formula:

EIRP(dBm) = Pg(dBm) - cable loss (dB) + antenna gain (dBi) EIRP=ERP+2.15dB

Where:

Pg is the generator output power into the substitution antenna.

- 3. Test the EUT in the lowest channel, the middle channel the Highest channel
- 4. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, Only the test worst case mode is recorded in the report.
- 5. Repeat above procedures until all frequencies measured was complete

Remark1: Reference test setup 2

Remark2: The emission below 18G were measured at a 3m test distance, while emissions above 18GHz were measured at a 1m test distance.



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Test Settings:

1. RBW=100kHz for emission below 1GHz and 1MHz for emission above 1GHz

- 2. VBW≥3*RBW
- 3. Number of sweep point ≥ 2*span/RBW
- 4. Detector=RMS
- 5. Trace mode=Average (Max Hold for pulsed emissions)
- 6. The trace was allowed to stabilize



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4.8 Frequency Stability / Temperature Variation

Measurement Procedure:

Frequency stability testing is performed in accordance with the guidelines of FCC KDB 971168 D01 V03r01; ANSI/C63.26 (2015)

- . The frequency stability of the transmitter is measured by:
- a.) Temperature: The temperature is varied from -30°C to +50°C in 10°C increments using an environmental chamber.
- b.) Primary Supply Voltage: The primary supply voltage is varied from 85% to 115% of the nominal value for non hand-carried battery and AC powered equipment. For hand-carried, battery-powered equipment, primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacturer.

Specification - The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within $\pm 0.00025\%$ (± 2.5 ppm) of the center frequency.

Time Period and Procedure:

- The carrier frequency of the transmitter is measured at room temperature (20°C to provide a reference).
- 2. The equipment is turned on in a "standby" condition for fifteen minutes before applying power to the transmitter. Measurement of the carrier frequency of the transmitter is made within one minute after applying power to the transmitter.
- 3. Frequency measurements are made at 10°C intervals ranging from -30°C to +50°C. A period of at least one half-hour is provided to allow stabilization of the equipment at each temperature level.

Remark: Reference test setup 3



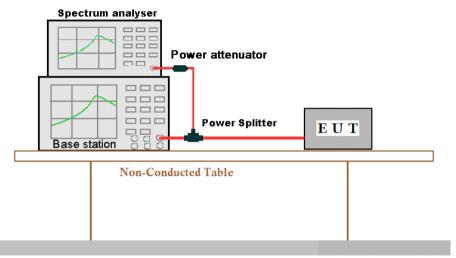


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4.9 Test Setups

4.9.1 **Test Setup 1**



Ground Reference Plane

4.9.2 **Test Setup 2**

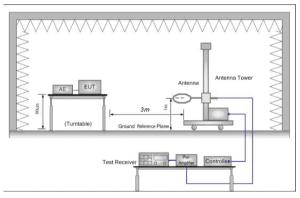


Figure 1. Below 30MHz



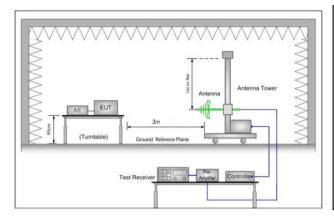
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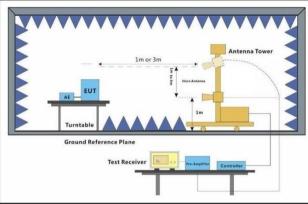
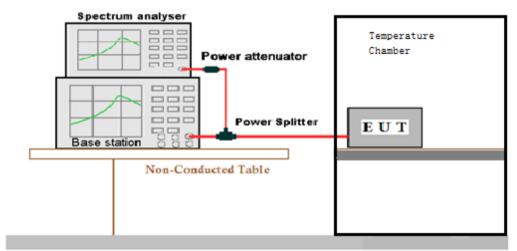


Figure 2. 30MHz to 1GHz

Figure 3. above 1GHz

4.9.3 **Test Setup 3**



Ground Reference Plane



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4.10Test Conditions

Test Case	•	Test Condi	tions
		Test Environm ent	Ambient Climate & Rated Voltage
	Average Power,	Test Setup	Test Setup 1
Transmit	Total	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
Output		Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2
Power Data Average Power, Spectral Density (if required)	•	Test Environm ent	Ambient Climate & Rated Voltage
	Test Setup	Test Setup 1	
	•	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
			GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3
		Test Environm ent	Ambient Climate & Rated Voltage
Peak-to-A Ratio	verage	Test Setup	Test Setup 1
(if required	i)	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3
		Test Environm ent	Ambient Climate & Rated Voltage
Modulation Characteristics		Test Setup	Test Setup 1
		RF Channels (TX)	M (M= middle channel)
		Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3
Bandwid	Occupie	Test	Ambient Climate & Rated Voltage



