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TEST REPORT

FCC Part 27C & RSS-130 & RSS-139 & RSS-199

Report Reference No. : CTL2106018081-W07

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Product Name : Siyata SD7

Model/Type reference : SD7

List Model(s)..... : N/A

Trade Mark..... : Siyata

FCC ID..... : 2AOCX- SD7

Applicant's name : Siyata Mobile Inc.

Address of applicant : 1001 Lenoir St Suite A, Montreal, Quebec H4C 2Z6 Canada

Test Firm..... : Shenzhen CTL Testing Technology Co., Ltd.

Address of Test Firm : Floor 1-A, Baisha Technology Park, No.3011, Shahexi Road,
Nanshan District, Shenzhen, China 518055

Test specification..... :

FCC CFR Title 47 Part 2, Part 27

RSS-130 Issue 2

RSS-139 Issue 3

RSS-199 Issue 3

EIA/TIA 603-D: 2010

KDB 971168 D01

Standard

TRF Originator : Shenzhen CTL Testing Technology Co., Ltd.

Master TRF..... : Dated 2011-01

Date of receipt of test item : Jun. 25, 2021

Date of sampling..... : Jun. 25, 2021

Date of Test Date..... : Jun. 25, 2021-Jul. 09, 2021

Data of Issue..... : Jul. 12, 2021

Result..... : Pass

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TEST REPORT

Test Report No. : CTL2106018081-W07	Jul. 12, 2021 ----- Date of issue
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Equipment under Test : Siyata SD7

Sample No : CTL210601808-1-S001

Model /Type : SD7

Listed Models : N/A

Applicant : **Siyata Mobile Inc.**

Address : 1001 Lenoir St Suite A, Montreal, Quebec H4C 2Z6
Canada

Manufacturer : **Siyata Mobile Inc.**

Address : 1001 Lenoir St Suite A, Montreal, Quebec H4C 2Z6
Canada

Test result	Pass *
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*In the configuration tested, the EUT complied with the standards specified page 5.

The test results presented in this report relate only to the object tested.

This report shall not be reproduced, except in full, without the written approval of the issuing testing laboratory.

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1. SUMMARY

1.1. TEST STANDARDS

The tests were performed according to following standards:

[FCC Part 27](#) : MISCELLANEOUS WIRELESS COMMUNICATIONS SERVICES

[TIA/EIA 603 D June 2010](#):Land Mobile FM or PM Communications Equipment Measurement and Performance Standards.

[FCC Part 2](#): FREQUENCY ALLOCA-TIONS AND RADIO TREATY MAT-TERS; GENERAL RULES AND REG-ULATIONS

[RSS-Gen Issue 4](#): General Requirements for Compliance of Radio Apparatus

[RSS-130 Issue 2](#): Equipment Operating in the Frequency Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz

[RSS-139 Issue 3](#): Advanced Wireless Services Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz

[RSS-199](#): Broadband Radio Service (BRS) Equipment Operating in the Band 2500-2690 MHz

[SRSP-518](#): Technical Requirements in the Bands 617-652 MHz, 663-698 MHz, 698-756 MHz and 777-787 MHz Issue 2, February 2019

[SRSP-513](#): Technical Requirements for Advanced Wireless Services in the Bands 1710–1780 MHz and 2110–2180 MHz

[SRSP-517](#): Technical Requirements for Broadband Radio Service (BRS) in the Band 2500-2690 MHz

[KDB971168 D01: v03r01](#) MEASUREMENT GUIDANCE FOR CERTIFICATION OF LICENSED DIGITAL TRANSMITTERS

[ANSI C63.10: 2020](#): American National Standard for Testing Unlicensed Wireless Devices

[ANSI C63.4: 2014](#): –American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40GHz Range of 9 kHz to 40GHz

1.2. Test Description

Test Item	Section in CFR 47	Result
Effective (Isotropic) Radiated Power Output Data	§2.1046 §27.50(b)(10)(c)(10)(h)(2) RSS 130 4.6 RSS 139 6.5 RSS 199 4.4	Pass
Peak-to-Average Ratio	§2.1046 §27.50(d)(5) RSS 130 4.6 RSS 139 6.5 RSS 199 4.4	Pass
Modulation Characteristics	§2.1047	Pass
Bandwidth	§2.1049 RSS-GEN 6.7	Pass
Band Edges Compliance	§ 2.1051 §27.53(c)(f)(g)(m)(4) RSS 130 4.7 RSS 139 6.6	Pass
Conducted Spurious Emissions	§2.1051 §27.53(c)(f)(g)(m)(4)	Pass
Field Strength of Spurious Radiation	§2.1053 §27.53(c)(f)(g)(m)(4) RSS 130 4.7 RSS 139 6.6	Pass

Frequency stability	§2.1055 §27.54 RSS 130 4.5 RSS 139 6.4 RSS 199 4.3	Pass
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1.3. Test Facility

1.3.1 Address of the test laboratory

Shenzhen CTL Testing Technology Co., Ltd.

Floor 1-A, Baisha Technology Park, No. 3011, Shahexi Road, Nanshan, Shenzhen 518055 China

There is one 3m semi-anechoic chamber and two line conducted labs for final test. The Test Sites meet the requirements in documents ANSI C63.4 and CISPR 32/EN 55032 requirements.

1.3.2 Laboratory accreditation

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

CNAS-Lab Code: L7497

Shenzhen CTL Testing Technology Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

A2LA-Lab Cert. No. 4343.01

Shenzhen CTL Testing Technology Co., Ltd, EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

IC Registration No.: 9618B

CAB identifier: CN0041

The 3m alternate test site of Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements with Registration No.: 9618B on Jan. 22, 2019.

FCC-Registration No.: 399832

Designation No.: CN1216

Shenzhen CTL Testing Technology Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 399832, December 08, 2017.

1.4. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the Shenzhen CTL Testing Technology Co., Ltd. quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

Hereafter the best measurement capability for CTL laboratory is reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Emission	30~1000MHz	4.10dB	(1)
Radiated Emission	Above 1GHz	4.32dB	(1)
Conducted Disturbance	0.15~30MHz	3.20dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

2. GENERAL INFORMATION

2.1. Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Normal Temperature:	25°C
Relative Humidity:	55 %
Air Pressure:	101 kPa

2.2. General Description of EUT

Product Name:	Siyata SD7		
Model/Type reference:	SD7		
Power supply:	Adapter Model: HJ-0502000W2-US InputL:100-240V~50/60Hz0.3A Output:5V---2000mA DC 3.85V from battery		
Hardware version:	H128MB_V0.2		
Software version:	7RO2G27JUN1D		
LTE			
Mode:	WCDMA Band IV; LTE Band 4; LTE Band 5; LTE Band7; LTE Band12; LTE Band13; LTE Band41; LTE Band66; LTE Band71		
Modulation Type:	(WCDMA)QPSK; (LTE)QPSK 16QAM		
Operating Frequency Range(S)	Band	Tx(MHz)	Rx(MHz)
	WCDMA Band IV	1710~1755	2110~2155
	LTE Band 4	1710~1755	2110~2155
	LTE Band 7	2500~2570	2620~2690
	LTE Band 12	699~716	729~746
	LTE Band 13	777~787	746~756
	LTE Band 17	704~716	734~746
	LTE Band 41	2496~2690	2496~2690
	LTE Band 66	1710~1780	2110~2180
	LTE Band 71	663~698	617~652
Release Version:	Release 9		
Category:	Cat 4		
Antenna type:	PIFA Antenna		
Antenna gain:	WCDMA Band IV:0.37dBi LTE Band 4: 0.37dBi LTE Band 7:0.41dBi LTE Band 12: -0.37dBi LTE Band 13: -0.37dBi LTE Band 17: -0.37dBi LTE Band 41: 0.41dBi LTE Band 66: 0.38dBi LTE Band 71: -0.37dBi		

Note: For more details, please refer to the user's manual of the EUT.

2.3. Description of Test Modes

1. The EUT has been tested under typical operating condition. The CMW500 used to control the EUT staying in continuous transmitting and receiving mode for testing. Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

2. Test Frequencies

Test Mode	TX/RX	RF Channel		
		Low (L)	Middle (M)	High (H)
WCDMA Band IV	TX	Channel 1312	Channel 1413	Channel 1752
		1712.4MHz	1732.6MHz	1752.6MHz
	RX	Channel 1537	Channel 1638	Channel 1738
		2112.4MHz	2132.6MHz	2152.6MHz

Test Mode	Bandwidth	TX/RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 4	1.4MHz	TX	Channel 19957	Channel 20175	Channel 20393
			1710.7MHz	1732.5MHz	1754.4MHz
		RX	Channel 1975	Channel 2175	Channel 2375
			2112.5MHz	2132.5MHz	2152.5MHz
	3MHz	TX	Channel 19965	Channel 20175	Channel 20385
			1711.5MHz	1732.5MHz	1753.5MHz
		RX	Channel 2000	Channel 2175	Channel 2350
			2115MHz	2132.5MHz	2150MHz
	5MHz	TX	Channel 19975	Channel 20175	Channel 20375
			1712.5MHz	1732.5MHz	1752.5MHz
		RX	Channel 1975	Channel 2175	Channel 2375
			2112.5MHz	2132.5MHz	2152.5MHz
	10MHz	TX	Channel 20000	Channel 20175	Channel 20350
			1715MHz	1732.5MHz	1750MHz
		RX	Channel 2000	Channel 2175	Channel 2350
			2115MHz	2132.5MHz	2150MHz
	15MHz	TX	Channel 20025	Channel 20175	Channel 20325
			1717.5MHz	1732.5MHz	1747.5MHz
		RX	Channel 2025	Channel 2175	Channel 2325
			2117.5MHz	2132.5MHz	2147.5MHz
	20 MHz	TX	Channel 200.50	Channel 20175	Channel 20300
			1720MHz	1732.5MHz	1745MHz
		RX	Channel 2050	Channel 2175	Channel 2300
			2120MHz	2132.5MHz	2145MHz

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

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

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

Test Mode	Bandwidth	TX/RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 17	5MHz	TX	Channel 23755	Channel 23790	Channel 23825
			706.5MHz	710MHz	713.5MHz
		RX	Channel 5755	Channel 5790	Channel 5825
			736.5MHz	740MHz	743.5MHz
	10MHz	TX	Channel 23780	Channel 23790	Channel 23800
			709MHz	710MHz	711MHz
		RX	Channel 5780	Channel 5290	Channel 5800
			739MHz	740MHz	741MHz

Test Mode	Bandwidth	TX/RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 41	5MHz	TX/ RX	Channel 39675	Channel 40620	Channel 41565
			2498.5MHz	2593MHz	2687.5MHz
	10MHz	TX/ RX	Channel 39700	Channel 40620	Channel 41540
			2501MHz	2593MHz	2685MHz
	15MHz	TX/ RX	Channel 39725	Channel 40620	Channel 41515
			2503.5MHz	2593MHz	2682.5MHz
	20 MHz	TX/ RX	Channel 39750	Channel 40620	Channel 41490
			2506MHz	2593MHz	2680MHz

Test Mode	Bandwidth	TX/RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 66	1.4MHz	TX	Channel 131979	Channel 132322	Channel 132665
			1710.7MHz	1745MHz	1779.3MHz
		RX	Channel 66443	Channel 66786	Channel 67129
			2110.7MHz	2145MHz	2179.3MHz
	3MHz	TX	Channel 131987	Channel 132322	Channel 132657
			1711.5MHz	1745MHz	1778.5MHz
		RX	Channel 66451	Channel 66786	Channel 67121
			2111.5MHz	2145MHz	2178.5MHz
	5MHz	TX	Channel 131997	Channel 132322	Channel 132647
			1712.5MHz	1745MHz	1777.5MHz
		RX	Channel 66461	Channel 66786	Channel 67711
			2112.5MHz	2145MHz	2177.5MHz
	10MHz	TX	Channel 132022	Channel 132322	Channel 132622
			1715MHz	1745MHz	1775MHz
		RX	Channel 66486	Channel 66786	Channel 67086
			2115MHz	2145MHz	2175MHz
	15MHz	TX	Channel 132047	Channel 132322	Channel 132597
			1717.5MHz	1745MHz	1772.5MHz
		RX	Channel 66511	Channel 66786	Channel 67061
			2117.5MHz	2145MHz	2172.5MHz
	20 MHz	TX	Channel 132072	Channel 132322	Channel 132572
			1720MHz	1745MHz	1770MHz
		RX	Channel 66536	Channel 66786	Channel 67036
			2120MHz	2145MHz	2170MHz

