



**Version**

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UTTR-RF-FCC4G-V1.1

**APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS.....53**



## 1. GENERAL INFORMATION

### 1.1 CLIENT INFORMATION

<b>Applicant:</b>	ecom instruments GmbH
<b>Address of Applicant:</b>	Industriestrasse 2, 97959 Assamstadt, Germany
<b>Manufacturer:</b>	Pepperl+Fuchs SE
<b>Address of Manufacturer:</b>	Lilienthalstrasse 200, 68307 Mannheim, Germany

### 1.2 EUT INFORMATION

#### 1.2.1 General Description of EUT

<b>Product Name:</b>	Featurephone			
<b>Model No.:</b>	Ex-Handy 10			
<b>Trade Mark:</b>	ecom			
<b>DUT Stage:</b>	Production Unit			
<b>EUT Supports Function:</b>	GSM Bands:	GSM850/ PCS 1900		
	UTRA Bands:	Band II/ Band IV/ Band V		
	E-UTRA Bands:	FDD Band 2/ Band 4/ Band 5/ Band 7/ Band 12/ Band 13/ Band 25/ Band 26/ Band 66/ Band 71		
		TDD Band 41		
	2.4 GHz ISM Band:	IEEE 802.11b/g/n		
		Bluetooth V4.2		
	5 GHz U-NII Bands:	5 150 MHz to 5 250 MHz	IEEE 802.11a/n	
		5 250 MHz to 5 350 MHz	IEEE 802.11a/n	
5 470 MHz to 5 725 MHz		IEEE 802.11a/n		
5 725 MHz to 5 850 MHz		IEEE 802.11a/n		
NFC:	13.553 MHz to 13.567 MHz			
<b>Sample Received Date:</b>	May 12, 2021			
<b>Sample Tested Date:</b>	May 12, 2021 to June 10, 2021			

#### 1.2.2 Description of Accessories

AC Adapter	
<b>Model No.:</b>	S008ACM0500200
<b>Input:</b>	100-240 V~50/60 Hz 300 mA
<b>Output:</b>	5.0 V = 2000 mA
<b>Manufacturer:</b>	TEN PAO INTERNATIONAL LTD.

Battery	
<b>Model No.:</b>	Ex-BP H10
<b>Rated Voltage:</b>	3.7 Vdc
<b>Limited Charge Voltage:</b>	4.14 Vdc
<b>Rated Capacity:</b>	4400 mAh
<b>Manufacturer:</b>	ecom instruments GmbH

Cable	
<b>Connector:</b>	USB Changing Cable
<b>Cable Type:</b>	Shielded without ferrite
<b>Length:</b>	1.20 Meter

### Shenzhen UnionTrust Quality and Technology Co., Ltd.

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<b>Manufacturer:</b>	Dongguan YongGu Electronics Prouduction Co., Ltd.
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### 1.3 PRODUCT SPECIFICATION SUBJECTIVE TO THIS STANDARD

<b>Support Networks:</b>	LTE	
<b>Type of Modulation:</b>	LTE Band 2/4/5/7/12/13/25/26/41/66/71:	QPSK, 16QAM
<b>Antenna Type:</b>	Internal Antenna	
<b>Antenna Gain:</b>	LTE Band 2:	0 dBi
	LTE Band 4:	0 dBi
	LTE Band 5:	-3 dBi
	LTE Band 7:	0 dBi
	LTE Band 12:	-3 dBi
	LTE Band 13:	-3 dBi
	LTE Band 25:	0 dBi
	LTE Band 26:	-3 dBi
	LTE Band 41:	0 dBi
	LTE Band 66:	0 dBi
	LTE Band 71:	-3 dBi
<b>IEMI:</b>	Radiation: 356248101018922	
	Conducted: 356248101028855	
<b>Normal Test Voltage:</b>	3.7 Vdc	
<b>Extreme Test Voltage:</b>	3.5 to 4.2Vdc	
<b>Extreme Test Temperature:</b>	-10 °C to +45 °C	

