Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 1 of 49

TEST REPORT

Application No:	SEWM2305000177RG
Applicant:	vivo Mobile Communication Co., Ltd.
Address of Applicant:	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
Manufacturer:	vivo Mobile Communication Co., Ltd.
Address of Manufacturer:	No.1, vivo Road, Chang'an, Dongguan, Guangdong, China
EUT Description:	Mobile Phone
Model No.:	V2248
Trade Mark:	vivo
FCC ID:	2AUCY-V2248
Standards:	47 CFR Part 2 47 CFR Part 22
	47 CFR Part 24
	47 CFR Part 27
	47 CFR Part 90
Date of Receipt:	2023/05/01
Date of Test:	2023/05/25 to 2023/06/09
Date of Issue:	2023/06/15
Test Result:	PASS *

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

Authorized Signature:

anta Sun

Panta Sun Wireless Laboratory Manager



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to rems and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Conditions, Terms-and-Conditions, Terms-and

Member of the SGS Group (SGS SA)

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 2 of 49

1 Version

Revision Record						
Version	Chapter	Date	Modifier	Remark		
01		2023/06/09		Original		
02		2023/06/15		Update Cal Date of Receiving antenna (Model No.BBHA 9170		

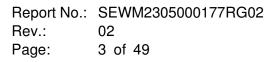
This report supersedes our previous report SEWM2305000177RG02, issued on 2023/06/09, which is hereby deemed null and void.

Prepared By	Sterili
	(Levi Li) / Test Engineer
Checked By	Well Wei
	(Well Wei) / Reviewer



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indermification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or faisification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) are testined for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000



Content

1	Vers	sion	2
2	Tes	t Summary	5
	2.1	NR Band n5/ NR Band n26(824~849 MHz)	5
	2.2	NR Band n7/NR Band n38/NR Band n41	6
	2.3	NR Band n2	7
	2.5	NR Band n66	9
	2.6	NR Band n77/ NR Band n78	10
3	Gen	eral Information	12
	3.1	Client Information	12
	3.2	Test Location	12
	3.3	Test Facility	12
	3.4	General Description of EUT	13
	3.5	Test Mode	14
	3.6	Test Environment	14
	3.7	Description of Support Units	14
	3.8	Technical Specification	
	3.9	Test Frequencies	
	3.9.		
	3.9.		
	3.9.		
	3.9.		
	3.9.		
	3.9.		
		7 Reference test frequencies for NR operating band n66	
		8 Reference test frequencies for NR operating band n77	
	3.9.	9 Reference test frequencies for NR operating band n78	31
4	Des	cription of Tests	34
	4.1	Conducted Output Power	
	4.2	Effective (Isotropic) Radiated Power of Transmitter	35
	4.3	Occupied Bandwidth	36



SG

Unless otherwise agreed in writing, this document is issued by overleaf, available on request or accessible at <u>http://www.sgs.com</u> subject to Terms and Conditions for Electronic Documents at <u>http</u> Attention is drawn to the limitation of liability, indemnification and advised that information contained hencen reflects the Company. An except in full, without prior written approval of the Company. An appearance of this document is unlawful and obligations under seucest in full, without prior written approval of the Company. An appearance of this document is unlawful and offenders may be por results shown in this test report refer only to the sample(s) tested at Attention: To check the authenticity of testing /inspection repo or email: CND.Doccheck@ss.com	/ei p:/ ji s f s f th y ose	n/Terms-and- /www.sgs.cor urisdiction is indings at the to its Client to its Client transactio unauthorized ecuted to the such sample	<u>Conditions.aspx</u> and, for electron <u>inen/Terms-and-Conditions/Term</u> sues defined therein. Any holde a time of its intervention only an and this document does not ex n documents. This document ca alteration, forgery or falsificati fullest extent of the law. Unless (s) are retained for 30 days only.	ic format documents, <u>is-e-Document.aspx</u> . r of this document is id within the limits of onerate parties to a annot be reproduced on of the content or otherwise stated the
South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zon	e	215000	t (86–512) 62992980	www.sgsgroup.com.cn
中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编	:	215000	t (86–512) 62992980	sgs.china@sgs.com

			Report No.: Rev.: Page:	SEWM2305000177RG02 02 4 of 49
4	.4	Band Edge at Antenna Terminals	•	
4	.5	Spurious And Harmonic Emissions at Antenna		
4	.6	Peak-Average Ratio		
4	.7	Field Strength of Spurious Radiation		40
4	.8	Frequency Stability / Temperature Variation		
4	.9	Test Setups		42
	4.9.	1 Test Setup 1		42
	4.9.	2 Test Setup 2		42
	4.9.	3 Test Setup 3		43
4	.10	Test Conditions		44
5	Maii	n Test Instruments		46
6	Mea	asurement Uncertainty		48
7	Арр	endixes		49



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forger or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 5 of 49

2 Test Summary

2.1 NR Band n5/ NR Band n26(824~849 MHz)

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §22.913(a)(5)	FCC: ERP ≤ 7 W	Section 1 of Appendix B.22&B.25	Pass
Peak-Average Ratio	§22.913(d)	Limit≤13 dB	Section 2 of Appendix B.22&B.25	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.22&B.25	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.22&B.25	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.	Section 5 of Appendix B.22&B.25	Pass
Spurious Emission at Antenna Terminals	§2.1051, §22.917(a)	FCC: ≤ -13 dBm/100 kHz, from 9 kHz to 10th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B.22&B.25	Pass
Field Strength of Spurious Radiation	§2.1053, §22.917(a)	FCC: ≤ -13 dBm/100 kHz.	Section 7 of Appendix B.22&B.25	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §22.355	≤ ±2.5ppm.	Section 8 of Appendix B.22&B.25	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Conditions/Terms-and-Conditions</u>, Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawill and offenders may be prosecuted to the fullest extent of the law Unless otherwise stated the retention: To check the authenticity of testing inspection report's certificate, please contact us at telephone: (86-75) 8307 1443, or email: O Doccheck@ns com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 6 of 49

2.2 NR Band n7/NR Band n38/NR Band n41

SG

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective		nequilements		veruict
(Isotropic) Radiated Power Output Data	§2.1046, §27.50(h)(2)	EIRP ≤ 2W	Section 1 of Appendix B.23&B.27&B.28	Pass
Peak-Average Ratio		≤13 dB	Section 2 of Appendix B.23&B.27&B.28	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.23&B.27&B.28	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.23&B.27&B.28	Pass
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, wdhere 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 that 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.	Section 5 of Appendix B.23&B.27&B.28	Pass
Spurious Emission at Antenna Terminals	§2.1051, §27.53(m)	25 dBm/ 1 MHz 9 kHz 9 5 MHz XMHz 10 th harmonics X=Max {6MHz, EBW}	Section 6 of Appendix B.23&B.27&B.28	Pass
Field Strength of Spurious Radiation	§2.1053, §27.53(m)	9 kHz 95 MHz XMHz 10 th harmonics X=Max {6MHz, EBW}	Section 7 of Appendix B.23&B.27&B.28	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §27.54	Within authorized bands of operation/frequency block.	Section 8 of Appendix B.23&B.27&B.28	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forger or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 7 of 49

2.3 NR Band n2

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §24.232(c)	EIRP ≤ 2 W	Section 1 of Appendix B.21	Pass
Peak-Average Ratio	§24.232(d)	Limit≤13 dB	Section 2 of Appendix B.21	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.21	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.21	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.	Section 5 of Appendix B.21	Pass
Spurious Emission at Antenna Terminals	§2.1051, §24.238(a)	≤ -13 dBm/1 MHz, from 9 kHz to 10 th harmonics but outside authorized operating frequency ranges.	Section 6 of Appendix B.21	Pass
Field Strength of Spurious Radiation	§2.1053, §24.238(a)	≤ -13 dBm/1 MHz.	Section 7 of Appendix B.21	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §24.235	Within authorized bands of operation/frequency block.	Section 8 of Appendix B.21	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and Juriddiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 8 of 49

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Transmitter Conducted Power Output	§2.1046, §90.635(b)	< 100 W.	Section 1 of Appendix B.24	Pass
Peak-Average Ratio		Limit≤13 dB	Section 2 of Appendix B.24	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.24	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.24	Pass
Emission Mask	§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 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.24	Pass
Spurious Emission at Antenna Terminals	§2.1051, §90.691	< 43 + 10Log10(P[Watts]) for all out-of- band emissions	Section 6 of Appendix B.24	Pass
Field Strength of Spurious Radiation	§2.1053, §90.691	< 43 + 10Log10(P[Watts]) for all out-of- band emissions	Section 7 of Appendix B.24	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §90.213	Within authorized bands of operation/frequency block.	Section 8 of Appendix B.24	Pass