Test Mode	Bandwidth	TX/RX	RF Channel		
			Low (L)	Middle (M)	High (H)
LTE Band 71	5MHz	TX	Channel 133147	Channel 133297	Channel 133447
			665.5MHz	680.5MHz	695.5MHz
		RX	Channel 68611	Channel 68761	Channel 68911
			619.5MHz	634.5MHz	649.5MHz
	10MHz	TX	Channel 133172	Channel 133297	Channel 133422
			668MHz	680.5MHz	693MHz
		RX	Channel 68636	Channel 68761	Channel 68886
			622MHz	634.5MHz	647MHz
	15MHz	TX	Channel 133197	Channel 133297	Channel 133397
			670.5MHz	680.5MHz	690.5MHz
		RX	Channel 68661	Channel 68761	Channel 68861
			624.5MHz	634.5MHz	644.5MHz
	20 MHz	TX	Channel 133222	Channel 133297	Channel 133372
			673MHz	680.5MHz	688MHz
		RX	Channel 68686	Channel 68761	Channel 68836
			627MHz	634.4MHz	642MHz

2.4. Equipments Used during the Test

Test Equipment	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Due Date
Bilog Antenna	Sunol Sciences Corp.	JB1	A061713	2021/05/22	2022/05/21
Bilog Antenna	Sunol Sciences Corp.	JB1	A061714	2021/05/22	2022/05/21
EMI Test Receiver	R&S	ESCI	103710	2021/05/22	2022/05/21
Spectrum Analyzer	Agilent	E4407B	MY41440676	2021/05/22	2022/05/21
Spectrum Analyzer	Agilent	N9020	US46220290	2021/05/22	2022/05/21
Spectrum Analyzer	Keysight	N9020A	MY53420874	2021/05/22	2022/05/21
Controller	EM Electronics	Controller EM 1000	N/A	2021/05/22	2022/05/21
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062013	2021/05/22	2022/05/21
Horn Antenna	Sunol Sciences Corp.	DRH-118	A062014	2021/05/22	2022/05/21
Active Loop Antenna	SCHWARZBEC K	FMZB1519	1519-037	2021/05/22	2022/05/21
Amplifier	Agilent	8349B	3008A02306	2021/05/22	2022/05/21
Amplifier	Agilent	8447D	2944A10176	2021/05/22	2022/05/21
Temperature/Humidity Meter	Gangxing	CTH-608	02	2021/05/22	2022/05/21
Wideband Radio Communication Tester	R&S	CMW500	101814	2021/05/22	2022/05/21
High-Pass Filter	K&L	9SH10-2700/X1 2750-O/O	N/A	2021/05/22	2022/05/21
High-Pass Filter	K&L	41H10-1375/U1 2750-O/O	N/A	2021/05/22	2022/05/21
RF Cable	HUBER+SUHNER	RG214	N/A	2021/05/22	2022/05/21
Climate Chamber	ESPEC	EL-10KA	A20120523	2021/05/22	2022/05/21
SIGNAL GENERATOR	Agilent	E4421B	US40051744	2021/05/22	2022/05/21
Directional Coupler	Agilent	87300B	3116A03638	2021/05/22	2022/05/21
Power Sensor	Agilent	U2021XA	MY5365004	2021/05/22	2022/05/21
Power Meter	Agilent	U2531A	TW53323507	2021/05/22	2022/05/21

The calibration interval was one year

2.5. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended to comply with of the Part 27 Rules.

2.6. Modifications

No modifications were implemented to meet testing criteria.

3. TEST CONDITIONS AND RESULTS

3.1. Output Power

LIMIT

FCC

- §22.913(a)(5), the ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.
- §24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ means for limiting power to the minimum necessary for successful communications.
- §27.50(c)(10), portable stations (hand-held devices) in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.
- §27.50(d)(4), fixed, mobile, and portable (hand-held) stations operating in the 1 710-1 755 MHz band and mobile and portable stations operating in the 1 695-1 710 MHz and 1 755-1 780 MHz bands are limited to 1 watt EIRP.
- §27.50(h)(2), mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

IC

- RSS-130 Issue 2

4.6.3, the e.r.p. shall not exceed 30 watts for mobile equipment and outdoor fixed subscriber equipment. The e.r.p. shall not exceed 3 watts for portable equipment and indoor fixed subscriber equipment.

For base and fixed equipment other than fixed subscriber equipment, refer to SRSP-518 for the e.i.r.p. limits.

- RSS-132 Issue 3

5.4, the transmitter output power shall be measured in terms of average power.

The equivalent isotropically radiated power (e.i.r.p.) for mobile equipment shall not exceed 11.5 watts. Refer to SRSP-503 for base station e.i.r.p. limits.

- RSS-133 Issue 6

6.4, the equivalent isotropically radiated power (e.i.r.p.) for transmitters shall not exceed the limits given in SRSP-510. Moreover, base station transmitters operating in the band 1 930-1 995 MHz shall not have output power exceeding 100 watts.

- RSS-139 Issue 3

6.5, the equivalent isotropically radiated power (e.i.r.p.) for mobile and portable transmitters shall not exceed one watt. The e.i.r.p. for fixed and base stations in the band 1 710-1 780 MHz shall not exceed one watt.

- RSS-199 Issue 3

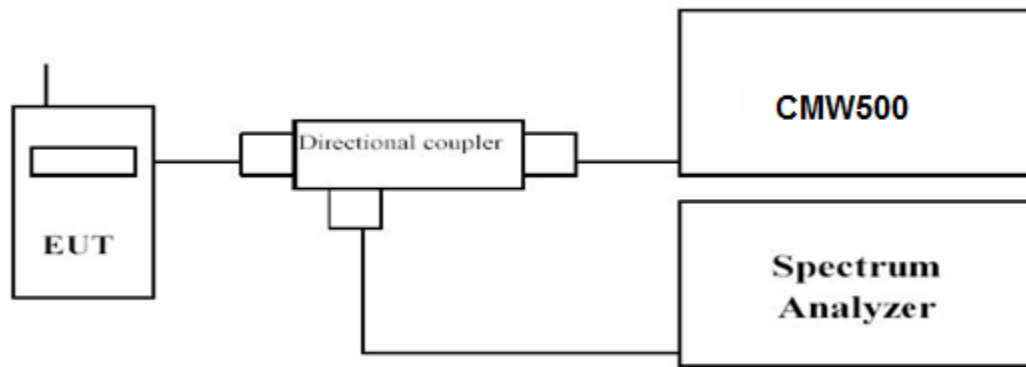
4.4, the transmitter output power shall be measured in terms of average value.

For base station equipment, refer to SRSP-517 for the maximum permissible e.i.r.p.

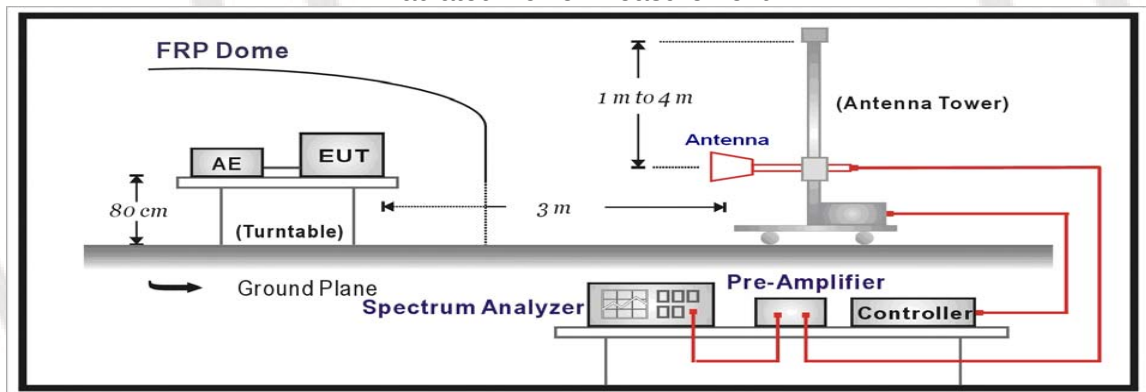
For mobile subscriber equipment, the e.i.r.p. shall not exceed 2 W. For fixed subscriber equipment, the transmitter output power shall not exceed 2 W and the e.i.r.p. shall be limited to 40 W.

TEST CONFIGURATION

Conducted Power Measurement



Radiated Power Measurement:



TEST PROCEDURE

The EUT was setup according to EIA/TIA 603D

Conducted Power Measurement:

- Place the EUT on a bench and set it in transmitting mode.
- Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
- EUT Communicate with CMW500 then selects a channel for testing.
- Add a correction factor to the display of spectrum, and then test.

Radiated Power Measurement:

- The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
- The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
- The output of the test antenna shall be connected to the measuring receiver.
- The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
- The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

- g) The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
- h) The maximum signal level detected by the measuring receiver shall be noted.
- i) The transmitter shall be replaced by a substitution antenna.
- j) The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
- k) The substitution antenna shall be connected to a calibrated signal generator.
- l) If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- m) The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
- n) The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
- o) The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
- p) The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
- q) Test site anechoic chamber refer to ANSI C63.10.

TEST RESULTS**Conducted Measurement :**

1. Please refer to Appendix B: Section 1
2. Please refer to Appendix E: Section 1
3. Please refer to Appendix G: Section 1
4. Please refer to Appendix H: Section 1
5. Please refer to Appendix I: Section 1
6. Please refer to Appendix K: Section 1
7. Please refer to Appendix O: Section 1
8. Please refer to Appendix P: Section 1
9. Please refer to Appendix Q: Section 1

Radiated Measurement:**Limits**

Rule Part 27.50(b)(10) specifies that " Portable stations (hand-held devices) transmitting in the 746~757 MHz , 776MHz~788MHz, and 805~806MHz bands are limited to 3 watts ERP "

Rule Part 27.50(c)(10) specifies that " Portable stations (hand-held devices) in the 600MHz uplink band and the 698-746MHz band, and mobile stations in the 600MHz uplink band are limited to 3 watts ERP "

Rule Part 27.50(d)(4) specifies that " mobile stations (hand-held) stations operating in the 1710~1755 MHz , band and mobile and portable stations operating in the 1695MHz~1710MHz and 1755~1780MHz bands are limited to 1 watts ERP "

Rule Part 27.50 (h) (2) Mobile and other user stations. Mobile stations are limited to 2.0 watts EIRP.

All user stations are limited to 2.0 watts transmitter output power.

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of WCDMA Band IV, TE Band 4, LTE Band 7, LTE Band 12, Band 13, Band 17, Band 41, Band 66, Band 71. recorded worst case for each Channel Bandwidth of WCDMA Band IV, TE Band 4, LTE Band 7, LTE Band 12, Band 13, Band 17, Band 41, Band 66, Band 71.