### 1.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested with associated equipment below.

1) Support Cable

Cable No.	Description	Connector	Length	Supplied by
1	Antenna Cable	SMA	0.30 Meter	UnionTrust

### 1.5 TEST LOCATION

**Shenzhen UnionTrust Quality and Technology Co., Ltd.**

Address: Unit D/E of 9/F and 16/F, Block A, Building 6, Baoneng science and technology park, Longhua district, Shenzhen, China  
 Telephone: +86 (0) 755 2823 0888  
 Fax: +86 (0) 755 2823 0886

### 1.6 TEST FACILITY

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

**CNAS-Lab Code: L9069**

The measuring equipment utilized to perform the tests documented in this report has been calibrated once a year or in accordance with the manufacturer's recommendations, and is traceable under the ISO/IEC 17025 to international or national standards. Equipment has been calibrated by accredited calibration laboratories.

**A2LA-Lab Certificate No.: 4312.01**

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

**ISED Wireless Device Testing Laboratories**

CAB identifier: CN0032

**FCC Accredited Lab.**

Designation Number: CN1194

Test Firm Registration Number: 259480

### 1.7 DEVIATION FROM STANDARDS

None.

### 1.8 ABNORMALITIES FROM STANDARD CONDITIONS

None.

### 1.9 OTHER INFORMATION REQUESTED BY THE CUSTOMER

None.

### 1.10 MEASUREMENT UNCERTAINTY

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

No.	Item	Measurement Uncertainty
1	Conducted emission 9kHz-150kHz	±3.2 dB
2	Conducted emission 150kHz-30MHz	±2.7 dB
3	Radiated spurious emissions 30MHz-1GHz	± 4.9 dB
4	Radiated spurious emissions 1GHz-18GHz	± 4.8 dB
5	Radiated spurious emissions 18GHz-40GHz	± 5.1 dB
6	Occupied Bandwidth	± 1.86 %
7	DC Supply Voltages	± 0.68 %
8	Temperature	± 0.62 °C
9	Humidity	± 3.9 %
10	Conducted spurious emissions	± 2.7 dB
11	DC Supply Voltages	± 0.68 %
12	AC Supply Voltages	± 1.2 %
13	Radio Frequency	± 6.5 x 10 <sup>-8</sup>
14	RF Power, Conducted	± 0.9 dB



## 2. TEST SUMMARY

FCC 47 CFR Part 24 Test Cases (Band 2 & Band 25)			
Test Item	Test Requirement	Test Method	Result
Equivalent Isotropic Radiated Power (EIRP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 24.232(c)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 24.232(c)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	FCC 47 CFR Part 24.232(d)	KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h) & FCC 47 CFR Part 24.238(b)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Band Edge at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 24.238(a)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 24.238(a)(b)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 24.238(a)(b)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 24.235	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

FCC 47 CFR Part 27 Test Cases (LTE Band 4 & Band 66)			
Test Item	Test Requirement	Test Method	Result
Equivalent Isotropic Radiated Power (EIRP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(d)(4)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(d)(4)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h) & FCC 47 CFR Part 27.53(h)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(h)(1)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(h)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(h)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

FCC 47 CFR Part 22 Test Cases (Band 5 & Band 26)			
Test Item	Test Requirement	Test Method	Result
Effective Radiated Power (ERP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 22.913(a)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 22.913(a)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	FCC 47 CFR Part 22.913(a)	KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Band Edge at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 22.917(a)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 22.917(a)(b)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 22.917(a)(b)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 22.355	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

FCC 47 CFR Part 27 Test Cases (LTE Band 7 & Band 41)			
Test Item	Test Requirement	Test Method	Result
Equivalent Isotropic Radiated Power (EIRP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(h)(2)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(h)(2)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(m)(4)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(m)(4)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(m)(4)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

FCC 47 CFR Part 27 Test Cases (LTE Band 12 & 71)			
Test Item	Test Requirement	Test Method	Result
Effective Radiated Power (ERP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(c)(10)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(c)(10)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h) & FCC 47 CFR Part 27.53(g)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Band Edge at antenna terminals	FCC 47 CFR Part 27.53(g)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53(g)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53(g)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