2.4 NR Band n26(814~824 MHz)

SG



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forger or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 9 of 49

2.5 NR Band n66

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(d)(4)	EIRP ≤ 1 W	Section 1 of Appendix B.29	Pass
Peak-Average Ratio	§27.50(d)(5)	Limit≤13 dB	Section 2 of Appendix B.29	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.29	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.29	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.	Section 5 of Appendix B.29	Pass
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.29	Pass
Field Strength of Spurious Radiation	§2.1053, §27.53(h)	≤ -13 dBm/1 MHz.	Section 7 of Appendix B.29	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §27.54	Within authorized bands of operation/frequency block.	Section 8 of Appendix B.29	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forger or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 10 of 49

2.6 NR Band n77/ NR Band n78

3700-3980MHz:

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(j)(3)	EIRP ≤ 1W	Section 1 of Appendix B.31&B.33	Pass
Peak-Average Ratio		≤13 dB	Section 2 of Appendix B.31&B.33	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.31&B.33	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.31&B.33	Pass
Band Edges Compliance	§2.1051, §27.53(l)(2)	 (2) For mobile operations in the 3700- 3980 MHz band, the conducted power of any emission outside the licensee's authorized bandwidth shall not exceed - 13 dBm/MHz. Compliance with this paragraph (I)(2) is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 megahertz bands immediately outside and adjacent to the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be either one percent of the emission of the transmitter or 350 kHz. In the bands between 1 and 5 MHz removed from the licensee's frequency block, the minimum resolution bandwidth for the measurement shall be 500 kHz. 	Section 5 of Appendix B.31&B.33	Pass
Spurious Emission at Antenna Terminals	§2.1051, §27.53(l)(2)	not exceed -13 dBm/MHz.	Section 6 of Appendix B.31&B.33	Pass
Field Strength of Spurious Radiation	§2.1053, §27.53(l)(2)	not exceed -13 dBm/MHz	Section 7 of Appendix B.31&B.33	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(2) §27.54	Within authorized bands of operation/frequency block.	Section 8 of Appendix B.31&B.33	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-enc-Comment.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of fhis document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company hay no unathorized alteration, forgery or faislication of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report referonly to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 11 of 49

3450-3550MHz:

Test Item	FCC Rule No.	Requirements	Test Result	Verdict
Effective (Isotropic) Radiated Power Output Data	§2.1046, §27.50(k)(3)	EIRP ≤ 30dBm	Section 1 of Appendix B.30&B.32	Pass
Peak-Average Ratio	§27.50(k)(4)	FCC: Limit≤13 dB	Section 2 of Appendix B.30&B.32	Pass
Modulation Characteristics	§2.1047	Digital modulation	Section 3 of Appendix B.30&B.32	Pass
Bandwidth	§2.1049	OBW: No limit. EBW: No limit.	Section 4 of Appendix B.30&B.32	Pass
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.30&B.32	Pass
Spurious Emission at Antenna Terminals	§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 6 of Appendix B.30&B.32	Pass
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.30&B.32	Pass
Frequency Stability	§2.1055(a)(1)(b) §2.1055(d)(1)(2) §27.54	Within authorized bands of operation/ frequency block.	Section 8 of Appendix B.30&B.32	Pass



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forger or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 12 of 49

3 General Information

3.1 Client Information

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

3.2 Test Location

Company:	SGS-CSTC Standards Technical Services (Suzhou) Co., Ltd.
Address:	South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone
Post code:	215000
Test engineer:	Levi Li, King-p Li

3.3 Test Facility

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

A2LA (Certificate No. 6336.01)

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. is accredited by the American Association for Laboratory Accreditation(A2LA). Certificate No. 6336.01.

Innovation, Science and Economic Development Canada

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized by ISED as an accredited testing laboratory.

CAB identifier: CN0120.

IC#: 27594.

FCC – Designation Number: CN1312

SGS-CSTC STANDARDS TECHNICAL SERVICES (SUZHOU) CO., LTD. has been recognized as an accredited testing laboratory.

Designation Number: CN1312.

Test Firm Registration Number: 717327



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions, for electronic format documents, advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and their document is and/set that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is undawill and offenders may be prosecuted to the fullulest extend for 30 days only. Attention: To check the authenticity of testing finspection report & certificate, please contact us at telephone: (86-75) 8307 1443,

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pliot Free Trade Zone 215000 中国 - 苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区海胜路1号的6号厂房南部 解编: 215000

Report No.: SEWM2305000177RG02 Rev.: 02 Page: 13 of 49

3.4 General Description of EUT

SG

EUT Description:	Mobile Phone	Mobile Phone				
Model No.:	V2248	V2248				
Trade Mark:	vivo					
Hardware Version:	MP_0.1					
Software Version:	PD2279F_EX_A_	13.0.2.6	.W30			
	RF Conducted	8602	Sample1: 860233069986053(IMEI1) 860233069986046(IMEI2)			
IMEI:	RSE	Sample1: 860233069986350(IMEI1) 860233069986343(IMEI2) Sample2: 860233069986798(IMEI1) 860233069986798(IMEI2)				
Antenna Type:	PIFA Antenna					
	NR Band n2:	-3.90	Bi(Ant11);-1.2dBi(Ant13)			
	NR Band n5:	-4.50	Bi(Ant13);-5.8dBi(Ant31)			
	NR Band n7:	-3.40	-3.4dBi(Ant11);2.3dBi(Ant31)			
	NR Band n26:	-4.50	Bi(Ant13);-5.8dBi(Ant31)			
	NR Band n38:	-3.40	Bi(Ant11);2.3dBi(Ant31)			
Antenna Gain:	NR Band n41:	-3.80	Bi(Ant11);2.3dBi(Ant31)			
	NR Band n66:	-3.50	Bi(Ant11);-2.2dBi(Ant13)			
	NR Band n77:	1.7dl	Bi(Ant11);0dBi(Ant12);2dE	Bi(Ant21);1.7dBi(Ant23)		
	NR Band n78:	1.7dl	Bi(Ant11);0dBi(Ant12);2dE	3i(Ant21);1.7dBi(Ant23)		
	Note: The antenna gain are derived from the gain information report prov manufacturer.					
RF Cable:	0.8dB(Below 1GH	GHz) 1.2dB(1.0~2.4GHz) 1.5dB(2.4~3.4GHz)				
Remark: As above information is suitability, reliability or/ar			applicant. SGS is not lial	ble to the accuracy,		



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and Juriddiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02 Rev.: 02 Page: 14 of 49

3.5 Test Mode

Test Mode	Test Modes Description
NR/TM1	NR system, DFT-s-Pi/2-BPSK modulation
NR/TM2	NR system, DFT-s-QPSK modulation
NR/TM3	NR system, DFT-s-16QAM modulation
NR/TM4	NR system, DFT-s-64QAM modulation
NR/TM5	NR system, DFT-s-256QAM modulation
NR/TM6	NR system, CP-QPSK modulation
NR/TM7	NR system, CP-16QAM modulation
NR/TM8	NR system, CP-64QAM modulation
NR/TM9	NR system, CP-256QAM modulation
Remark: The test mode(s)	are selected according to relevant radio technology specifications.

3.6 Test Environment

Environment Parameter	101.0 kPa Selected Values During Tests			
Relative Humidity	44-46 9	% RH Ambient		
Value	Temperature(°C)	Voltage(V)		
NTNV	22~23	3.89		
LTLV	-30	3.6		
LTHV	-30	4.48		
HTLV	50	3.6		
HTHV	50	4.48		
Remark:				
NV: Normal Voltage LV: Lo	w Extreme Test Voltage	HV: High Extreme Test Voltage		
NT: Normal Temperature LT: Lo	w Extreme Test Temperature	HT: High Extreme Test Temperature		

3.7 Description of Support Units

The EUT has been tested as an independent unit.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Conditions/Terms-en-Conditions</u>, Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and colligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alleration, forgery or falsification of the content or appearance of this document is unlawill and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the retention: To check the authenticity of testing inspection report's certificate, please contact us at lelephone: (86-75) 8307 1443, or email: O Doccheck@ns com South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02 Rev.: 02 Page: 15 of 49