WCDMA Band IV

Mode	Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Polarization	Conclusion
WCDMA Band IV	Low	1712.4	25.75	30.00	H	Pass
	Mid	1732.6	25.26	30.00	H	Pass
	High	1752.6	25.83	30.00	H	Pass

LTE FDD Band 4

Bandwidth	Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Polarization	Conclusion
1.4MHz QPSK	Low	1710.7	25.12	30.00	H	Pass
	Mid	1732.5	25.22	30.00	H	Pass
	High	1754.3	25.62	30.00	H	Pass
3MHz QPSK	Low	1711.5	25.78	30.00	H	Pass
	Mid	1732.5	25.62	30.00	H	Pass
	High	1753.5	25.12	30.00	H	Pass
5MHz QPSK	Low	1712.5	25.22	30.00	H	Pass
	Mid	1732.5	25.62	30.00	H	Pass
	High	1752.5	25.78	30.00	H	Pass

10MHz QPSK	Low	1715.0	25.42	30.00	H	Pass
	Mid	1732.5	25.35	30.00	H	Pass
	High	1750.0	25.62	30.00	H	Pass
15MHz QPSK	Low	1717.5	25.82	30.00	H	Pass
	Mid	1732.5	25.62	30.00	H	Pass
	High	1747.5	25.42	30.00	H	Pass
20MHz QPSK	Low	1720.0	25.62	30.00	H	Pass
	Mid	1732.5	25.12	30.00	H	Pass
	High	1745.0	25.78	30.00	H	Pass
1.4MHz 16QAM	Low	1710.7	26.52	30.00	H	Pass
	Mid	1732.5	26.62	30.00	H	Pass
	High	1754.3	26.57	30.00	H	Pass
3MHz 16QAM	Low	1711.5	26.52	30.00	H	Pass
	Mid	1732.5	26.62	30.00	H	Pass
	High	1753.5	26.85	30.00	H	Pass
5MHz 16QAM	Low	1712.5	26.62	30.00	H	Pass
	Mid	1732.5	26.71	30.00	H	Pass
	High	1752.5	26.28	30.00	H	Pass
10MHz 16QAM	Low	1715.0	26.38	30.00	H	Pass
	Mid	1732.5	26.28	30.00	H	Pass
	High	1750.0	26.42	30.00	H	Pass
15MHz 16QAM	Low	1717.5	26.82	30.00	H	Pass
	Mid	1732.5	26.92	30.00	H	Pass
	High	1747.5	26.71	30.00	H	Pass
20MHz 16QAM	Low	1720.0	26.25	30.00	H	Pass
	Mid	1732.5	25.36	30.00	H	Pass
	High	1745.0	25.62	30.00	H	Pass

LTE FDD Band 7

Bandwidth	Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Polarization	Conclusion
5MHz QPSK	Low	2502.5	27.54	33.01	H	Pass
	Mid	2535	27.66	33.01	H	Pass
	High	2567.5	27.53	33.01	H	Pass
10MHz QPSK	Low	2505	27.58	33.01	H	Pass
	Mid	2535	27.62	33.01	H	Pass
	High	2565	27.77	33.01	H	Pass
5MHz 16QAM	Low	2507.5	27.39	33.01	H	Pass
	Mid	2535	27.72	33.01	H	Pass
	High	2562.5	27.97	33.01	H	Pass
10MHz 16QAM	Low	2510	27.76	33.01	H	Pass
	Mid	2535	27.25	33.01	H	Pass
	High	2560	27.23	33.01	H	Pass

LTE FDD Band 12

Bandwidth	Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Polarization	Conclusion
1.4MHz QPSK	Low	699.7	28.13	34.77	H	Pass
	Mid	707.5	28.35	34.77	H	Pass
	High	715.3	28.52	34.77	H	Pass
3MHz QPSK	Low	700.5	28.44	34.77	H	Pass
	Mid	707.5	28.36	34.77	H	Pass
	High	714.5	28.42	34.77	H	Pass
5MHz QPSK	Low	701.5	28.42	34.77	H	Pass
	Mid	707.5	27.62	34.77	H	Pass
	High	713.5	27.12	34.77	H	Pass
10MHz QPSK	Low	704.0	27.28	34.77	H	Pass
	Mid	707.5	27.93	34.77	H	Pass
	High	711.0	27.75	34.77	H	Pass
1.4MHz 16QAM	Low	699.7	27.25	34.77	H	Pass
	Mid	707.5	27.71	34.77	H	Pass
	High	715.3	27.62	34.77	H	Pass
3MHz 16QAM	Low	700.5	27.25	34.77	H	Pass
	Mid	707.5	27.75	34.77	H	Pass
	High	714.5	27.92	34.77	H	Pass
5MHz 16QAM	Low	701.5	27.25	34.77	H	Pass
	Mid	707.5	27.25	34.77	H	Pass
	High	713.5	27.63	34.77	H	Pass
10MHz 16QAM	Low	704.0	27.84	34.77	H	Pass
	Mid	707.5	27.85	34.77	H	Pass
	High	711.0	27.96	34.77	H	Pass

LTE FDD Band 13

Bandwidth	Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Polarization	Conclusion
5MHz QPSK	Low	790.5	26.86	34.77	H	Pass
	Mid	793	26.68	34.77	H	Pass
	High	795.5	26.68	34.77	H	Pass
10MHz QPSK	Mid	793	26.89	34.77	H	Pass
5MHz 16QAM	Low	790.5	26.91	34.77	H	Pass
	Mid	793	26.68	34.77	H	Pass
	High	795.5	26.93	34.77	H	Pass
10MHz 16QAM	Low	793	26.38	34.77	H	Pass
	Mid					
	High					

LTE FDD Band 17

Bandwidth	Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Polarization	Conclusion
5MHz QPSK	Low	706.5	27.63	34.77	H	Pass
	Mid	710	27.25	34.77	H	Pass
	High	713.5	27.45	34.77	H	Pass
10MHz QPSK	Low	709	27.63	34.77	H	Pass
	Mid	710	27.25	34.77	H	Pass
	High	711	27.41	34.77	H	Pass
5MHz 16QAM	Low	706.5	27.25	34.77	H	Pass
	Mid	710	27.15	34.77	H	Pass
	High	713.5	27.95	34.77	H	Pass
10MHz 16QAM	Low	709	27.85	34.77	H	Pass
	Mid	710	27.62	34.77	H	Pass
	High	711	27.42	34.77	H	Pass

LTE FDD Band 41

Bandwidth	Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Polarization	Conclusion
5MHz QPSK	Low	2498.5	27.62	33.00	H	Pass
	Mid	2593	27.68	33.00	H	Pass
	High	2687.5	27.35	33.00	H	Pass
10MHz QPSK	Low	2501	27.82	33.00	H	Pass
	Mid	2593	27.62	33.00	H	Pass
	High	2685	27.72	33.00	H	Pass
15MHz QPSK	Low	2503.5	27.36	33.00	H	Pass
	Mid	2593	27.72	33.00	H	Pass
	High	2682.5	27.34	33.00	H	Pass
20MHz QPSK	Low	2506	27.89	33.00	H	Pass
	Mid	2593	27.35	33.00	H	Pass
	High	2680	27.12	33.00	H	Pass
5MHz 16QAM	Low	2498.5	27.36	33.00	H	Pass
	Mid	2593	27.75	33.00	H	Pass
	High	2687.5	27.15	33.00	H	Pass
10MHz 16QAM	Low	2501	27.36	33.00	H	Pass
	Mid	2593	27.82	33.00	H	Pass
	High	2685	26.62	33.00	H	Pass
15MHz 16QAM	Low	2503.5	26.72	33.00	H	Pass
	Mid	2593	26.36	33.00	H	Pass
	High	2682.5	24.72	33.00	H	Pass
20MHz 16QAM	Low	2506	25.82	33.00	H	Pass
	Mid	2593	26.62	33.00	H	Pass
	High	2680	26.72	33.00	H	Pass

LTE FDD Band 66

Bandwidth	Channel	Frequency (MHz)	EIRP (dBm)	Limit (dBm)	Polarization	Conclusion
1.4MHz QPSK	Low	1710.7	25.16	30.00	H	Pass
	Mid	1745.0	25.34	30.00	H	Pass
	High	1779.3	26.57	30.00	H	Pass
3MHz QPSK	Low	1711.5	26.63	30.00	H	Pass
	Mid	1745.0	25.67	30.00	H	Pass
	High	1778.5	25.78	30.00	H	Pass
5MHz QPSK	Low	1712.5	25.52	30.00	H	Pass
	Mid	1745.5	24.42	30.00	H	Pass
	High	1777.5	25.67	30.00	H	Pass
10MHz QPSK	Low	1715.0	26.63	30.00	H	Pass
	Mid	1745.0	25.36	30.00	H	Pass
	High	1775.0	25.75	30.00	H	Pass
15MHz QPSK	Low	1717.5	25.57	30.00	H	Pass
	Mid	1745.0	25.63	30.00	H	Pass
	High	1772.5	24.67	30.00	H	Pass
20MHz QPSK	Low	1720.0	25.78	30.00	H	Pass
	Mid	1745.0	25.52	30.00	H	Pass
	High	1770.0	24.42	30.00	H	Pass
1.4MHz 16QAM	Low	1710.7	25.67	30.00	H	Pass
	Mid	1745.0	25.63	30.00	H	Pass
	High	1779.3	25.36	30.00	H	Pass
3MHz 16QAM	Low	1711.5	25.75	30.00	H	Pass
	Mid	1745.0	25.57	30.00	H	Pass
	High	1778.5	26.63	30.00	H	Pass
5MHz 16QAM	Low	1712.5	25.67	30.00	H	Pass
	Mid	1745.0	25.78	30.00	H	Pass

10MHz 16QAM	High	1777.5	24.52	30.00	H	Pass
	Low	1715.0	24.85	30.00	H	Pass
	Mid	1745.0	25.47	30.00	H	Pass
	High	1775.0	25.25	30.00	H	Pass
15MHz 16QAM	Low	1717.5	25.15	30.00	H	Pass
	Mid	1745.0	25.15	30.00	H	Pass
	High	1772.5	26.25	30.00	H	Pass
20MHz 16QAM	Low	1720.0	26.67	30.00	H	Pass
	Mid	1745.0	26.67	30.00	H	Pass
	High	1770.0	26.78	30.00	H	Pass

LTE FDD Band 71

Bandwidth	Channel	Frequency (MHz)	ERP (dBm)	Limit (dBm)	Polarization	Conclusion
5MHz QPSK	Low	665.5	26.22	34.77	H	Pass
	Mid	680.5	26.28	34.77	H	Pass
	High	695.5	26.25	34.77	H	Pass
10MHz QPSK	Low	668	26.32	34.77	H	Pass
	Mid	680.5	26.52	34.77	H	Pass
	High	693	26.42	34.77	H	Pass
15MHz QPSK	Low	670.5	26.56	34.77	H	Pass
	Mid	680.5	26.62	34.77	H	Pass
	High	690.5	26.64	34.77	H	Pass
20MHz QPSK	Low	673	26.79	34.77	H	Pass
	Mid	683	26.15	34.77	H	Pass
	High	688	26.22	34.77	H	Pass
5MHz 16QAM	Low	665.5	26.56	34.77	H	Pass
	Mid	680.5	26.65	34.77	H	Pass
	High	695.5	26.55	34.77	H	Pass
10MHz 16QAM	Low	668	26.36	34.77	H	Pass
	Mid	680.5	26.82	34.77	H	Pass
	High	693	26.62	34.77	H	Pass
15MHz 16QAM	Low	670.5	26.72	34.77	H	Pass
	Mid	680.5	26.26	34.77	H	Pass
	High	690.5	26.62	34.77	H	Pass
20MHz 16QAM	Low	673	26.82	34.77	H	Pass
	Mid	683	26.42	34.77	H	Pass
	High	688	26.72	34.77	H	Pass

3.2. Peak-to-Average Ratio (PAR)

LIMIT

FCC

- §22.913(d) Measurement of the ERP of Cellular base transmitters and repeaters must be made using an average power measurement technique. The peak-to-average ratio (PAR) of the transmission must not exceed 13 dB.

- §24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

- §27.50(d)(5), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (d)(6) of this section. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

IC

- RSS-130 Issue 2

4.6.1, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1 % of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

- RSS-132 Issue 3

5.4, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1 % of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

- RSS-133 Issue 6

6.4, the transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1 % of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

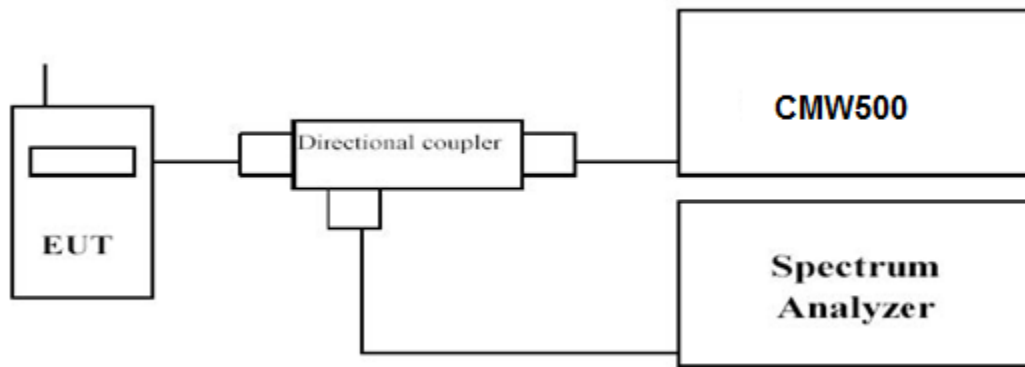
- RSS-139 Issue 3

6.5, the peak to average power ratio (PAPR) of the equipment shall not exceed 13 dB for more than 0.1 % of the time, using a signal that corresponds to the highest PAPR during periods of continuous transmission.

- RSS-199 Issue 3

4.4, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time and shall use a signal corresponding to the highest PAPR during periods of continuous transmission.

TEST CONFIGURATION



TEST PROCEDURE

1. Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
2. Set resolution/measurement bandwidth $\geq$ signal's occupied bandwidth;
3. Set the number of counts to a value that stabilizes the measured CCDF curve;
4. Set the measurement interval as follows:
 - 1). for continuous transmissions, set to 1 ms,
 - 2). for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
5. Record the maximum PAPR level associated with a probability of 0.1%.