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	1	1	Page: 41 0f 46
th	d Bandwid	Environm ent	
	th	Test Setup	Test Setup 1
		RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3
	Emissio n	Test Environm ent	Ambient Climate & Rated Voltage
	Bandwid th	Test Setup	Test Setup 1
	(if required)	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3
			Ambient Climate & Rated Voltage
Band Edge Compliand		Test Setup	Test Setup 1
Complianc	,e	RF Channels (TX)	L, H (L= low channel, H= high channel)
		Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3
		Test Environm ent	Ambient Climate & Rated Voltage
Spurious E at Antenna		Test Setup	Test Setup 1
Terminals		RF Channels (TX)	L,M, H (L= low channel, M= middle channel, H= high channel)
		Test Mode	GSM/TM1;UMTS/TM1; LTE/TM1;
Field Strength of Spurious Radiation		Test Environm ent	Ambient Climate & Rated Voltage
Opunous I	Tadiation	Test Setup	Test Setup 2



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		<u> </u>	
	Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3 Remark: If applicable, the EUT conf. that has maximum power dense (based on the equivalent power level) is selected.	
	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)	
Frequency Stability	Test Environm ent	(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 Setup	Test Setup 3	
	RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)	
	Test Mode	GSM/TM1;GSM/TM2;UMTS/TM1; LTE/TM1;LTE/TM2/TM3	



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Main Test Instruments

RF conducted test						
Toot Equipment	Manufacturer	Model No.	Inventory No.	Cal. date	Cal.Due date	
Test Equipment				(yyyy-mm-dd)	(yyyy-mm-dd)	
Signal Analyzer	Rohde & Schwarz	FSV	W025-05	2021/4/14	2022/4/13	
DC Power Supply	Rohde & Schwarz	HMP2020	W009-08	2020/12/4	2021/12/3	
Humidity/ Temperature Indicator	Shanghai Meteorological Industry Factory	HTC-1	W006-17	2021/4/20	2022/4/19	
Temperature Chamber	GIANT FORCE	ICT-150-40- CP-AR	W027-03	2020/11/20	2021/11/19	
Wideband Radio Communication Tester	Anristu	MT8821C	W061-05	2021/4/14	2022/4/13	
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	W005-22	2020/10/22	2021/10/21	



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		RSE Test System	raye.	44 01 40	
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date	Cal Due Date
Semi-Anechoic Chamber	Brilliant-emc	N/A	XAW03-35-01	2019-09-11	2022-09-10
MXA signal analyzer	Keysight	N9020A	XAW01-06-01	2021-04-01	2022-03-31
Radio communication analyzer	ROHDE&SCHWARZ	CMW 500	XAW01-03-02	2021-04-01	2022-03-31
Test receiver	ROHDE&SCHWARZ	ESR	XAW01-08-01	2020-09-11	2021-09-10
Receiving antenna (30MHz-3GHz)	Schwarzbeck	VULB 9163	XAW01-09-01	2019-10-13	2021-10-12
Receiving antenna (1GHz~18GHz)	Schwarzbeck	BBHA 9120D	XAW01-09-02	2019-10-13	2021-10-12
Receiving antenna (15GHz~40GHz)	Schwarzbeck	BBHA 9170	XAW01-09-03	2019-10-13	2021-10-12
Directional antenna rack controller	Max-Full	MF-7802BS	XAW03-03-01	NCR	NCR
High-speed antenna rack controller	Max-Full	MF-7802	XAW03-04-01	NCR	NCR
Filter bank	Tonscend	JS0806-F	XAW03-05-01	NCR	NCR
Filter bank	Tonscend	JS0806s	XAW03-05-02	NCR	NCR
Amplifier	Tonscend	TAP00903040	XAW01-41-01	2020-10-26	2021-10-25
Amplifier	Tonscend	TAP01018048	XAW01-41-02	2020-10-26	2021-10-25
Amplifier	Tonscend	TAP18040048	XAW01-41-03	2020-10-27	2021-10-26
Amplifier	Shanghai Steed	YX28980930	XAW01-41-06	2020-10-26	2021-10-25
5G UXM	Keysight	E7515B	XAW01-04-01	2020-09-11	2021-09-10
Temperature and humidity meter	MingGao	TH101B	XAW01-01-01	2020-11-06	2021-11-05
Measurement Software	Tonscend	TS+ RSE V3.0.0.2	XAW02-05-01	NCR	NCR
Loop Antenna	Schwarzbeck	FMZB 1519B	XAW01-48-02	2021/6/10	2022/6/9



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Measurement Uncertainty 6

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

Lab A:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.41dB
2	RF power density, conducted	±1.96dB
3	Spurious emissions, conducted	±0.41dB
4	Radio Frequency	±7.10 x 10 ⁻⁸
5	Duty Cycle	±0.49%
6	Occupied Bandwidth	±0.2%

Lab B:

No.	Item	Measurement Uncertainty	
1		± 4.8dB (Below 1GHz)	
	Radiated Emission	± 4.8dB (1GHz to 6GHz)	
		± 4.5dB (6GHz to 18GHz)	
		± 5.02dB (Above 18GHz)	



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7 Appendixes

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The End



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