3.8 Technical Specification

SG

Characteristics	Description						
Radio System Type	🖾 SA 🖾 NSA	🖂 SA 🖾 NSA					
	Band	ТХ		RX			
	NR Band n2	1850 to 1910 MHz		1930 to 1990 MHz			
	NR Band n5	824 to 849 MHz		869 to 894 N	1Hz		
	NR Band n7	2500 to 2570	MHz	2620 to 2690) MHz		
	NR Band n26 (814 to 824 MHz)	814 to 824MH	Ηz	859 to 869 N	1Hz		
	NR Band n26 (824 to 849 MHz)	824 to 849 M	Hz	869 to 894 N	1Hz		
	NR Band n38	2570 to 2620	MHz	2570 to 2620) MHz		
Supported Frequency	NR Band n41	2496 to 2690	MHz	2496 to 2690) MHz		
	NR Band n66	1710 to 1780	MHz	2110 to 2180) MHz		
	NR Band n77*	3700 to 3980	MHz	3700 to 3980) MHz		
Range		3450 to 3550	3450 to 3550 MHz) MHz		
	NR Band n78*	3700 to 3800 MHz		3700 to 3800 MHz			
	INR Danu 1170	3450 to 3550 MHz		3450 to 3550 MHz			
	ENDC:						
	DC_7A_n5A;DC_2A_n7A; DC_5A_n7A; DC_66A_n7A;DC_7A_n26A;						
	DC_4A_n38A; DC_66A_n38A; DC_4A_n41A; DC_66A_n41A;DC_2A_n66A;						
	DC_5A_n66A; DC_7A_n66A;DC_2A_n78A; DC_4A_n78A; DC_5A_n78A;						
	DC_7A_n78A; DC_38A_n78A; DC_41A_n78A; DC_66A_n78A;						
	ENDC only test RSE, report only show worst mode.						
	Note*: Both NR Band n77 MHz to 3550 MHz, the items of Power.	and NR Band r			•		
		SCS 15kHz:					
	ND Dand nO	⊠5 MHz	⊠10 MHz	⊠15 MHz	20 MHz		
Supported Channel Bandwidth	NR Band n2	SCS 30kHz:					
		⊠10 MHz	🖾 15 MHz	20 MHz			
		SCS 15kHz:					
Sanamath	ND Bood 75	⊠5 MHz	⊠10 MHz	⊠15 MHz	20 MHz		
	NR Band n5	SCS 30kHz:					
		⊠10 MHz	⊠15 MHz	⊠20 MHz			
	NR Band n7	SCS 15kHz:					



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and Juriddiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000

中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

		Report Rev.: Page:	No.: SEWM 02 16 of 4	2305000177R(49
	⊠5 MHz	⊠10 MHz	⊠15 MHz	20 MHz
	SCS 30kHz:			
	10 MHz	⊠15 MHz	20 MHz	
	SCS 15kHz:			
	⊠5 MHz	⊠10 MHz	⊠15 MHz	20 MHz
NR Band n26	SCS 30kHz:			
	⊠10 MHz	🖾 15 MHz	20 MHz	
	SCS 15kHz:			
	⊠5 MHz	⊠10 MHz	🖾 15 MHz	20 MHz
NR Band n38	SCS 30kHz:			
	10 MHz	🖾 15 MHz	20 MHz	
	SCS 15kHz:			
	10 MHz	🖾 15 MHz	20 MHz	30 MHz
	⊠40 MHz	⊠50 MHz		
NR Band n41	SCS 30kHz:			
	10 MHz	🖾 15 MHz	20 MHz	30 MHz
	⊠40 MHz	⊠50 MHz	⊠60 MHz	⊠70 MHz
	80 MHz	⊠90 MHz	⊠100 MHz	
	SCS 15kHz:			
	⊠5 MHz	⊠10 MHz	🖾 15 MHz	20 MHz
ND Dand #60	25 MHz	⊠30 MHz	⊠40 MHz	
NR Band n66	SCS 30kHz			
	⊠10 MHz	🖾 15 MHz	20 MHz	25 MHz
	30 MHz	⊠40 MHz		
	SCS 15kHz:			
	⊠10 MHz	⊠15 MHz	20 MHz	⊠40 MHz
	⊠50 MHz			
NR Band n77	SCS 30kHz			
	⊠10 MHz	🖾 15 MHz	⊠20 MHz	⊠40 MHz
	⊠50 MHz	⊠60 MHz	⊠70 MHz	🖾 80 MHz
	⊠90 MHz	⊠100 MHz		
	SCS 15kHz:			
ND Dand n70	⊠10 MHz	🖾 15 MHz	20 MHz	25 MHz
NR Band n78	30 MHz	⊠40 MHz	⊠50 MHz	
	SCS 30kHz:			



SG

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx, Attention is drawn to the limitation of liability, indemnification and jurisdictor issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's soil responsibility is to its Client and this document only and within the limits of transaction from exercising all their rights and obligations under the transaction document. This document on the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN_Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000



	Report No.:		No.: SEWM2	SEWM2305000177R0	
		Rev.:	02		
		Page:	17 of 4	9	_
	⊠10 MHz	⊠15 MHz	⊠20 MHz	⊠25 MHz	
	⊠30 MHz	⊠40 MHz	⊠50 MHz	⊠60 MHz	
	⊠70 MHz	⊠80 MHz	⊠90 MHz	⊠100 MHz	



中国•苏州•中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

测专用章 Testing Services

Member of the SGS Group (SGS SA)

t (86-512) 62992980

sgs.china@sgs.com

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 18 of 49

3.9 Test Frequencies

3.9.1 Reference test frequencies for NR operating band n2 3.9.1.1 Test frequencies for NR operating band n2 and SCS 15 kHz

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	1932.5	386500	
	Downlink	Mid	1960	392000	15
5		High	1987.5	397500	
5		Low	1852.5	370500	
	Uplink	Mid	1880	376000	-
		High	1907.5	381500	
		Low	1935	387000	
	Downlink	Mid	1960	392000	15
10		High	1985	397000	
10	Uplink	Low	1855	371000	
		Mid	1880	376000	-
		High	1905	381000	
		Low	1937.5	387500	
	Downlink	Mid	1960	392000	15
15		High	1982.5	396500	
15		Low	1857.5	371500	
	Uplink	Mid	1880	376000	-
		High	1902.5	380500	
		Low	1940	388000	
	Downlink	Mid	1960	392000	15
00		High	1980	396000	1
20		Low	1860	372000	
	Uplink	Mid	1880	376000	-
		High	1900	380000	

3.9.1.2 Test frequencies for NR operating band n2 and SCS 30 kHz

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]		
	Downlink	Low	1935	387000			
		Mid	1960	392000	30		
10		High	1985	397000			
10		Low	1855	371000			
	Uplink	Mid	1880	376000	-		
		High	1905	381000			
	Downlink	Low	1937.5	387500			
		Mid	1960	392000	30		
15		High	1982.5	396500			
15		Low	1857.5	371500			
	Uplink	Mid	1880	376000	-		
		High	1902.5	380500			
		Low	1940	388000			
	Downlink	Mid	1960	392000	30		
20		High	1980	396000			
		Low	1860	372000			
	Uplink	Mid	1880	376000	-		
		High	1900	380000			



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.gs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.gs.com/en/Terms-and-Conditions.Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document coment cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the retention: To check the authenticity of testing (inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: C0 Doccheck@ss.com

South of No. 6 Plant, No. 1, Runshang Road, Suchou Industrial Park, Suchou Area, China (Jiangsu) Pitot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 彰编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 19 of 49

3.9.2 Reference test frequencies for NR operating band n5

S

3.9.2.1 Test frequencies for NR operating band n5 and SCS 15 kHz

CBW [MHz]	Range)	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	871.5	174300	
	Downlink	Mid	881.5	176300	15
5 -		High	891.5	178300	
5		Low	826.5	165300	
	Uplink	Mid	836.5	167300	-
		High	846.5	169300	
		Low	874	174800	
	Downlink	Mid	881.5	176300	15
10		High	889	177800	1
10		Low	829	165800	
	Uplink	Mid	836.5	167300	-
		High	844	168800	1
		Low	876.5	175300	
	Downlink	Mid	881.5	176300	15
15		High	886.5	177300	
15		Low	831.5	166300	
	Uplink	Mid	836.5	167300	-
		High	841.5	168300]
		Low	879	175800	
	Downlink	Mid	881.5	176300	15
20		High	884	176800	
20		Low	834	166800	
	Uplink	Mid	836.5	167300	-
	•	High	839	167800	

3.9.2.2 Test frequencies for NR operating band n5 and SCS 30 kHz

Bandwidth [MHz]	Range	•	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	874	174800	
	Downlink	Mid	881.5	176300	15
10		High	889	177800	
10		Low	829	165800	
	Uplink	Mid	836.5	167300	-
		High	844	168800	
		Low	876.5	175300	
	Downlink	Mid	881.5	176300	15
15		High	886.5	177300	
15		Low	831.5	166300	
	Uplink	Mid	836.5	167300	-
		High	841.5	168300	
		Low	879	175800	
	Downlink	Mid	881.5	176300	15
00		High	884	176800	
20		Low	834	166800	
	Uplink	Mid	836.5	167300	
	-	High	839	167800	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, Indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refor rolly to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CM-Doccheck@ses.com