TEST RESULTS

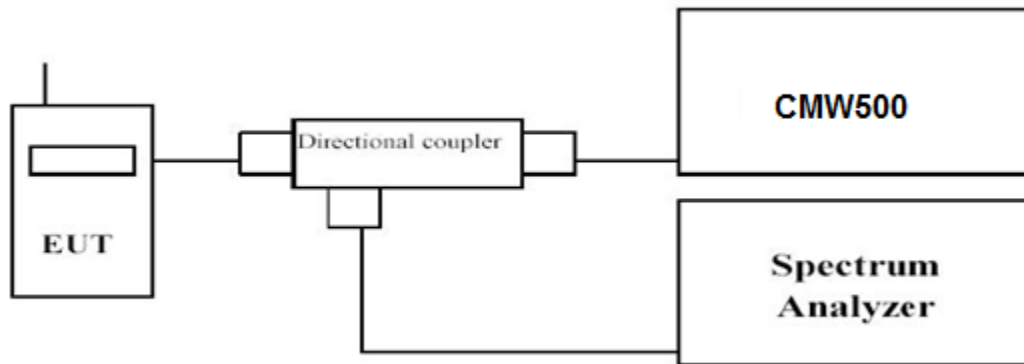
1. Please refer to Appendix B: Section 4
2. Please refer to Appendix E: Section 4
3. Please refer to Appendix G: Section 4
4. Please refer to Appendix H: Section 4
5. Please refer to Appendix I: Section 4
6. Please refer to Appendix K: Section 4
7. Please refer to Appendix O: Section 4
8. Please refer to Appendix P: Section 4
9. Please refer to Appendix Q: Section 4

3.3. Occupied Bandwidth and Emission Bandwidth

LIMIT

N/A

TEST CONFIGURATION



TEST PROCEDURE

The transmitter output was connected to a calibrated coaxial cable and coupler, the other end of which was connected to a spectrum analyzer. The occupied bandwidth was measured with the spectrum analyzer at low, middle and high channel in each band. The -26dBc Emission bandwidth was also measured and recorded.

Set RBW was set to about 1% of emission BW, VBW $\geq$ 3 times RBW.

-26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

TEST RESULTS

1. Please refer to Appendix B: Section 3
2. Please refer to Appendix E: Section 3
3. Please refer to Appendix G: Section 3
4. Please refer to Appendix H: Section 3
5. Please refer to Appendix I: Section 3
6. Please refer to Appendix K: Section 3
7. Please refer to Appendix O: Section 3
8. Please refer to Appendix P: Section 3
9. Please refer to Appendix Q: Section 3

3.4. Band Edge compliance

LIMIT FCC

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.
- §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB.
- §27.53(g), the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10 \log (P)$ dB.
- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10} (P)$ dB.
- §27.53(m)(4), For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log_{10} (P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log_{10} (P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log_{10} (P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10 \log_{10} (P)$ dB on all frequencies between 2490.5 MHz and 2496 MHz and $55 + 10 \log_{10} (P)$ dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees

IC

- RSS-130 Issue 2

4.7.1, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dB W), by at least $43 + 10 \log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside the equipment's operating frequency block range, a resolution bandwidth of 30 kHz may be employed.

- RSS-132 Issue 3

5.5, Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1 % of the occupied

bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 6

6.5, Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p(\text{watts})$.

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p(\text{watts})$. If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

- RSS-139 Issue 3

6.6, (i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power per any 1 % of the emission bandwidth shall be attenuated below the transmitter output power P (in dB W) by at least $43 + 10 \log_{10} p(\text{watts})$ dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dB W) by at least $43 + 10 \log_{10} p(\text{watts})$ dB.

- RSS-199 Issue 3

4.5, In the 1 MHz band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station and fixed subscriber equipment, and 2% for mobile subscriber equipment. Beyond the 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

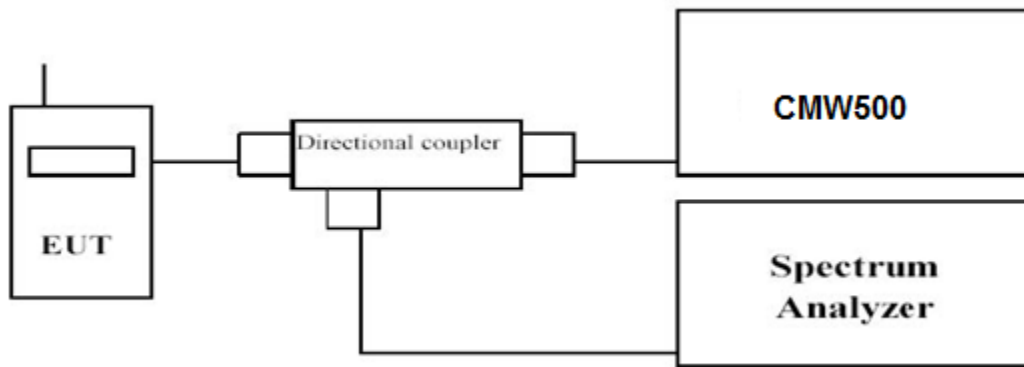
Equipment shall comply with the following unwanted emission limits:

- a. for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least $43 + 10 \log_{10} p$
- b. for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dBW), by at least:
 - i. $40 + 10 \log_{10} p$ from the channel edges to 5 MHz away
 - ii. $43 + 10 \log_{10} p$ between 5 MHz and X MHz from the channel edges, and
 - iii. $55 + 10 \log_{10} p$ at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than $43 + 10 \log_{10} p$ on all frequencies between 2490.5 MHz and 2496 MHz, and $55 + 10 \log_{10} p$ at or below 2490.5 MHz.

In (a) and (b), p is the transmitter power measured in watts and X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

TEST CONFIGURATION



TEST PROCEDURE

1. The transmitter output port was connected to base station.
2. The RF output of EUT was connected to the power meter by RF cable and attenuator, the path loss was compensated to the results for each measurement.
3. Set EUT at maximum power through base station.
4. Select lowest and highest channels for each band and different modulation.
5. Measure Band edge using RMS (Average) detector by spectrum

TEST RESULTS

1. Please refer to Appendix B: Section 6
2. Please refer to Appendix E: Section 6
3. Please refer to Appendix G: Section 6
4. Please refer to Appendix H: Section 6
5. Please refer to Appendix I: Section 6
6. Please refer to Appendix K: Section 6
7. Please refer to Appendix O: Section 6
8. Please refer to Appendix P: Section 6
9. Please refer to Appendix Q: Section 6

3.5. Spurious Emission

LIMIT

FCC

- §22.917(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.
- §24.238(a), the power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10\log(P)$ dB.
- §27.53(g), the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least $43 + 10\log(P)$ dB.
- §27.53(h)(1), for operations in the 1 695-1 710 MHz, 1 710-1 755 MHz, 1 755-1 780 MHz, 1 915-1 920 MHz, 1 995-2 000 MHz, 2 000-2 020 MHz, 2 110-2 155 MHz, 2 155-2 180 MHz, and 2 180-2 200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10\log_{10}(P)$ dB.
- §27.53(m)(4), For mobile digital stations, the attenuation factor shall be not less than $40 + 10\log_{10}(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10\log_{10}(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10\log_{10}(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than $43 + 10\log_{10}(P)$ dB on all frequencies between 2 490.5 MHz and 2 496 MHz and $55 + 10\log_{10}(P)$ dB at or below 2 490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2 495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees

IC

- RSS-130 Issue 2

4.7.1, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dB W), by at least $43 + 10\log_{10} p$ (watts), dB. However, in the 100 kHz band immediately outside the equipment's operating frequency block range, a resolution bandwidth of 30 kHz may be employed.

- RSS-132 Issue 3

5.5, Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

(i) In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1 % of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10\log_{10} p$ (watts).

(ii) After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10\log_{10} p$ (watts). If the measurement is performed using 1 % of the occupied bandwidth, power integration over 100 kHz is required.

- RSS-133 Issue 6

6.5, Equipment shall comply with the limits in (i) and (ii) below.

(i) In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1 % of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts).

(ii) After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dB W) by at least $43 + 10 \log_{10} p$ (watts). If the measurement is performed using 1 % of the emission bandwidth, power integration over 1.0 MHz is required.

- RSS-139 Issue 3

6.6, (i) In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power per any 1 % of the emission bandwidth shall be attenuated below the transmitter output power P (in dB W) by at least $43 + 10 \log_{10} p$ (watts) dB.

(ii) After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dB W) by at least $43 + 10 \log_{10} p$ (watts) dB.

- RSS-199 Issue 3

4.5, In the 1 MHz band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station and fixed subscriber equipment, and 2% for mobile subscriber equipment. Beyond the 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

Equipment shall comply with the following unwanted emission limits:

- a. for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dB W), by at least $43 + 10 \log_{10} p$
- b. for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power, P (dB W), by at least:

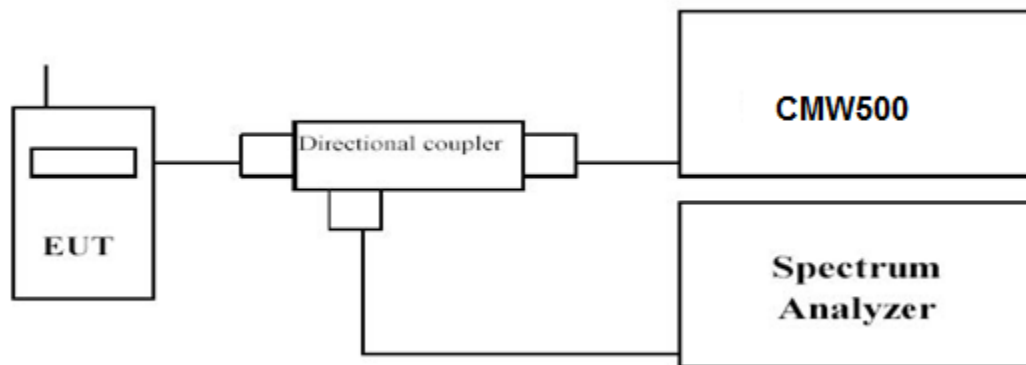
- i. $40 + 10 \log_{10} p$ from the channel edges to 5 MHz away
- ii. $43 + 10 \log_{10} p$ between 5 MHz and X MHz from the channel edges, and
- iii. $55 + 10 \log_{10} p$ at X MHz and beyond from the channel edges

In addition, the attenuation shall not be less than $43 + 10 \log_{10} p$ on all frequencies between 2490.5 MHz and 2496 MHz, and $55 + 10 \log_{10} p$ at or below 2490.5 MHz.

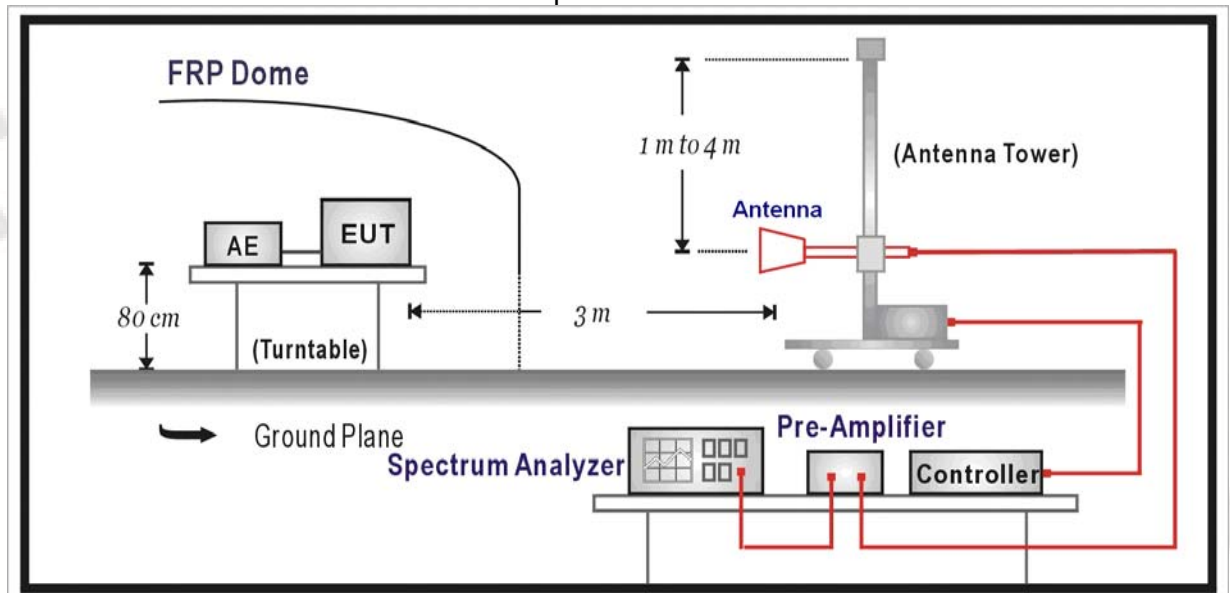
In (a) and (b), p is the transmitter power measured in watts and X is 6 MHz or the equipment occupied bandwidth, whichever is greater.

TEST CONFIGURATION

Conducted Spurious Measurement:



Radiated Spurious Measurement:



TEST PROCEDURE

The EUT was setup according to EIA/TIA 603D

Conducted Spurious Measurement:

- Place the EUT on a bench and set it in transmitting mode.
- Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMW500 by a Directional Couple.
- EUT Communicate with CMW500 then selects a channel for testing.
- Add a correction factor to the display of spectrum, and then test.
- The resolution bandwidth of the spectrum analyzer was set sufficient scans were taken to show the out of band Emission if any up to 10th harmonic.

Radiated Spurious Measurement:

- a. The EUT shall be placed at the specified height on a support, and in the position closest to normal use as declared by provider.
- b. The test antenna shall be oriented initially for vertical polarization and shall be chosen to correspond to the frequency of the transmitter
- c. The output of the test antenna shall be connected to the measuring receiver.
- d. The transmitter shall be switched on and the measuring receiver shall be tuned to the frequency of the transmitter under test.
- e. The test antenna shall be raised and lowered through the specified range of height until a maximum signal level is detected by the measuring receiver.
- f. The transmitter shall then be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.
- g. The test antenna shall be raised and lowered again through the specified range of height until a maximum signal level is detected by the measuring receiver.
- h. The maximum signal level detected by the measuring receiver shall be noted.
- i. The transmitter shall be replaced by a substitution antenna.
- j. The substitution antenna shall be orientated for vertical polarization and the length of the substitution antenna shall be adjusted to correspond to the frequency of the transmitter.
- k. The substitution antenna shall be connected to a calibrated signal generator.
- l. If necessary, the input attenuator setting of the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.
- m. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.
- n. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring receiver, that is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.
- o. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.
- p. The measure of the effective radiated power is the larger of the two levels recorded at the input to the substitution antenna, corrected for gain of the substitution antenna if necessary.
- q. The resolution bandwidth of the spectrum analyzer was set at 100 kHz for Part 22 and 1MHz for Part 24. The frequency range was checked up to 10th harmonic.
- r. Test site anechoic chamber refer to ANSI C63.

TEST RESULTS

Conducted Measurement :

1. Please refer to Appendix B: Section 6
2. Please refer to Appendix E: Section 6
3. Please refer to Appendix G: Section 6
4. Please refer to Appendix H: Section 6
5. Please refer to Appendix I: Section 6
6. Please refer to Appendix K: Section 6
7. Please refer to Appendix O: Section 6
8. Please refer to Appendix P: Section 6
9. Please refer to Appendix Q: Section 6

Radiated Measurement:

Remark:

1. We were tested all RB Configuration refer 3GPP TS136 521 for each Channel Bandwidth of WCDMA Band IV, *LTE Band 4*, *LTE Band 7*, *LTE Band 12*, *Band 13*, *Band 17*, *Band 41*, *Band 66*, *Band 71*; recorded worst case for each Channel Bandwidth of WCDMA Band IV, *LTE Band 4*, *LTE Band 7*, *LTE Band 12*, *Band 13*, *Band 17*, *Band 41*, *Band 66*, *Band 71* @ QPSK
2. $EIRP = P_{Mea}(dBm) - P_{cl}(dB) + G_a(dBi)$
3. We were not recorded other points as values lower than limits.
4. Margin = EIRP- Limit

WCDMA Band IV _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3424.8	-50.35	4.62	3.00	9.81	-45.16	-13.00	-32.16	H
5137.2	-51.20	5.94	3.00	10.86	-46.28	-13.00	-33.28	H
3424.8	-52.34	4.62	3.00	9.81	-47.15	-13.00	-34.15	V
5137.2	-54.11	5.94	3.00	10.86	-49.19	-13.00	-36.19	V

WCDMA Band IV _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.2	-49.14	4.63	3.00	9.84	-43.93	-13.00	-30.93	H
5197.8	-51.41	5.94	3.00	10.86	-46.49	-13.00	-33.49	H
3465.2	-53.14	4.63	3.00	9.84	-47.93	-13.00	-34.93	V
5197.8	-54.38	5.94	3.00	10.86	-49.46	-13.00	-36.46	V

WCDMA Band IV _ High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3505.2	-51.77	4.65	3.00	9.90	-46.52	-13.00	-33.52	H
5254.1	-53.12	5.95	3.00	10.91	-48.16	-13.00	-35.16	H
3505.2	-53.87	4.65	3.00	9.90	-48.62	-13.00	-35.62	V
5254.1	-54.89	5.95	3.00	10.91	-49.93	-13.00	-36.93	V

LTE Band 4 Channel Bandwidth 1.4MHz QPSK _ Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.4	-48.57	4.62	3.00	9.81	-43.38	-13.00	-30.38	H
5132.1	-52.09	5.94	3.00	10.86	-47.17	-13.00	-34.17	H
3421.4	-52.74	4.62	3.00	9.81	-47.55	-13.00	-34.55	V
5132.1	-54.96	5.94	3.00	10.86	-50.04	-13.00	-37.04	V

LTE Band 4 Channel Bandwidth 1.4MHz QPSK _ Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-48.92	4.63	3.00	9.84	-43.71	-13.00	-30.71	H
5197.5	-52.35	5.94	3.00	10.86	-47.43	-13.00	-34.43	H
3465.0	-52.68	4.63	3.00	9.84	-47.47	-13.00	-34.47	V
5197.5	-55.14	5.94	3.00	10.86	-50.22	-13.00	-37.22	V

LTE Band 4 Channel Bandwidth 1.4MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3508.6	-48.41	4.62	3.00	9.81	-43.22	-13.00	-30.22	H
5262.9	-52.15	5.94	3.00	10.86	-47.23	-13.00	-34.23	H
3508.6	-52.55	4.62	3.00	9.81	-47.36	-13.00	-34.36	V
5262.9	-54.87	5.94	3.00	10.86	-49.95	-13.00	-36.95	V

LTE Band 4 Channel Bandwidth 3MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3423.0	-48.71	4.63	3.00	9.84	-43.50	-13.00	-30.50	H
5134.5	-52.32	5.94	3.00	10.86	-47.40	-13.00	-34.40	H
3423.0	-53.00	4.63	3.00	9.84	-47.79	-13.00	-34.79	V
5134.5	-55.35	5.94	3.00	10.86	-50.43	-13.00	-37.43	V

LTE Band 4 Channel Bandwidth 3MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-52.22	4.65	3.00	9.9	-46.97	-13.00	-33.97	H
5197.5	-53.48	5.95	3.00	10.91	-48.52	-13.00	-35.52	H
3465.0	-54.78	4.65	3.00	9.9	-49.53	-13.00	-36.53	V
5197.5	-56.10	5.95	3.00	10.91	-51.14	-13.00	-38.14	V

LTE Band 4 Channel Bandwidth 3MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3507.0	-48.26	4.62	3.00	9.81	-43.07	-13.00	-30.07	H
5260.5	-52.13	5.94	3.00	10.86	-47.21	-13.00	-34.21	H
3507.0	-52.74	4.62	3.00	9.81	-47.55	-13.00	-34.55	V
5260.5	-54.63	5.94	3.00	10.86	-49.71	-13.00	-36.71	V

LTE Band 4 Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3425.0	-48.91	4.63	3.00	9.84	-43.70	-13.00	-30.70	H
5137.5	-52.57	5.94	3.00	10.86	-47.65	-13.00	-34.65	H
3425.0	-52.69	4.63	3.00	9.84	-47.48	-13.00	-34.48	V
5137.5	-55.50	5.94	3.00	10.86	-50.58	-13.00	-37.58	V

LTE Band 4 Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-52.16	4.65	3.00	9.9	-46.91	-13.00	-33.91	H
5197.5	-53.27	5.95	3.00	10.91	-48.31	-13.00	-35.31	H
3465.0	-54.89	4.65	3.00	9.9	-49.64	-13.00	-36.64	V
5197.5	-55.88	5.95	3.00	10.91	-50.92	-13.00	-37.92	V

LTE Band 4 Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3505.0	-48.27	4.62	3.00	9.81	-43.08	-13.00	-30.08	H
5257.5	-51.90	5.94	3.00	10.86	-46.98	-13.00	-33.98	H
3505.0	-52.59	4.62	3.00	9.81	-47.40	-13.00	-34.40	V
5257.5	-54.98	5.94	3.00	10.86	-50.06	-13.00	-37.06	V

LTE Band 4 Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3430.0	-49.08	4.63	3.00	9.84	-43.87	-13.00	-30.87	H
5145.0	-52.48	5.94	3.00	10.86	-47.56	-13.00	-34.56	H
3430.0	-52.71	4.63	3.00	9.84	-47.50	-13.00	-34.50	V
5145.0	-55.46	5.94	3.00	10.86	-50.54	-13.00	-37.54	V

LTE Band 4 Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-52.24	4.65	3.00	9.9	-46.99	-13.00	-33.99	H
5197.5	-53.31	5.95	3.00	10.91	-48.35	-13.00	-35.35	H
3465.0	-55.14	4.65	3.00	9.9	-49.89	-13.00	-36.89	V
5197.5	-55.97	5.95	3.00	10.91	-51.01	-13.00	-38.01	V

LTE Band 4 Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.0	-48.30	4.62	3.00	9.81	-43.11	-13.00	-30.11	H
5250.0	-51.86	5.94	3.00	10.86	-46.94	-13.00	-33.94	H
3500.0	-52.46	4.62	3.00	9.81	-47.27	-13.00	-34.27	V
5250.0	-54.64	5.94	3.00	10.86	-49.72	-13.00	-36.72	V

LTE Band 4 Channel Bandwidth 15MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3435.0	-48.97	4.63	3.00	9.84	-43.76	-13.00	-30.76	H
5152.5	-52.42	5.94	3.00	10.86	-47.50	-13.00	-34.50	H
3435.0	-52.91	4.63	3.00	9.84	-47.70	-13.00	-34.70	V
5152.5	-55.45	5.94	3.00	10.86	-50.53	-13.00	-37.53	V

LTE Band 4 Channel Bandwidth 15MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-52.17	4.65	3.00	9.9	-46.92	-13.00	-33.92	H
5197.5	-53.53	5.95	3.00	10.91	-48.57	-13.00	-35.57	H
3465.0	-54.89	4.65	3.00	9.9	-49.64	-13.00	-36.64	V
5197.5	-56.15	5.95	3.00	10.91	-51.19	-13.00	-38.19	V

LTE Band 4 Channel Bandwidth 15MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3495.0	-48.24	4.62	3.00	9.81	-43.05	-13.00	-30.05	H
5242.5	-52.10	5.94	3.00	10.86	-47.18	-13.00	-34.18	H
3495.0	-52.65	4.62	3.00	9.81	-47.46	-13.00	-34.46	V
5242.5	-54.93	5.94	3.00	10.86	-50.01	-13.00	-37.01	V

LTE Band 4 Channel Bandwidth 20MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3440.0	-48.79	4.63	3.00	9.84	-43.58	-13.00	-30.58	H
5160.0	-52.27	5.94	3.00	10.86	-47.35	-13.00	-34.35	H
3440.0	-52.73	4.63	3.00	9.84	-47.52	-13.00	-34.52	V
5160.0	-55.46	5.94	3.00	10.86	-50.54	-13.00	-37.54	V

LTE Band 4 Channel Bandwidth 20MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-52.27	4.65	3.00	9.9	-47.02	-13.00	-34.02	H
5197.5	-53.29	5.95	3.00	10.91	-48.33	-13.00	-35.33	H
3465.0	-54.83	4.65	3.00	9.9	-49.58	-13.00	-36.58	V
5197.5	-55.91	5.95	3.00	10.91	-50.95	-13.00	-37.95	V

LTE Band 4 Channel Bandwidth 20MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.0	-48.51	4.62	3.00	9.81	-43.32	-13.00	-30.32	H
5235.0	-52.15	5.94	3.00	10.86	-47.23	-13.00	-34.23	H
3490.0	-52.51	4.62	3.00	9.81	-47.32	-13.00	-34.32	V
5235.0	-54.71	5.94	3.00	10.86	-49.79	-13.00	-36.79	V