Growth No. Resolve Content Concentration 2015 (Subtour Industrial Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路(号約6号厂店南部 邮编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 20 of 49

3.9.3 Reference test frequencies for NR operating band n7 3.9.3.1 Test frequencies for NB operating band n7 and SCS 15 kHz

S

3.9.3.1 Test frequencies for NR operating band n7 and SCS 15 kHz								
Bandwidth [MHz]	Rang	е	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]			
		Low	2622.5	524500				
	Downlink	Mid	2655	531000	15			
5		High	2687.5	537500				
5		Low	2502.5	500500				
	Uplink	Mid	2535	507000				
		High	2567.5	513500				
		Low	2625	525000				
	Downlink	Mid	2655	531000	15			
10		High	2685	537000				
10		Low	2505	501000				
	Uplink	Mid	2535	507000				
		High	2565	513000				
		Low	2627.5	525500				
	Downlink	Mid	2655	531000	15			
15 -		High	2682.5	536500				
15		Low	2507.5	501500				
	Uplink	Mid	2535	507000				
		High	2562.5	512500				
		Low	2630	526000				
	Downlink	Mid	2655	531000	15			
20		High	2680	536000				
20 –		Low	2510	502000				
	Uplink	Mid	2535	507000				
		High	2560	512000				

3.9.3.2 Test frequencies for NR operating band n7 and SCS 30 kHz

Bandwidth [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	2625	525000	
	Downlink	Mid	2655	531000	15
10		High	2685	537000	
10		Low	2505	501000	
	Uplink	Mid	2535	507000	-
		High	2565	513000	
	Downlink	Low	2627.5	525500	
		Mid	2655	531000	15
15		High	2682.5	536500	
15		Low	2507.5	501500	
	Uplink	Mid	2535	507000	-
		High	2562.5	512500	
		Low	2630	526000	
	Downlink	Mid	2655	531000	15
20		High	2680	536000	
20		Low	2510	502000	-
	Uplink	Mid	2535	507000	
		High	2560	512000	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information conly and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CN.Doccheck@ass.com"

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

Rev.: 02

Page: 21 of 49

3.9.4 Reference test frequencies for NR operating band n26

3.9.4.1 Test frequencies for NR operating band n26 and SCS 15 kHz

814-824:

001 010.

S

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	861.5	172300	
	Downlink	Mid	864	172800	15
5 -		High	866.5	173300	
5		Low	816.5	163300	
	Uplink	Mid	819	163800	-
		High	821.5	164300	
		Low	/	/	
	Downlink	Mid	864	172800	15
10		High	/	/	
10	10	Low	/	/	
	Uplink	Mid	819	163800	-
		High	/	/	

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	871.5	174300	
	Downlink	Mid	881.5	176300	15
F		High	891.5	178300	
5		Low	826.5	165300	
	Uplink	Mid	836.5	167300	-
		High	846.5	169300	
		Low	874	174800	
	Downlink	Mid	881.5	176300	15
10		High	889	177800	
10	10	Low	829	165800	
	Uplink	Mid	836.5	167300	-
		High	844	168800	
		Low	876.5	175300	
	Downlink	Mid	881.5	176300	15
15		High	886.5	177300	
15		Low	831.5	166300	
	Uplink	Mid	836.5	167300	-
		High	841.5	168300	
		Low	879	175800	
	Downlink	Mid	881.5	176300	15
00		High	884	176800	
20		Low	834	166800	
	Uplink	Mid	836.5	167300	-
	•	High	839	167800	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of clients' instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or faisfication of the content or appearance of this document for advison, in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@ass.com")

of entral of the section of the se

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 22 of 49

3.9.4.2 Test frequencies for NR operating band n26 and SCS 30 kHz

814-824:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	861.5	172300	
	Downlink	Mid	864	172800	15
5		High	866.5	173300	
5	5 Uplink	Low	816.5	163300	
		Mid	819	163800	-
	•	High	821.5	164300	
		Low	/	/	
	Downlink	Mid	864	172800	15
10		High	/	/	
10	10 Uplink	Low	/	/	
		Mid	819	163800	-
		High	/	/]

824-849:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	871.5	174300	
	Downlink	Mid	881.5	176300	15
5 -		High	891.5	178300	
5		Low	826.5	165300	
	Uplink	Mid	836.5	167300	-
		High	846.5	169300	
		Low	874	174800	
	Downlink	Mid	881.5	176300	15
10		High	889	177800	
10	10	Low	829	165800	
	Uplink	Mid	836.5	167300	-
	·	High	844	168800	
		Low	876.5	175300	
	Downlink	Mid	881.5	176300	15
15		High	886.5	177300	
15		Low	831.5	166300	
	Uplink	Mid	836.5	167300	-
		High	841.5	168300	
		Low	879	175800	
	Downlink	Mid	881.5	176300	15
20		High	884	176800]
20		Low	834	166800	
	Uplink	Mid	836.5	167300	1 -
	•	High	839	167800	7



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information conly and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 83071443, or email: CN.Doccheck@ass.com"

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 23 of 49

3.9.5 Reference test frequencies for NR operating band n38 3.9.5.1 Test frequencies for NR operating band n38 and SCS 15 kHz

S

3.3.3.1 Test frequencies for the operating band has and 303 13 kHz							
Bandwidth [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]		
	Downlink	Low	2572.5	514500	15		
5	&	Mid	2592.5	518500	15		
	Uplink	High	2617.5	523500			
	Downlink	Low	2575	515000	20		
10	&	Mid	2595	519000	30		
	Uplink	High	2615	523000			
	Downlink	Low	2577.5	515500	30		
15	&	Mid	2595	519000	30		
	Uplink	High	2612.5	522500			
	Downlink	Low	2580	516000			
20	&	Mid	2595	519000	30		
	Uplink	High	2610	522000			

3.9.5.2 Test frequencies for NR operating band n38 and SCS 30 kHz

Bandwidth [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	2575	515000	
10	&	Mid	2595	519000	30
	Uplink	High	2615	523000	
	Downlink	Low	2577.5	515500	
15	&	Mid	2595	519000	30
	Uplink	High	2612.5	522500	
	Downlink	Low	2580	516000	
20	&	Mid	2595	519000	30
	Uplink	High	2610	522000	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com/en/Terms-and-Conditions.aspx</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Condita</u>

South of No. 6 Plant, No. 1, Runsheing Road, Suchou Industrial Park, Suchou Area, China (Liangsu) Pilot Free Trade Zone 215000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 24 of 49

3.9.6 Reference test frequencies for NR operating band n41

S

Bandwidth [MHz]	Ran	ge	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	2501.01	500202	
10	&	Mid	2593.005	518601	15
	Uplink	High	2685	537000	
	Downlink	Low	2503.5	500700	
15	&	Mid	2593.005	518601	15
	Uplink	High	2682.495	536499	
	Downlink	Low	2506.005	501201	
20	&	Mid	2593.005	518601	15
	Uplink	High	2679.99	535998	
	Downlink	Low	2511	502200	
30	&	Mid	2593.005	518601	15
	Uplink	High	2674.995	534999	
	Downlink	Low	2516.01	503202	
40	&	Mid	2593.005	518601	15
	Uplink	High	2670	534000	
	Downlink	Low	2521.005	504201	
50	&	Mid	2593.005	518601	15
	Uplink	High	2664.99	532998	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and Juriddiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falisfication of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 25 of 49

3.9.6.2 Test frequencies for NR operating band n41 and SCS 30 kHz

SG

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	2501.01	500202	
10	&	Mid	2592.99	518598	30
	Uplink	High	2685	537000	
	Downlink	Low	2503.5	500700	
15	&	Mid	2592.99	518598	30
	Uplink	High	2682.48	536496	
	Downlink	Low	2506.02	501204	
20	&	Mid	2592.99	518598	30
	Uplink	High	2670	534000	
	Downlink	Low	2511	502200	
30	&	Mid	2592.99	518598	30
	Uplink	High	2675	535000	
	Downlink	Low	2516.01	503202	
40	&	Mid	2592.99	518598	30
	Uplink	High	2670	534000	
	Downlink	Low	2521.02	504204	
50	&	Mid	2592.99	518598	30
	Uplink	High	2664.99	532998	
	Downlink	Low	2526	505200	
60	&	Mid	2592.99	518598	30
	Uplink	High	2659.98	531996	
	Downlink	Low	2531	506200	
70	&	Mid	2592.29	518598	30
	Uplink	High	2655	531000	
	Downlink	Low	2536.02	507204	
80	&	Mid	2592.99	518598	30
	Uplink	High	2649.99	529998	
	Downlink	Low	2541	508200	
90	&	Mid	2592.99	518598	30
	Uplink	High	2644.98	528996]
	Downlink	Low	2546.01	509202	
100	&	Mid	2592.99	518598	30
	Uplink	High	2640	528000	1