LTE Band 7 Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5005	-45.67	5.88	3.00	10.77	-40.78	-25.00	-15.78	H
7507.5	-47.92	7.12	3.00	12.26	-42.78	-25.00	-17.78	H
5005	-49.46	5.88	3.00	10.77	-44.57	-25.00	-19.57	V
7507.5	-53.82	7.12	3.00	12.26	-48.68	-25.00	-23.68	V

LTE Band 7 Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070	-43.25	5.9	3.00	10.81	-38.34	-25.00	-13.34	H
7605	-45.96	7.19	3.00	12.32	-40.83	-25.00	-15.83	H
5070	-46.67	5.9	3.00	10.81	-41.76	-25.00	-16.76	V
7605	-49.30	7.19	3.00	12.32	-44.17	-25.00	-19.17	V

LTE Band 7_Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5135	-48.94	5.94	3.00	10.86	-44.02	-25.00	-19.02	H
7702.5	-54.72	7.25	3.00	12.98	-48.99	-25.00	-23.99	H
5135	-52.73	5.94	3.00	10.86	-47.81	-25.00	-22.81	V
7702.5	-56.96	7.25	3.00	12.98	-51.23	-25.00	-26.23	V

LTE Band 7_Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5010	-49.00	4.63	3.00	9.84	-43.79	-13.00	-30.79	H
7515	-52.23	5.94	3.00	10.86	-47.31	-13.00	-34.31	H
5010	-52.69	4.63	3.00	9.84	-47.48	-13.00	-34.48	V
7515	-55.13	5.94	3.00	10.86	-50.21	-13.00	-37.21	V

LTE Band 7_Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070	-45.63	5.88	3.00	10.77	-40.74	-25.00	-15.74	H
7605	-48.01	7.12	3.00	12.26	-42.87	-25.00	-17.87	H
5070	-49.41	5.88	3.00	10.77	-44.52	-25.00	-19.52	V
7605	-53.74	7.12	3.00	12.26	-48.60	-25.00	-23.60	V

LTE Band 7_Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5730	-43.20	5.9	3.00	10.81	-38.29	-25.00	-13.29	H
7695	-45.95	7.19	3.00	12.32	-40.82	-25.00	-15.82	H
5730	-46.85	5.9	3.00	10.81	-41.94	-25.00	-16.94	V
7695	-49.46	7.19	3.00	12.32	-44.33	-25.00	-19.33	V

LTE Band 7_Channel Bandwidth 15MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5015	-48.89	5.94	3.00	10.86	-43.97	-25.00	-18.97	H
7522.5	-54.54	7.25	3.00	12.98	-48.81	-25.00	-23.81	H
5015	-52.37	5.94	3.00	10.86	-47.45	-25.00	-22.45	V
7522.5	-56.85	7.25	3.00	12.98	-51.12	-25.00	-26.12	V

LTE Band 7_Channel Bandwidth 15MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070	-45.43	5.88	3.00	10.77	-40.54	-25.00	-15.54	H
7605	-47.93	7.12	3.00	12.26	-42.79	-25.00	-17.79	H
5070	-49.55	5.88	3.00	10.77	-44.66	-25.00	-19.66	V
7605	-53.70	7.12	3.00	12.26	-48.56	-25.00	-23.56	V

LTE Band 7_Channel Bandwidth 15MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5125	-45.55	5.88	3.00	10.77	-40.66	-25.00	-15.66	H
7687.5	-47.97	7.12	3.00	12.26	-42.83	-25.00	-17.83	H
5125	-49.23	5.88	3.00	10.77	-44.34	-25.00	-19.34	V
7687.5	-53.74	7.12	3.00	12.26	-48.60	-25.00	-23.60	V

LTE Band 7_Channel Bandwidth 20MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5020	-43.02	5.9	3.00	10.81	-38.11	-25.00	-13.11	H
7530	-45.71	7.19	3.00	12.32	-40.58	-25.00	-15.58	H
5020	-46.90	5.9	3.00	10.81	-41.99	-25.00	-16.99	V
7530	-49.10	7.19	3.00	12.32	-43.97	-25.00	-18.97	V

LTE Band 7_Channel Bandwidth 20MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5070	-48.76	5.94	3.00	10.86	-43.84	-25.00	-18.84	H
5705	-54.67	7.25	3.00	12.98	-48.94	-25.00	-23.94	H
5070	-52.73	5.94	3.00	10.86	-47.81	-25.00	-22.81	V
5705	-56.79	7.25	3.00	12.98	-51.06	-25.00	-26.06	V

LTE Band 7_Channel Bandwidth 20MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5120	-45.49	5.88	3.00	10.77	-40.60	-25.00	-15.60	H
7680	-48.13	7.12	3.00	12.26	-42.99	-25.00	-17.99	H
5120	-49.37	5.88	3.00	10.77	-44.48	-25.00	-19.48	V
7680	-53.75	7.12	3.00	12.26	-48.61	-25.00	-23.61	V

LTE Band 12_Channel Bandwidth 1.4MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1399.40	-43.05	5.9	3.00	10.81	-38.14	-13.00	-25.14	H
2099.10	-45.95	7.19	3.00	12.32	-40.82	-13.00	-27.82	H
1399.40	-46.73	5.9	3.00	10.81	-41.82	-13.00	-28.82	V
2099.10	-49.43	7.19	3.00	12.32	-44.30	-13.00	-31.30	V

LTE Band 12_Channel Bandwidth 1.4MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-41.01	4.73	3.00	10.42	-35.32	-13.00	-22.32	H
2122.50	-47.62	5.64	3.00	12.30	-40.96	-13.00	-27.96	H
1415.00	-43.91	4.73	3.00	10.42	-38.22	-13.00	-25.22	V
2122.50	-50.16	5.64	3.00	12.30	-43.50	-13.00	-30.50	V

LTE Band 12_Channel Bandwidth 1.4MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1430.60	-40.86	4.73	3.00	10.42	-35.17	-13.00	-22.17	H
2145.90	-47.87	5.64	3.00	12.30	-41.21	-13.00	-28.21	H
1430.60	-43.86	4.73	3.00	10.42	-38.17	-13.00	-25.17	V
2145.90	-50.50	5.64	3.00	12.30	-43.84	-13.00	-30.84	V

LTE Band 12_Channel Bandwidth 3MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1401.00	-39.91	4.75	3.00	10.44	-34.22	-13.00	-21.22	H
2101.50	-44.27	5.66	3.00	12.33	-37.60	-13.00	-24.60	H
1401.00	-44.05	4.75	3.00	10.44	-38.36	-13.00	-25.36	V
2101.50	-47.91	5.66	3.00	12.33	-41.24	-13.00	-28.24	V

LTE Band 12_Channel Bandwidth 3MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-39.43	4.77	3.00	10.45	-33.75	-13.00	-20.75	H
2122.50	-44.73	5.69	3.00	12.36	-38.06	-13.00	-25.06	H
1415.00	-44.83	4.77	3.00	10.45	-39.15	-13.00	-26.15	V
2122.50	-50.39	5.69	3.00	12.36	-43.72	-13.00	-30.72	V

LTE Band 12_Channel Bandwidth 3MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1429.00	-40.89	4.73	3.00	10.42	-35.20	-13.00	-22.20	H
2143.50	-47.88	5.64	3.00	12.30	-41.22	-13.00	-28.22	H
1429.00	-43.77	4.73	3.00	10.42	-38.08	-13.00	-25.08	V
2143.50	-50.50	5.64	3.00	12.30	-43.84	-13.00	-30.84	V

LTE Band 12_Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1403.00	-39.83	4.75	3.00	10.44	-34.14	-13.00	-21.14	H
2104.50	-44.46	5.66	3.00	12.33	-37.79	-13.00	-24.79	H
1403.00	-44.01	4.75	3.00	10.44	-38.32	-13.00	-25.32	V
2104.50	-48.02	5.66	3.00	12.33	-41.35	-13.00	-28.35	V

LTE Band 12_Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-39.43	4.77	3.00	10.45	-33.75	-13.00	-20.75	H
2122.50	-44.36	5.69	3.00	12.36	-37.69	-13.00	-24.69	H
1415.00	-44.80	4.77	3.00	10.45	-39.12	-13.00	-26.12	V
2122.50	-50.25	5.69	3.00	12.36	-43.58	-13.00	-30.58	V

LTE Band 12_Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1427.00	-40.96	4.73	3.00	10.42	-35.27	-13.00	-22.27	H
2140.50	-47.67	5.64	3.00	12.30	-41.01	-13.00	-28.01	H
1427.00	-43.84	4.73	3.00	10.42	-38.15	-13.00	-25.15	V
2140.50	-50.33	5.64	3.00	12.30	-43.67	-13.00	-30.67	V

LTE and 12_Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1408.00	-40.00	4.75	3.00	10.44	-34.31	-13.00	-21.31	H
2112.00	-44.32	5.66	3.00	12.33	-37.65	-13.00	-24.65	H
1408.00	-43.96	4.75	3.00	10.44	-38.27	-13.00	-25.27	V
2112.00	-48.02	5.66	3.00	12.33	-41.35	-13.00	-28.35	V

LTE Band 12_Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1415.00	-39.50	4.77	3.00	10.45	-33.82	-13.00	-20.82	H
2122.50	-44.41	5.69	3.00	12.36	-37.74	-13.00	-24.74	H
1415.00	-44.55	4.77	3.00	10.45	-38.87	-13.00	-25.87	V
2122.50	-50.02	5.69	3.00	12.36	-43.35	-13.00	-30.35	V

LTE Band 12_Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1422.00	-41.22	4.73	3.00	10.42	-35.53	-13.00	-22.53	H
2133.00	-47.71	5.64	3.00	12.30	-41.05	-13.00	-28.05	H
1422.00	-43.72	4.73	3.00	10.42	-38.03	-13.00	-25.03	V
2133.00	-50.45	5.64	3.00	12.30	-43.79	-13.00	-30.79	V

LTE Band 12_Channel Bandwidth 1.4MHz_16QAM_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1399.40	-40.12	4.75	3.00	10.44	-34.43	-13.00	-21.43	H
2099.10	-44.14	5.66	3.00	12.33	-37.47	-13.00	-24.47	H
1399.40	-44.09	4.75	3.00	10.44	-38.40	-13.00	-25.40	V
2099.10	-47.90	5.66	3.00	12.33	-41.23	-13.00	-28.23	V

LTE Band 13Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1555.80	-42.25	4.92	3.00	10.45	-36.72	-13.00	-23.72	H
2338.50	-47.28	5.78	3.00	12.32	-40.74	-13.00	-27.74	H
1555.80	-45.02	4.92	3.00	10.45	-39.49	-13.00	-26.49	V
2338.50	-50.13	5.78	3.00	12.32	-43.59	-13.00	-30.59	V

LTE Band 13Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.00	-39.82	4.99	3.00	11.12	-33.69	-13.00	-20.69	H
2346.50	-45.11	5.85	3.00	12.02	-38.94	-13.00	-25.94	H
1564.00	-43.27	4.99	3.00	11.12	-37.14	-13.00	-24.14	V
2346.50	-48.86	5.85	3.00	12.02	-42.69	-13.00	-29.69	V

LTE Band 13Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1569.00	-40.17	5.12	3.00	9.98	-35.31	-13.00	-22.31	H
2353.50	-45.84	5.93	3.00	11.66	-40.11	-13.00	-27.11	H
1569.00	-43.45	5.12	3.00	9.98	-38.59	-13.00	-25.59	V
2353.50	-50.30	5.93	3.00	11.66	-44.57	-13.00	-31.57	V

LTE Band 13Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1556.50	-42.21	4.92	3.00	10.45	-36.68	-13.00	-23.68	H
2346.00	-47.16	5.78	3.00	12.32	-40.62	-13.00	-27.62	H
1556.50	-44.83	4.92	3.00	10.45	-39.30	-13.00	-26.30	V
2346.00	-50.19	5.78	3.00	12.32	-43.65	-13.00	-30.65	V

LTE Band 13Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1555.30	-39.99	4.99	3.00	11.12	-33.86	-13.00	-20.86	H
2346.00	-45.04	5.85	3.00	12.02	-38.87	-13.00	-25.87	H
1555.30	-43.24	4.99	3.00	11.12	-37.11	-13.00	-24.11	V
2346.00	-48.80	5.85	3.00	12.02	-42.63	-13.00	-29.63	V

LTE Band 13Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1564.00	-39.86	5.12	3.00	9.98	-35.00	-13.00	-22.00	H
2346.00	-45.77	5.93	3.00	11.66	-40.04	-13.00	-27.04	H
1564.00	-43.52	5.12	3.00	9.98	-38.66	-13.00	-25.66	V
2346.00	-50.51	5.93	3.00	11.66	-44.78	-13.00	-31.78	V

LTE Band 17Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1412	-54.75	3.72	3.00	9.04	-49.43	-13.00	-36.43	H
2119.5	-60.67	4.23	3.00	8.60	-56.30	-13.00	-43.30	H
1412	-49.92	3.72	3.00	9.04	-44.60	-13.00	-31.60	V
2119.5	-55.64	4.23	3.00	8.60	-51.27	-13.00	-38.27	V

LTE Band 17Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1420	-53.90	4.78	3.00	8.91	-49.77	-13.00	-36.77	H
2130	-59.29	4.25	3.00	8.26	-55.28	-13.00	-42.28	H
1420	-49.04	4.78	3.00	8.91	-44.91	-13.00	-31.91	V
2130	-54.39	4.25	3.00	8.26	-50.38	-13.00	-37.38	V

LTE Band 17Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1427	-55.27	4.78	3.00	8.91	-51.14	-13.00	-38.14	H
2440.5	-58.86	4.25	3.00	8.26	-54.85	-13.00	-41.85	H
1427	-51.92	4.78	3.00	8.91	-47.79	-13.00	-34.79	V
2440.5	-53.71	4.25	3.00	8.26	-49.70	-13.00	-36.70	V

LTE Band 17Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1418	-55.07	3.72	3.00	9.04	-49.75	-13.00	-36.75	H
2127	-60.62	4.23	3.00	8.60	-56.25	-13.00	-43.25	H
1418	-49.93	3.72	3.00	9.04	-44.61	-13.00	-31.61	V
2127	-55.75	4.23	3.00	8.60	-51.38	-13.00	-38.38	V

LTE Band 17Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1420	-53.85	4.78	3.00	8.91	-49.72	-13.00	-36.72	H
2130	-59.08	4.25	3.00	8.26	-55.07	-13.00	-42.07	H
1420	-49.04	4.78	3.00	8.91	-44.91	-13.00	-31.91	V
2130	-54.53	4.25	3.00	8.26	-50.52	-13.00	-37.52	V

LTE Band 17Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1422	-55.18	4.78	3.00	8.91	-51.05	-13.00	-38.05	H
2133	-58.67	4.25	3.00	8.26	-54.66	-13.00	-41.66	H
1422	-51.73	4.78	3.00	8.91	-47.60	-13.00	-34.60	V
2133	-53.68	4.25	3.00	8.26	-49.67	-13.00	-36.67	V

LTE Band 41 Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
4997	-39.97	7.15	3.00	9.88	-37.24	-25.00	-12.24	H
7495.5	-45.49	8.36	3.00	11.36	-42.49	-25.00	-17.49	H
4997	-42.36	7.15	3.00	9.88	-39.63	-25.00	-14.63	V
7495.5	-47.36	8.36	3.00	11.36	-44.36	-25.00	-19.36	V

LTE Band 41 Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5186	-40.13	7.26	3.00	10.03	-37.36	-25.00	-12.36	H
7779	-45.00	8.48	3.00	11.41	-42.07	-25.00	-17.07	H
5186	-44.04	7.26	3.00	10.03	-41.27	-25.00	-16.27	V
7779	-47.61	8.48	3.00	11.41	-44.68	-25.00	-19.68	V

LTE Band 41 Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5375	-42.26	7.17	3.00	9.62	-39.81	-25.00	-14.81	H
8062.5	-45.41	8.39	3.00	11.46	-42.34	-25.00	-17.34	H
5375	-42.81	7.17	3.00	9.62	-40.36	-25.00	-15.36	V
8062.5	-47.80	8.39	3.00	11.46	-44.73	-25.00	-19.73	V

LTE Band 41 Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5007	-40.11	7.15	3.00	9.88	-37.38	-25.00	-12.38	H
7510.5	-45.32	8.36	3.00	11.36	-42.32	-25.00	-17.32	H
5007	-42.63	7.15	3.00	9.88	-39.90	-25.00	-14.90	V
7510.5	-47.50	8.36	3.00	11.36	-44.50	-25.00	-19.50	V

LTE Band 41 Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5186	-40.37	7.26	3.00	10.03	-37.60	-25.00	-12.60	H
7779	-44.97	8.48	3.00	11.41	-42.04	-25.00	-17.04	H
5186	-44.07	7.26	3.00	10.03	-41.30	-25.00	-16.30	V
7779	-47.59	8.48	3.00	11.41	-44.66	-25.00	-19.66	V

LTE Band 41 Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5365	-42.18	7.17	3.00	9.62	-39.73	-25.00	-14.73	H
8047.5	-45.62	8.39	3.00	11.46	-42.55	-25.00	-17.55	H
5365	-43.10	7.17	3.00	9.62	-40.65	-25.00	-15.65	V
8047.5	-47.79	8.39	3.00	11.46	-44.72	-25.00	-19.72	V

LTE Band 41_Channel Bandwidth 15MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5007	-40.06	7.15	3.00	9.88	-37.33	-25.00	-12.33	H
7510.5	-45.54	8.36	3.00	11.36	-42.54	-25.00	-17.54	H
5007	-42.33	7.15	3.00	9.88	-39.60	-25.00	-14.60	V
7510.5	-47.62	8.36	3.00	11.36	-44.62	-25.00	-19.62	V

LTE Band 41_Channel Bandwidth 15MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5180	-40.28	7.15	3.00	9.88	-37.55	-25.00	-12.55	H
7779	-45.27	8.36	3.00	11.36	-42.27	-25.00	-17.27	H
5180	-42.55	7.15	3.00	9.88	-39.82	-25.00	-14.82	V
7779	-47.55	8.36	3.00	11.36	-44.55	-25.00	-19.55	V

LTE Band 41_Channel Bandwidth 15MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5365	-40.48	7.26	3.00	10.03	-37.71	-25.00	-12.71	H
8047.5	-45.02	8.48	3.00	11.41	-42.09	-25.00	-17.09	H
5365	-44.05	7.26	3.00	10.03	-41.28	-25.00	-16.28	V
8047.5	-47.71	8.48	3.00	11.41	-44.78	-25.00	-19.78	V

LTE Band 41_Channel Bandwidth 20MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5012	-42.23	7.17	3.00	9.62	-39.78	-25.00	-14.78	H
7518	-45.62	8.39	3.00	11.46	-42.55	-25.00	-17.55	H
5012	-42.73	7.17	3.00	9.62	-40.28	-25.00	-15.28	V
7518	-47.60	8.39	3.00	11.46	-44.53	-25.00	-19.53	V

LTE Band 41_Channel Bandwidth 20MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5180	-40.08	7.15	3.00	9.88	-37.35	-25.00	-12.35	H
7779	-45.29	8.36	3.00	11.36	-42.29	-25.00	-17.29	H
5180	-42.49	7.15	3.00	9.88	-39.76	-25.00	-14.76	V
7779	-47.49	8.36	3.00	11.36	-44.49	-25.00	-19.49	V

LTE Band 41_Channel Bandwidth 20MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
5360	-40.16	7.26	3.00	10.03	-37.39	-25.00	-12.39	H
8040	-45.26	8.48	3.00	11.41	-42.33	-25.00	-17.33	H
5360	-43.99	7.26	3.00	10.03	-41.22	-25.00	-16.22	V
8040	-47.51	8.48	3.00	11.41	-44.58	-25.00	-19.58	V

LTE Band 66 Channel Bandwidth 1.4MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.4	-40.84	7.15	3.00	9.88	-38.11	-13.00	-25.11	H
5132.1	-45.33	8.36	3.00	11.36	-42.33	-13.00	-29.33	H
3421.4	-42.50	7.15	3.00	9.88	-39.77	-13.00	-26.77	V
5132.1	-47.31	8.36	3.00	11.36	-44.31	-13.00	-31.31	V

LTE Band 66 Channel Bandwidth 1.4MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3465.0	-40.23	7.26	3.00	10.03	-37.46	-13.00	-24.46	H
5197.5	-45.66	8.48	3.00	11.41	-42.73	-13.00	-29.73	H
3465.0	-43.53	7.26	3.00	10.03	-40.76	-13.00	-27.76	V
5197.5	-47.28	8.48	3.00	11.41	-44.35	-13.00	-31.35	V

LTE Band 66 Channel Bandwidth 1.4MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3507.8	-42.59	7.17	3.00	9.62	-40.14	-13.00	-27.14	H
5261.6	-45.54	8.39	3.00	11.46	-42.47	-13.00	-29.47	H
3507.8	-42.27	7.17	3.00	9.62	-39.82	-13.00	-26.82	V
5261.6	-47.87	8.39	3.00	11.46	-44.80	-13.00	-31.80	V

LTE Band 66 Channel Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
2425.0	-40.84	7.15	3.00	9.88	-38.11	-13.00	-25.11	H
5131.1	-45.20	8.36	3.00	11.36	-42.20	-13.00	-29.20	H
2425.0	-42.44	7.15	3.00	9.88	-39.71	-13.00	-26.71	V
5131.1	-47.37	8.36	3.00	11.36	-44.37	-13.00	-31.37	V

LTE Band 66 Channel Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3460.0	-40.35	7.26	3.00	10.03	-37.58	-13.00	-24.58	H
5191.5	-45.50	8.48	3.00	11.41	-42.57	-13.00	-29.57	H
3460.0	-43.61	7.26	3.00	10.03	-40.84	-13.00	-27.84	V
5191.5	-47.09	8.48	3.00	11.41	-44.16	-13.00	-31.16	V

LTE Band 66 Channel Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3500.6	-42.62	7.17	3.00	9.62	-40.17	-13.00	-27.17	H
5250.8	-45.49	8.39	3.00	11.46	-42.42	-13.00	-29.42	H
3500.6	-42.49	7.17	3.00	9.62	-40.04	-13.00	-27.04	V
5250.8	-47.95	8.39	3.00	11.46	-44.88	-13.00	-31.88	V

LTE Band 66 Channel Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3420.8	-40.66	7.15	3.00	9.88	-37.93	-13.00	-24.93	H
5131.9	-45.08	8.36	3.00	11.36	-42.08	-13.00	-29.08	H
3420.8	-42.45	7.15	3.00	9.88	-39.72	-13.00	-26.72	V
5131.9	-47.35	8.36	3.00	11.36	-44.35	-13.00	-31.35	V

LTE Band 66 Channel Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3456.0	-39.99	7.26	3.00	10.03	-37.22	-13.00	-24.22	H
5184.4	-45.60	8.48	3.00	11.41	-42.67	-13.00	-29.67	H
3456.0	-43.47	7.26	3.00	10.03	-40.70	-13.00	-27.70	V
5184.4	-47.19	8.48	3.00	11.41	-44.26	-13.00	-31.26	V

LTE Band 66 Channel Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3490.9	-42.60	7.17	3.00	9.62	-40.15	-13.00	-27.15	H
5236.9	-45.31	8.39	3.00	11.46	-42.24	-13.00	-29.24	H
3490.9	-42.18	7.17	3.00	9.62	-39.73	-13.00	-26.73	V
5236.9	-47.69	8.39	3.00	11.46	-44.62	-13.00	-31.62	V

LTE Band 66 Channel Channel Bandwidth 20MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3421.9	-40.94	7.15	3.00	9.88	-38.21	-13.00	-25.21	H
5133.0	-45.33	8.36	3.00	11.36	-42.33	-13.00	-29.33	H
3421.9	-42.43	7.15	3.00	9.88	-39.70	-13.00	-26.70	V
5133.0	-47.50	8.36	3.00	11.36	-44.50	-13.00	-31.50	V

LTE Band 66 Channel Channel Bandwidth 20MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3447.0	-40.34	7.26	3.00	10.03	-37.57	-13.00	-24.57	H
5170.5	-45.39	8.48	3.00	11.41	-42.46	-13.00	-29.46	H
3447.0	-43.45	7.26	3.00	10.03	-40.68	-13.00	-27.68	V
5170.5	-47.10	8.48	3.00	11.41	-44.17	-13.00	-31.17	V

LTE Band 66 Channel Channel Bandwidth 20MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
3472.1	-42.66	7.17	3.00	9.62	-40.21	-13.00	-27.21	H
5208.4	-45.51	8.39	3.00	11.46	-42.44	-13.00	-29.44	H
3472.1	-42.27	7.17	3.00	9.62	-39.82	-13.00	-26.82	V
5208.4	-47.74	8.39	3.00	11.46	-44.67	-13.00	-31.67	V