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indermification and jurisdiction lissues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or faisification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)8307 1443, or email: CN.Doccheck@sgs.com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 26 of 49

3.9.7 Reference test frequencies for NR operating band n66

SG

CBW [MHz]	frequencies for NF Range	· · ·	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	2112.5	422500	
	Downlink	Mid	2145	429000	15
_		High	2177.5	435500	
5		Low	1712.5	342500	
	Uplink	Mid	1745	349000	-
	·	High	1777.5	355500	
		Low	2115	423000	
	Downlink	Mid	2145	429000	15
4.0		High	2175	435000	
10		Low	1715	343000	
	Uplink	Mid	1745	349000	_
		High	1775	355000	
		Low	2117.5	423500	
	Downlink	Mid	2145	429000	15
. –	Dominin	High	2172.5	434500	
15		Low	1717.5	343500	
	Uplink	Mid	1745	349000	
	opinit	High	1772.5	354500	
		Low	2120	424000	
	Downlink	Mid	2145	429000	15
		High	2170	434000	
20		Low	1720	344000	
	Uplink	Mid	1745	349000	_
	opinit	High	1770	354000	
		Low	2122.5	424500	
	Downlink	Mid	2145	429000	15
	Dominin	High	2167.5	433500	
25 -		Low	1722.5	344500	
	Uplink	Mid	1745	349000	
	opinit	High	1767.5	353500	_
		Low	2125	425000	
	Downlink	Mid	2145	429000	15
	Dominin	High	2165	433000	
30		Low	1725	345000	
	Uplink	Mid	1745	349000	
	opmin	High	1765	353000	1
		Low	2130	426000	
	Downlink	Mid	2145	429000	15
	DOWNIIIIK	High	2145	432000	15
40		· ·			
		Low	1730	346000	-
	Uplink	Mid	1745	349000	
		High	1760	352000	



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of clients' instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or faisfication of the content or appearance of this document for advison, in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@ass.com")

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 27 of 49

SG

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
		Low	2115	423000	
	Downlink	Mid	2145	429000	30
10		High	2175	435000	
10	Liplink	Low	1715	343000	
	Uplink	Mid	1745	349000	-
	-	High	1775	355000	
		Low	2117.5	423500	
	Downlink	Mid	2145	429000	30
15		High	2172.5	434500	
15		Low	1717.5	343500	
	Uplink	Mid	1745	349000	-
		High	1772.5	354500	
	Downlink	Low	2120	424000	
		Mid	2145	429000	30
20		High	2170	434000	
20	Uplink	Low	1720	344000	
		Mid	1745	349000	-
	·	High	1770	354000	
		Low	2122.5	424500	
	Downlink	Mid	2145	429000	30
25		High	2167.5	433500	
25		Low	1722.5	344500	
	Uplink	Mid	1745	349000	-
		High	1767.5	353500	
		Low	2125	425000	
	Downlink	Mid	2145	429000	30
30		High	2165	433000	
30		Low	1725	345000	
	Uplink	Mid	1745	349000] -
		High	1765	353000]
		Low	2130	426000	
	Downlink	Mid	2145	429000	30
40		High	2160	432000	7
40		Low	1730	346000	
	Uplink	Mid	1745	349000	1 -
	·	High	1760	352000	1



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-enc-Comment.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of fhis document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company hay no unathorized alteration, forgery or faislication of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report referonly to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

02

Rev.:

Page: 28 of 49

3.9.8 Reference test frequencies for NR operating band n77

3.9.8.1 Test frequencies for NR operating band n77 and SCS 15 kHz

3700-3980:

S

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3705	647000	
10	&	Mid	3840	656000	15
	Uplink	High	3975	665000	
	Downlink	Low	3707.52	647168	
15	&	Mid	3840	656000	15
	Uplink	High	3972.48	664832	
	Downlink	Low	3710.01	647334	
20	&	Mid	3840	656000	15
	Uplink	High	3969.99	664666	
	Downlink	Low	3720	648000	
40	&	Mid	3840	656000	15
	Uplink	High	3960	664000	
	Downlink	Low	3725.01	648334	
50	&	Mid	3840	656000	15
	Uplink	High	3954.99	663666]

3450-3550:					
CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3455.01	630334	
10	&	Mid	3500.01	633334	15
	Uplink	High	3545.01	636334	
	Downlink	Low	3457.5	630500	
15	&	Mid	3500.01	633334	15
	Uplink	High	3542.49	636166	
	Downlink	Low	3460.02	630668	
20	&	Mid	3500.01	633334	15
	Uplink	High	3540	636000	
	Downlink	Low	3470.01	631334	
40	&	Mid	3500.01	633334	15
	Uplink	High	3530.01	635334	7
50	Downlink & Uplink	Mid	3500.01	633334	15



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com/en/Terms-and-Conditions.aspx</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Condita</u>

Growth No. Resolve Content Concentration 2015 (Subtour Industrial Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路(号約6号厂店南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 29 of 49

3.9.8.2 Test frequencies for NR operating band n77 and SCS 30 kHz

3700-3980:

SG

CBW [MHz]	Range	•	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3705	647000	
10	&	Mid	3840	656000	30
	Uplink	High	3975	665000	
15	Downlink	Low	3707.52	647168	
	&	Mid	3840	656000	30
	Uplink	High	3972.48	664832	
	Downlink	Low	3710.01	647334	
20	&	Mid	3840	656000	30
	Uplink	High	3969.99	664666	
	Downlink	Low	3720	648000	30
40	&	Mid	3840	656000	
	Uplink	High	3960	664000	
	Downlink	Low	3725.01	648334	
50	&	Mid	3840	656000	
	Uplink	High	3954.99	663666	
	Downlink	Low	3730.02	648668	
60	&	Mid	3840	656000	30
	Uplink	High	3949.98	663332	
	Downlink	Low	3735	649000	
70	&	Mid	3840	656000	30
	Uplink	High	3945	663000	
	Downlink	Low	3740.01	649334	
80	&	Mid	3840	656000	30
	Uplink	High	3939.99	662666	
	Downlink	Low	3745.02	649668	
90	&	Mid	3840	656000	30
	Uplink	High	3934.98	662332	1
	Downlink	Low	3750	650000	
100	&	Mid	3840	656000	30
	Uplink	High	3930	662000	1



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-enocument.aspx. Attention is drawn to the limitation of liability, indermification and jurisdiction lissues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@sgs.com

Gound Wite OF Brank, No.1, Runsheng Road, Suzhou Indudará Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 30 of 49

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3455.01	630334	
10	&	Mid	3500.01	633334	30
	Uplink	High	3545.01	636334	
	Downlink	Low	3457.5	630500	
15	&	Mid	3500.01	633334	
	Uplink	High	3542.49	636166	
	Downlink	Low	3460.02	630668	
20	&	Mid	3500.01	633334	
	Uplink	High	3540	636000	
	Downlink	Low	3470.01	631334	
40	&	Mid	3500.01	633334	
	Uplink	High	3530.01	635334	
	Downlink	Low	3475.02	631668	
50	&	Mid	3500.01	633334	
	Uplink	High	3525	635000	
	Downlink	Low	3480	632000	
60	&	Mid	3500.01	633334	30
	Uplink	High	3519.99	634666	
	Downlink	Low	3485.01	632334	
70	&	Mid	3500.01	633334	30
	Uplink	High	3515.01	634334	
	Downlink	Low	3490.02	632668	
80	&	Mid	3500.01	633334	30
	Uplink	High	3510	634000	
ľ	Downlink	Low	3495	633000	
90	&	Mid	3500.01	633334	30
	Uplink	High	3504.99	633666	
ľ	Downlink	Low	\	\	
100	&	Mid	3500.01	633334	30
	Uplink	High	\	\	1



SG

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Document.aspx. Attention is drawn to the limitation of liability, indermification and jurisdiction lissues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or faisification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)8307 1443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02

Rev.: 02

Page: 31 of 49

3.9.9 Reference test frequencies for NR operating band n78

3.9.9.1 Test frequencies for NR operating band n78 and SCS 15 kHz

3700-3800:

S

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3705	647000	
10	&	Mid	3750	650000	15
	Uplink	High	3795	653000	
	Downlink	Low	3707.52	647168	
15	&	Mid	3750	650000	15
	Uplink	High	3792.48	652832	
	Downlink	Low	3710.01	647334	
20	&	Mid	3750	650000	15
	Uplink	High	3789.99	652666	
	Downlink	Low	3712.5	647500	
25	&	Mid	3840	656000	15
	Uplink	High	3967.5	664500	
	Downlink	Low	3715.02	647668	
30	&	Mid	3750	650000	15
	Uplink	High	3785.01	652334	
	Downlink	Low	3720	648000	
40	&	Mid	3750	650000	15
	Uplink	High	3780	652000	
	Downlink	Low	3725.01	648334	
50	&	Mid	3750	650000	15
	Uplink	High	3774.99	651666	

3450-3550:

CBW [MHz]	Range		Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3455.01	630334	
10	&	Mid	3500.01	633334	15
	Uplink	High	3545.01	636334	
	Downlink	Low	3457.5	630500	
15	&	Mid	3500.01	633334	15
	Uplink	High	3542.49	636166	
	Downlink	Low	3460.02	630668	15
20	&	Mid	3500.01	633334	
	Uplink	High	3540	636000	
	Downlink	Low	3462.51	630834	15
25	&	Mid	3500.01	633334	
	Uplink	High	3537.51	635834	
	Downlink	Low	3465	631000	
30	&	Mid	3500.01	633334	15
	Uplink	High	3534.99	635666	
	Downlink	Low	3470.01	631334	
40	&	Mid	3500.01	633334	15
	Uplink	High	3530.01	635334	1
	Downlink	Low	3475.02	631668	
50	&	Mid	3500.01	633334	15
	Uplink	High	3525	635000	1



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, Indemnification and jurisdiction issues defined therein. Any, holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of clients' instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or faisification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@ass.com

of entral of the section of the se

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 32 of 49

3.9.9.2 Test frequencies for NR operating band n78 and SCS 30 kHz

27	'nn	20	2 n n	۱.
- 37	UU	-38	วมน	12

SG

CBW [MHz]	Range	!	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3705	647000	
10	&	Mid	3750	650000	30
	Uplink	High	3795	653000	
	Downlink	Low	3707.52	647168	
15	&	Mid	3750	650000	30
	Uplink	High	3792.48	652832	
	Downlink	Low	3710.01	647334	
20	&	Mid	3750	650000	
	Uplink	High	3789.99	652666	
	Downlink	Low	3712.5	647500	
25	&	Mid	3750	650000	30
	Uplink	High	3787.5	652500	
	Downlink	Low	3715.02	647668	30
30	&	Mid	3750	650000	
	Uplink	High	3785.01	652334	
	Downlink	Low	3720	648000	30
40	&	Mid	3750	650000	
	Uplink	High	3780	652000	
	Downlink	Low	3725.01	648334	30
50	&	Mid	3750	650000	
	Uplink	High	3774.99	651666	
	Downlink	Low	3730.02	648668	
60	&	Mid	3750	650000	30
	Uplink	High	3769.98	651332	
	Downlink	Low	3735	649000	
70	&	Mid	3750	650000	30
	Uplink	High	3765	651000	
	Downlink	Low	3740.01	649334	
80	&	Mid	3750	650000	30
	Uplink	High	3759.99	650666	
	Downlink	Low	3745.02	649668	
90	&	Mid	3750	650000	30
	Uplink	High	3754.98	650332	
	Downlink	Low	/	/	
100	&	Mid	3750	650000	30
	Uplink	High	/	/	1



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of clients' instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or faisfication of the content or appearance of this document for advison, in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@ass.com")

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 33 of 49

CBW [MHz]	Range	•	Carrier centre [MHz]	Carrier centre [ARFCN]	SS block SCS [kHz]
	Downlink	Low	3455.01	630334	
10	&	Mid	3500.01	633334	30
	Uplink	High	3545.01	636334	
	Downlink	Low	3457.5	630500	
15	&	Mid	3500.01	633334	30
	Uplink	High	3542.49	636166	
	Downlink	Low	3460.02	630668	30
20	&	Mid	3500.01	633334	
	Uplink	High	3540	636000	
	Downlink	Low	3462.51	630834	
25	&	Mid	3500.01	633334	30
	Uplink	High	353751	635834	
	Downlink	Low	3465	631000	30
30	&	Mid	3500.01	633334	
	Uplink	High	3534.99	635666	
	Downlink	Low	3470.01	631334	30
40	&	Mid	3500.01	633334	
	Uplink	High	3530.01	635334	
	Downlink	Low	3475.02	631668	30
50	&	Mid	3500.01	633334	
	Uplink	High	3525	635000	
	Downlink	Low	3480	632000	
60	&	Mid	3500.01	633334	30
	Uplink	High	3519.99	634666	1
	Downlink	Low	3485.01	632334	
70	&	Mid	3500.01	633334	30
	Uplink	High	3515.01	634334	
	Downlink	Low	3490.02	632668	
80	&	Mid	3500.01	633334	30
	Uplink	High	3510	634000	
	Downlink	Low	3495	633000	
90	&	Mid	3500.01	633334	30
	Uplink	High	3504.99	633666	
	Downlink	Low		\	
100	&	Mid	3500.01	633334	30
	Uplink	High	\	\	1



SG

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-enc-Comment.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of fhis document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company hay no unathorized alteration, forgery or faislication of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report referonly to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755)83071443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州・中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 34 of 49

4 Description of Tests

S

4.1 Conducted Output Power

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.2.1

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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawiful and offenders may be prosecuted to the fullest extent of the law Unless otherwise stated the results shown in the test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing finspection report & certificate, please contact us at telephone: (86-755) 8307 1443,

South of No. 6 Plant, No. 1, Runsheng Read, Stathou Industrial Park, Stathou Area, China (Jiangsu) Pitot Free Trade Zone 2150000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 35 of 49

4.2 Effective (Isotropic) Radiated Power of Transmitter

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.8.4 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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com/en/Terms-and-Conditions.aspx</u> and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Conditions</u>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document is unawfully and offenders may be prosecuted to the fullest extend to the law client of the isolation of the content or appearance of this document is unawfull and offenders may be prosecuted to the fullest extend to the law client of the law client of the sample(s) tested and such sample(s) tested and such sample(s) tested and such sample(s) testes client, press contact us at telephone: (86-75) 8307 1443, or email: CN Doccheck the authentic) of testing /inspection report & certificate, please contact us at telephone: (86-75) 8307 1443, or email: CN Doccheck the authentic) of testing /inspection report & certificate, please contact us at telephone: (86-75) 8307 1443, or email: CN Doccheck the authentic) of testing /inspection report & certificate, please contact us at telephone: (86-75) 8307 1443, or email: CN Doccheck the authentic) of testing /inspection report & certificate, please contact us at telephone: (86-75) 8307 1443, or email: CN Doccheck the sample(s) testing /inspection report & certificate, please contact us at telephone: (86-75) 8307 1443, or emails contact us at telephone: (86-75) 8307 1443, or emails contac

South of No. 6 Plant, No. 1, Runsheing Road, Suchou Industrial Park, Suchou Area, China (Liangsu) Pilot Free Trade Zone 215000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 36 of 49

4.3 Occupied Bandwidth

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 4.2 & 4.3

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

- 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
- 3. VBW ≥ 3 x RBW
- 4. Detector = Peak
- 5. Trace mode = max hold
- 6. 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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Courient.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawfull and offenders may be prosecuted to the fullast extend for 80 days only. Attention: To check the authenticity of testing /inspection report & certificate, please context us at telephone: (86-75) 8307 1443,

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pliot Free Trade Zone 215000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 37 of 49

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 peak or peak hold power.