LTE Band 71_Channel Bandwidth 5MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1331.0	-40.93	7.15	3.00	9.88	-38.20	-13.00	-25.20	H
1996.5	-45.42	8.36	3.00	11.36	-42.42	-13.00	-29.42	H
1331.0	-42.49	7.15	3.00	9.88	-39.76	-13.00	-26.76	V
1996.5	-47.38	8.36	3.00	11.36	-44.38	-13.00	-31.38	V

LTE Band 71_Channel Bandwidth 5MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1361.0	-40.03	7.26	3.00	10.03	-37.26	-13.00	-24.26	H
2041.5	-45.48	8.48	3.00	11.41	-42.55	-13.00	-29.55	H
1361.0	-43.40	7.26	3.00	10.03	-40.63	-13.00	-27.63	V
2041.5	-47.21	8.48	3.00	11.41	-44.28	-13.00	-31.28	V

LTE Band 71_Channel Bandwidth 5MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1391.0	-42.81	7.17	3.00	9.62	-40.36	-13.00	-27.36	H
2086.5	-45.27	8.39	3.00	11.46	-42.20	-13.00	-29.20	H
1391.0	-42.21	7.17	3.00	9.62	-39.76	-13.00	-26.76	V
2086.5	-47.87	8.39	3.00	11.46	-44.80	-13.00	-31.80	V

LTE Band 71_Channel Bandwidth 10MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1336.0	-40.87	7.15	3.00	9.88	-38.14	-13.00	-25.14	H
2004.0	-45.43	8.36	3.00	11.36	-42.43	-13.00	-29.43	H
1336.0	-42.32	7.15	3.00	9.88	-39.59	-13.00	-26.59	V
2004.0	-47.58	8.36	3.00	11.36	-44.58	-13.00	-31.58	V

LTE Band 71_Channel Bandwidth 10MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1361.0	-40.11	7.26	3.00	10.03	-37.34	-13.00	-24.34	H
2041.5	-45.41	8.48	3.00	11.41	-42.48	-13.00	-29.48	H
1361.0	-43.67	7.26	3.00	10.03	-40.90	-13.00	-27.90	V
2041.5	-46.99	8.48	3.00	11.41	-44.06	-13.00	-31.06	V

LTE Band 71_Channel Bandwidth 10MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1386.0	-42.56	7.17	3.00	9.62	-40.11	-13.00	-27.11	H
2079.0	-45.62	8.39	3.00	11.46	-42.55	-13.00	-29.55	H
1386.0	-42.35	7.17	3.00	9.62	-39.90	-13.00	-26.90	V
2079.0	-47.80	8.39	3.00	11.46	-44.73	-13.00	-31.73	V

LTE Band 71_Channel Bandwidth 20MHz_QPSK_Low Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1346.0	-40.59	7.15	3.00	9.88	-37.86	-13.00	-24.86	H
2019.0	-45.14	8.36	3.00	11.36	-42.14	-13.00	-29.14	H
1346.0	-42.37	7.15	3.00	9.88	-39.64	-13.00	-26.64	V
2019.0	-47.42	8.36	3.00	11.36	-44.42	-13.00	-31.42	V

LTE Band 71_Channel Bandwidth 20MHz_QPSK_Middle Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1366.0	-40.01	7.26	3.00	10.03	-37.24	-13.00	-24.24	H
2049.0	-45.54	8.48	3.00	11.41	-42.61	-13.00	-29.61	H
1366.0	-43.51	7.26	3.00	10.03	-40.74	-13.00	-27.74	V
2049.0	-47.33	8.48	3.00	11.41	-44.40	-13.00	-31.40	V

LTE Band 71_Channel Bandwidth 20MHz_QPSK_High Channel

Frequency (MHz)	P _{Mea} (dBm)	P _{cl} (dB)	Diatance	G _a Antenna Gain(dB)	Peak EIRP (dBm)	Limit (dBm)	Margin (dB)	Polarization
1376.0	-42.75	7.17	3.00	9.62	-40.30	-13.00	-27.30	H
2064.0	-45.62	8.39	3.00	11.46	-42.55	-13.00	-29.55	H
1376.0	-42.24	7.17	3.00	9.62	-39.79	-13.00	-26.79	V
2064.0	-47.85	8.39	3.00	11.46	-44.78	-13.00	-31.78	V

3.6. Frequency Stability under Temperature & Voltage Variations

LIMIT

FCC

- § 2.1055 (a), § 2.1055 (d) & following:

- §22.355, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table of this section. For Mobile devices operating in the 824 to 849 MHz band at a power level less than or equal to 3 Watts, the limit specified in Table C-1 is +/- 2.5 ppm.

- §24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

- §27.54, the frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

IC

- RSS-Gen Issue 5

6.11, for licensed devices, the following measurement conditions apply:

a. at the temperatures of -30°C (-22°F), +20°C (+68°F) and +50°C (+122°F), and at the manufacturer's rated supply voltage

- RSS-130 Issue 2

4.5, the transmitter frequency stability limit shall be determined as follows:

For equipment that is capable of transmitting numerous channels simultaneously for different applications (e.g. LTE and narrowband – internet of things (IoT)), the occupied bandwidth shall be the bandwidth representing the sum of the occupied bandwidths of these channels. The frequency stability shall be sufficient to ensure that the occupied bandwidth remains within each frequency block range when tested at the temperature and supply voltage variations specified in RSS-Gen.

- RSS-132 Issue 3

5.3, the carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

- RSS-133 Issue 6

6.3, the carrier frequency shall not depart from the reference frequency, in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

- RSS-139 Issue 3

6.4, the frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

- RSS-199 Issue 3

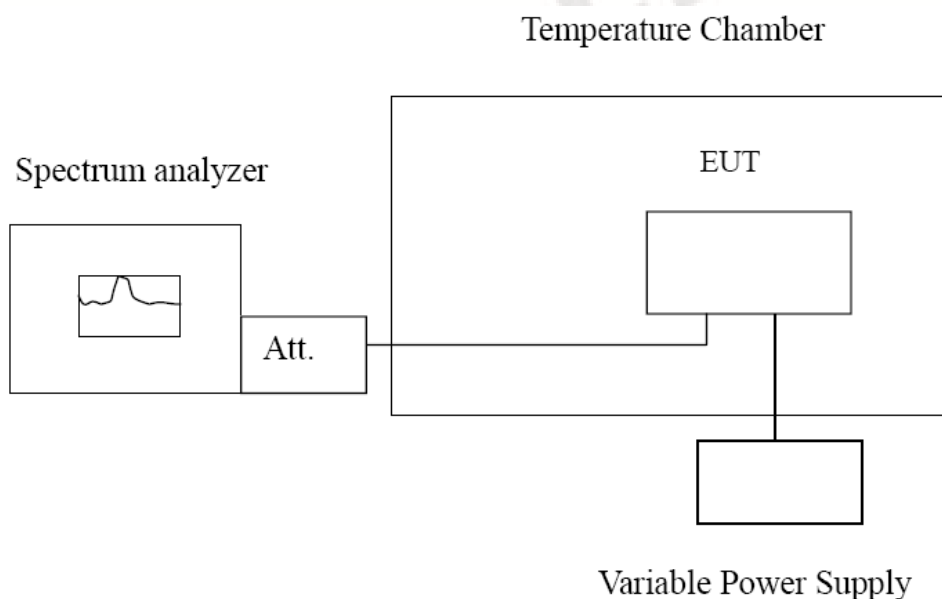
4.3, the transmitter frequency stability limit shall be determined as follows:

(a) the frequency offset shall be measured according to the procedure described in RSS-Gen and recorded.

(b) using a resolution bandwidth equal to that permitted within the 1 MHz band immediately outside the channel edge, as found in section 4.5, reference points will be selected at the unwanted emission limits, which comply with the attenuation specified in section 4.5 for the type of device under test, on the emission mask of the lowest and highest channels. The frequency at these points shall be recorded as fL and Fh respectively.

The applicant shall ensure compliance with frequency stability requirements by showing that fL minus the frequency offset and fH plus the frequency offset is within the frequency range in which the equipment is designed to operate.

TEST CONFIGURATION



TEST PROCEDURE

The EUT was setup according to EIA/TIA 603D

Frequency Stability under Temperature Variations:

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a "call mode". This is accomplished with the use of R&S CMW500 DIGITAL RADIO COMMUNICATION TESTER.

1. Measure the carrier frequency at room temperature.
2. Subject the EUT to overnight soak at -30°C.
3. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on middle channel for LTE band 4, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
4. Repeat the above measurements at 10°C increments from -30°C to +50°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements.
5. Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1.5 hours unpowered, to allow any self-heating to stabilize, before continuing.
6. Subject the EUT to overnight soak at +50°C.
7. With the EUT, powered via nominal voltage, connected to the CMW500 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.
8. Repeat the above measurements at 10 °C increments from +50°C to -30°C. Allow at least 1.5 hours at each temperature, unpowered, before making measurements
9. At all temperature levels hold the temperature to +/- 0.5°C during the measurement procedure.

Frequency Stability under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 15\%$) and endpoint, record the maximum frequency change.

TEST RESULTS

1. Please refer to Appendix B: Section 5
2. Please refer to Appendix E: Section 5
3. Please refer to Appendix G: Section 5
4. Please refer to Appendix H: Section 5
5. Please refer to Appendix I: Section 5
6. Please refer to Appendix K: Section 5
7. Please refer to Appendix O: Section 5
8. Please refer to Appendix P: Section 5
9. Please refer to Appendix Q: Section 5

3.7. Modulation Characteristics

Standard Applicable

According to FCC Part 2 §2.1047:

(a) Voice modulated communication equipment. A curve or equivalent data showing the frequency response of the audio modulating circuit over a range of 100 to 5000 Hz shall be submitted. For equipment required to have an audio low-pass filter, a curve showing the frequency response of the filter, or of all circuitry installed between the modulation limiter and the modulated stage shall be submitted.

(b) Equipment which employs modulation limiting. A curve or family of curves showing the percentage of modulation versus the modulation input voltage shall be supplied. The information submitted shall be sufficient to show modulation limiting capability throughout the range of modulating frequencies and input modulating signal levels employed.

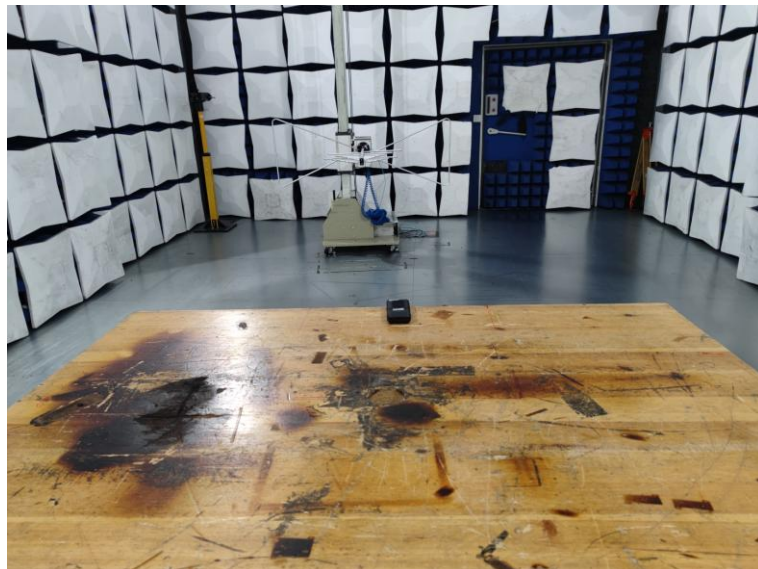
(c) Single sideband and independent sideband radiotelephone transmitters which employ a device or circuit to limit peak envelope power. A curve showing the peak envelope power output versus the modulation input voltage shall be supplied. The modulating signals shall be the same in frequency as specified in paragraph (c) of §2.1049 for the occupied bandwidth tests.

(d) Other types of equipment. A curve or equivalent data which shows that the equipment will meet the modulation requirements of the rules under which the equipment is to be licensed.

TEST RESULTS

1. Please refer to Appendix B: Section 3
2. Please refer to Appendix E: Section 3
3. Please refer to Appendix G: Section 3
4. Please refer to Appendix H: Section 3
5. Please refer to Appendix I: Section 3
6. Please refer to Appendix K: Section 3
7. Please refer to Appendix O: Section 3
8. Please refer to Appendix P: Section 3
9. Please refer to Appendix Q: Section 3

4. Test Setup Photos of the EUT



5. External and Internal Photos of the EUT

Reference to the test report No. CTL2106018081-W01

***** End of Report *****