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
- 5. Detector = RMS
- 6. Number of sweep points ≥ 2 x Span/RBW
- 7. Trace mode = trace average for continuous emissions, max hold for pulse emissions
- 8. Sweep time = auto couple
- 9. The trace was allowed to stabilize



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawfull and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing finspection report & certificate, please contact us at telephone: (86-755) 8307 1443,

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pliot Free Trade Zone 215000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 載编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 38 of 49

4.5 Spurious And Harmonic Emissions at Antenna Terminal

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 6.0

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 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

1. Start frequency was set to 9kHz and stop frequency was set to at least 10* the fundamental frequency(Separated into at least two plots per channel)

- 2. Detector = RMS
- 3. Trace mode = trace average for continuous emissinos, max hold for pulse emissions
- 4. Sweep time = auto couple
- 5. The trace was allowed to stabilize
- 6. Please see test notes below for RBW and VBW settings



www.sgsgroup.com.cn

t (86-512) 62992980

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 39 of 49

4.6 Peak-Average Ratio

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.7.2

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

- 1. The signal analyzer's CCDF measurement profile is enabled
- 2. 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
- 5. 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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at <u>http://www.sgs.com/en/Terms-and-Conditions.aspx</u> and, for electronic format documents, subject to Terms and Conditions of Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions</u>. For electronic Document as <u>http://www.sgs.com/en/Terms-and-Conditions</u>. For the Company subject to the full of the second therein. Any holder of this document is a divised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document is unlawful and offenders may be prosecuted to the fullest extend of the law. Unless otherwise stated the results shown in this test report feer only to the sample(s) tested and such sample(s) are relatined for 30 days only. Attention: <u>0.5 check the authenticity of testing finspection report & certificate, please contact us at telephone</u>: (86-755) 8307 1443,

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pliot Free Trade Zone 215000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 載编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 40 of 49

4.7 Field Strength of Spurious Radiation

Measurement Procedure: FCC KDB 971168 D01 V03r01 Section 5.8

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). Test the EUT in the lowest channel, the middle channel ,the Highest channel.
- 5). 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.
- Repeat above procedures until all frequencies measured was complete.
 E (dBμV/m) = Measured amplitude level (μV/m) + (Cable Loss (dB) + Antenna Factor (dB/m) AMP(dB))
 EIRP (dBm) = E (dBμV/m) + 20 log D 104.8; where D is the measurement distance in meters

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:
 - E (dB μ V/m) = Measured amplitude level (dB μ V) + (Cable Loss (dB) + Antenna Factor (dB/m) AMP(dB)) EIRP (dBm) = E (dB μ V/m) + 20 log D – 104.8; where D is the measurement distance in meters
- 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. At a measurement distance of 1 meter the limit line was increased by 20*LOG(3/1) = 9.54 dB.

Remark: Reference test setup 2

Remark:

1) The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier gain. The basic equation with a sample calculation is as follows:

Level = Reading Level + AF(dB/m) + Factor(dB)

AF = Antenna Factor(dB/m)

Factor = Cable Factor(dB) - Preamplifier gain (dB)

Margin = Limit(dBm) - Level(dBm)

2) Scan from 9kHz to 40GHz, The disturbance between 9KHz to 30MHz and 18GHz to 40GHz was very low, and the harmonics were the highest point could be found when testing, so only the harmonics

had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

3) All modes have been tested, but only the worst case data displayed in this report.

检验检测专用 资 Inspection & Testing S SGS-CSTC United Service Wireless Laborated Vechnical Service	Services E

Unless otherwise agreed in writing, this document is issued by the overleaf, available on request or accessible at <u>http://www.sgs.com/e</u> subject to Terms and Conditions for Electronic Documents at <u>http</u> . Attention is drawn to the limitation of ilability, indemnification and advised that information contained hereon reflects the Company's Client's instructions, if any. The Company's sole responsibility is ransaction from exercising all their rights and obligations under I except in full, without prior written approval of the Company. Any appearance of this document is unlawful and offenders may be prose results shown in this test report refer only to the sample(s) tested ano Attention: To check the authenticity of testing Jinspection repor	en/Terms-and-Conditio ://www.sgs.com/en/Ter jurisdiction issues def findings at the time o to its Client and this the transaction docum unauthorized alteration secuted to the fullest e such sample(s) are re	ns.aspx and, for electror ms-and-Conditions/Tern fined therein. Any holde f its intervention only ar document does not e> ents. This document c ion, forgery or falsificat extent of the law. Unless stained for 30 days only.	hic format documents, ns-e-Document.aspx. rr of this document is nd within the limits of conerate parties to a annot be reproduced ion of the content or otherwise stated the	
or email: CN.Doccheck@sgs.com				
South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone	215000	t (86-512) 62992980	www.sgsgroup.com.cn	
山园•苏州•山园(订茶)白山留易试验区苏州片区苏州工业园区海畔路1号约6号厂房南部 邮编。	215000	t (86-512) 62992980	sas.china@sas.com	

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 41 of 49

4.8 Frequency Stability / Temperature Variation

Measurement Procedure:

Frequency stability testing is performed in accordance with the guidelines of FCC KDB 971168 D01 V03r01 Section 9

The frequency stability of the transmitter is measured by:

- a.) **Temperature:** The temperature is varied from -30 ℃ to +50 ℃ in 10 ℃ 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:

- 1. 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



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawfull and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443,

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pliot Free Trade Zone 215000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

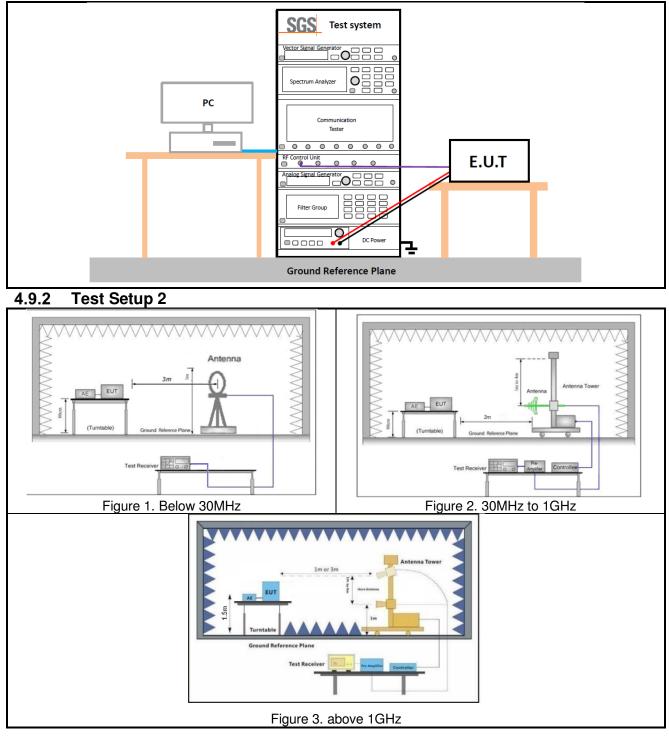
 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 42 of 49

4.9 Test Setups

4.9.1 Test Setup 1



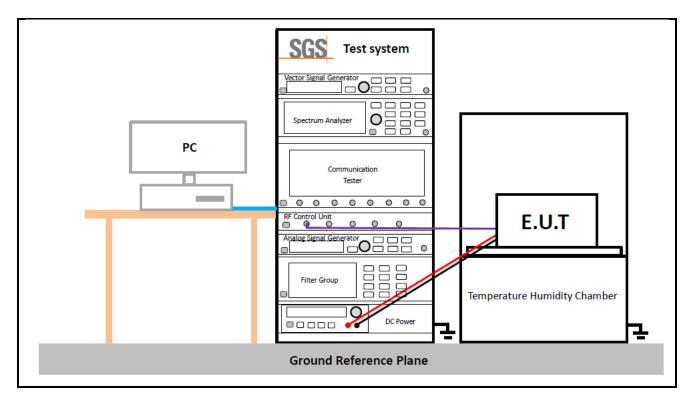


 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 43 of 49

4.9.3 Test Setup 3





Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at <u>http://www.sgs.com/en/Terms-and-Conditions/Terms-en-Conditions/Terms-en-Conditions</u>, Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and colligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawill and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the retention: To check the authenticity of testing inspection report's certificate, please contact us at lelephone: (86-75) 8307 1443, or email: O Doccheck@ns com

South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国•苏州•中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 44 of 49

4.10 Test Conditions

Transmit Output Power Data - Average Power, Total			
Test Case	Test Conditions		
Test Environment	Ambient Climate & Rated Voltage		
Test Setup	Test Setup 1		
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)		
Test Mode	NR/TM1; NR/TM2; NR/TM3; NR/TM4; NR/TM5		
	Peak-to-Average Ratio		
Test Case	Test Conditions		
Test Environment	Ambient Climate & Rated Voltage		
Test Setup	Test Setup 1		
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)		
Test Mode	NR/TM5; NR/TM9		
	Modulation Characteristics		
Test Case	Test Conditions		
Test Environment	Ambient Climate & Rated Voltage		
Test Setup	Test Setup 1		
RF Channels (TX)	M (M= middle channel)		
Test Mode	NR/TM1; NR/TM2; NR/TM3; NR/TM4; NR/TM5; NR/TM6; NR/TM7; NR/TM8; NR/TM9		
	Bandwidth - Occupied Bandwidth		
Test Case	Test Conditions		
Test Environment	Ambient Climate & Rated Voltage		
Test Setup	Test Setup 1		
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)		
Test Mode	NR/TM1; NR/TM2; NR/TM3; NR/TM4; NR/TM5; NR/TM6; NR/TM7; NR/TM8; NR/TM9		
	Bandwidth - Emission Bandwidth		
Test Case	Test Conditions		
Test Environment	Ambient Climate & Rated Voltage		
Test Setup	Test Setup 1		
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)		
Test Mode	NR/TM1; NR/TM2; NR/TM3; NR/TM4; NR/TM5; NR/TM6; NR/TM7; NR/TM8; NR/TM9		



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and third document fas document is unawing all their rights and obligations under the transaction form exercising all their rights and obligations under the transaction of the law. This document is unawing and the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unawing and their negrots and the time is to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN.Doccheck@ags.com

 Yandriv. Physical Robinski Ashubaka Bieleks Bieleks Fights
 \$215000
 t (86-512) 62992980
 www.segroup.com.cn

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 45 of 49

Band Edges Compliance				
Test Case Test Conditions				
Test Environment	Ambient Climate & Rated Voltage			
Test Setup	Test Setup 1			
RF Channels (TX)	L, H (L= low channel, H= high channel)			
Test Mode	NR/TM1; NR/TM6			
	Spurious Emission at Antenna Terminals			
Test Case	Test Conditions			
Test Environment	Ambient Climate & Rated Voltage			
Test Setup	Test Setup 1			
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)			
Test Mode	NR/TM1			
	Field Strength of Spurious Radiation			
Test Case	Test Conditions			
Test Environment	Ambient Climate & Rated Voltage			
Test Setup	Test Setup 2			
RF Channels (TX)	L, M, H (L= low channel, M= middle channel, H= high channel)			
Test Mode	NR/TM1 Remark: All bandwidth and modulation of NR have been pre tested, and only the worst results are reflected in the report.			
	Frequency Stability			
Test Case	Test Conditions			
Test Environment	 (1) -30 ℃ to +50 ℃ with step 10 ℃ at Rated Voltage (2) VL, VN and VH of Rated Voltage at Ambient Climate. 			
Test Setup	Test Setup 3			
RF Channels (TX)	M (M= middle channel)			
Test Mode	NR/TM1; NR/TM6 The report only show the bandwidth with the worst case.			



SG

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-and-Co

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 46 of 49

5 Main Test Instruments

SG

RF Test Equipment					
Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. date (yyyy/mm/dd)	Cal.Due date (yyyy/mm/dd)
Shielding Room	Brilliant-emc	N/A	SUWI-04-01-06	2021/05/08	2024/05/07
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-07	2023/02/06	2024/02/05
Signal Analyzer	ROHDE&SCHWARZ	FSV3030	SUWI-01-02-02	2023/05/11	2024/05/10
Measurement Software	Tonscend	JS1120-3 Test System V3.1.55	SUWI-02-09-09	NCR	NCR
Wideband Radio Communication Tester	ROHDE& SCHWARZ	CMW500	SUWI-01-16-05	2023/02/06	2024/02/05
DC Power Supply	HYELEC	HY3005B	SUWI-01-18-01	2023/02/06	2024/02/05
Temperature Chamber	ESPEC	SU-242	SUWI-01-13-01	2023/02/06	2024/02/05
Signal Analyzer	ROHDE& SCHWARZ	FSW43	SUWI-01-02-04	2023/05/11	2024/05/10
Wideband Radio Communication Test Ststion	Anritsu	MT8000A	SUWI-01-34-02	2022/09/16	2023/09/15



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-eDocument.aspx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forger or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-75) 8307 1443, or email: CN.Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

Report No.: SEWM2305000177RG02 Rev.: 02 Page: 47 of 49

RSE Test System					
Equipment	Manufacturer	Model No.	Inventory No.	Cal Date (yyyy/mm/dd)	Cal Due Date (yyyy/mm/dd)
Semi-Anechoic Chamber	Brilliant-emc	N/A	SUWI-04-02-01	2021/05/08	2024/05/07
Temperature and humidity meter	MingGao	TH101B	SUWI-01-01-05	2023/02/07	2024/02/06
Signal Analyzer	ROHDE&SCHWARZ	FSW43	SUWI-01-02-04	2023/05/11	2024/05/10
Signal Analyzer	KEYSIGHT	N9020A	SUWI-01-02-05	2022/11/23	2023/11/22
Test receiver	ROHDE&SCHWARZ	ESR7	SUWI-01-10-01	2023/02/08	2024/02/07
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	VULB 9163	SUWI-01-11-01	2023/05/13	2024/05/12
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9120D	SUWI-01-11-02	2023/05/13	2024/05/12
Receiving antenna	SCHWRZBECK MESS- ELEKTRONIK	BBHA 9170	SUWI-01-11-03	2023/05/12	2024/05/11
Active Loop Antenna	SCHWRZBECK MESS- ELEKTRONIK	FMZB 1519B	SUWI-01-21-01	2023/05/13	2024/05/12
Amplifier	Tonscend	TAP9K3G40	SUWI-01-14-01	2023/02/06	2024/02/05
Amplifier	Tonscend	TAP01018050	SUWI-01-14-02	2023/02/06	2024/02/05
Amplifier	Tonscend	TAP18040048	SUWI-01-14-03	2023/02/08	2024/02/07
Wideband Radio Communication Tester	Anritsu	MT8820C	SUWI-01-16-08	2023/02/06	2024/02/05
Measurement Software	Tonscend	JS32-RE V4.0.0.1	SUWI-02-09-04	NCR	NCR

Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and Juriddiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com South of No. 6 Plant, No. 1, Runsheng Road, Suzhou Industrial Park, Suzhou Area, China (Jiangsu) Pilot Free Trade Zone 215000



SG

中国•苏州•中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 48 of 49

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:

No.	Item	Measurement Uncertainty
1	Total RF power, conducted	±0.54dB
2	RF power density, conducted	±1.03dB
3	Spurious emissions, conducted	±0.54dB
4	Radio Frequency	±1.0 %
5	Duty Cycle	±0.37%
6	Occupied Bandwidth	±1.0 %
		± 3.13dB (9k -30MHz)
7	Radiated Emission	± 4.8dB (30M -1GHz)
		± 4.8dB (1GHz to 18 GHz)
		± 4.80dB (Above 18GHz)

Remark:

S

The U_{lab} (lab Uncertainty) is less than U_{cispr/ETSI} (CISPR/ETSI Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;

- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions, for electronic Documents, at http://www.sgs.com/en/Terms-and-Conditions, for Comment.sgx. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained herein reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction document. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is undawill and offenders may be prosecuted to the fullest extend of the association of the esample(s) tested and such sample(s) are relatined for 30 days only.

South of No. 6 Plant, No. 1, Runsheng Read, Stathou Industrial Park, Stathou Area, China (Jiangsu) Pilot Free Trade Zone 2150000 中国 • 苏州 • 中国(江苏)自由贸易试验区苏州片区苏州工业园区湖胜路1号的6号厂房南部 邮编: 215000

 Report No.:
 SEWM2305000177RG02

 Rev.:
 02

 Page:
 49 of 49

7 Appendixes

Appendix A.3	WWAN Setup Photos
Appendix B.21	NR Band n2
Appendix B.22	NR Band n5
Appendix B.23	NR Band n7
Appendix B.24	NR Band n26(814-824)
Appendix B.25	NR Band n26(824-849)
Appendix B.26	NR Band n38_15k
Appendix B.27	NR Band n38
Appendix B.28	NR Band n41
Appendix B.29	NR Band n66
Appendix B.30	NR Band n77(3450-3550)
Appendix B.31	NR Band n77(3700-3980)
Appendix B.32	NR Band n78(3450-3550)
Appendix B.33	NR Band n78(3700-3800)

---End of Report---



Unless otherwise agreed in writing, this document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions.aspx and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com/en/Terms-and-Conditions/Terms-e-Document.aspx. Attention is drawn to the limitation of liability, indemnification and Juriddiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document cannot be reproduced except in full, without prior written approval of the Company, any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only. Attention: To check the authenticity of testing /inspection report & certificate, please contact us at telephone: (86-755) 8307 1443, or email: CN_Doccheck@sgs.com

Grunn Hin Chr. Denter Read, Sachau Industria Park, Suchou Area, China (Jiangsu) Pilot Free Trade Zone 215000 中国・苏州 - 中国(江苏)自由贸易试验区苏州片区苏州工业园区润胜路1号的6号厂房南部 邮编: 215000