FCC 47 CFR Part 27 Test Cases (LTE Band 13)			
Test Item	Test Requirement	Test Method	Result
Effective Radiated Power (ERP)	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(b)(10)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 27.50(b)(10)	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	FCC 47 CFR Part 27.50(d)(5)	KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h)	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Band Edge at antenna terminals	FCC 47 CFR Part 27.53	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 27.53	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 27.53	ANSI C63.26-2015 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 27.54	ANSI C63.26-2015 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

FCC 47 CFR Part 90 Test Cases (LTE Band 26)			
Test Item	Test Requirement	Test Method	Result
Effective Radiated Power (ERP)	FCC 47 CFR Part 2.1046 & FCC 47 CFR Part 90.635	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Conducted Output Power	FCC 47 CFR Part 2.1046(a) & FCC 47 CFR Part 90.635	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Peak-to-average ratio	N/A	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	Verified (SEE Note 1)
99%&26dB Bandwidth	FCC 47 CFR Part 2.1049(h)	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Emission Mask	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 90.691	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Spurious emissions at antenna terminals	FCC 47 CFR Part 2.1051 & FCC 47 CFR Part 90.691	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	Verified (SEE Note 1)
Field strength of spurious radiation	FCC 47 CFR Part 2.1053 & FCC 47 CFR Part 90.691	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	PASS
Frequency stability	FCC 47 CFR Part 2.1055 & FCC 47 CFR Part 90.213	ANSI/TIA-603-E-2016 & KDB 971168 D01v03r01	Verified (SEE Note 1)
<b>Note:</b>			
1) This report is based on the previous report that changed the baseband processor. The main difference is that the new baseband processor doesn't support CA. After the evaluation, the technical data is referred to previous report: no. R1901H0001-R5 dated July 5, 2019.			

### 3. EQUIPMENT LIST

Test Equipment List						
Used	Equipment	Manufacturer	Model No.	Serial Number	Cal. date (mm dd, yyyy)	Cal. Due date (mm dd, yyyy)
<input checked="" type="checkbox"/>	3M SAC	ETS-LINDGREN	3M	N/A	Jan. 22, 2021	Jan. 21, 2024
<input checked="" type="checkbox"/>	Receiver	R&S	ESIB26	100114	Nov. 18, 2020	Nov. 17, 2021
<input type="checkbox"/>	Loop Antenna	ETS-LINDGREN	6502	00202525	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	Broadband Antenna	ETS-LINDGREN	3142E	00201566	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	6dB Attenuator	Talent	RA6A5-N-18	18103001	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	Preamplifier	HP	8447F	2805A02960	Nov. 10, 2020	Nov. 9, 2021
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3117-PA	00201541	Apr. 30, 2021	Apr. 29, 2023
<input checked="" type="checkbox"/>	Pre-amplifier	ETS-Lindgren	118385	00201874	Nov. 10, 2020	Nov. 9, 2021
<input checked="" type="checkbox"/>	Double-Ridged Waveguide Horn Antenna (Pre-amplifier)	ETS-LINDGREN	3116C-PA	00202652	Nov. 14, 2020	Nov. 13, 2022
<input checked="" type="checkbox"/>	Pre-amplifier	ETS-Lindgren	00118384	00202652	Nov. 17, 2020	Nov. 16, 2022
<input checked="" type="checkbox"/>	Wideband Radio Communication Tester	R&S	CMW500	120932	Jul. 20, 2020	Jul. 19, 2021
<input checked="" type="checkbox"/>	Multi device Controller	ETS-LINDGREN	7006-001	00160105	N/A	N/A
<input checked="" type="checkbox"/>	Test Software	Audix	e3	Software Version: 9.160323		



#### 4. TEST CONFIGURATION

##### 4.1 ENVIRONMENTAL CONDITIONS FOR TESTING

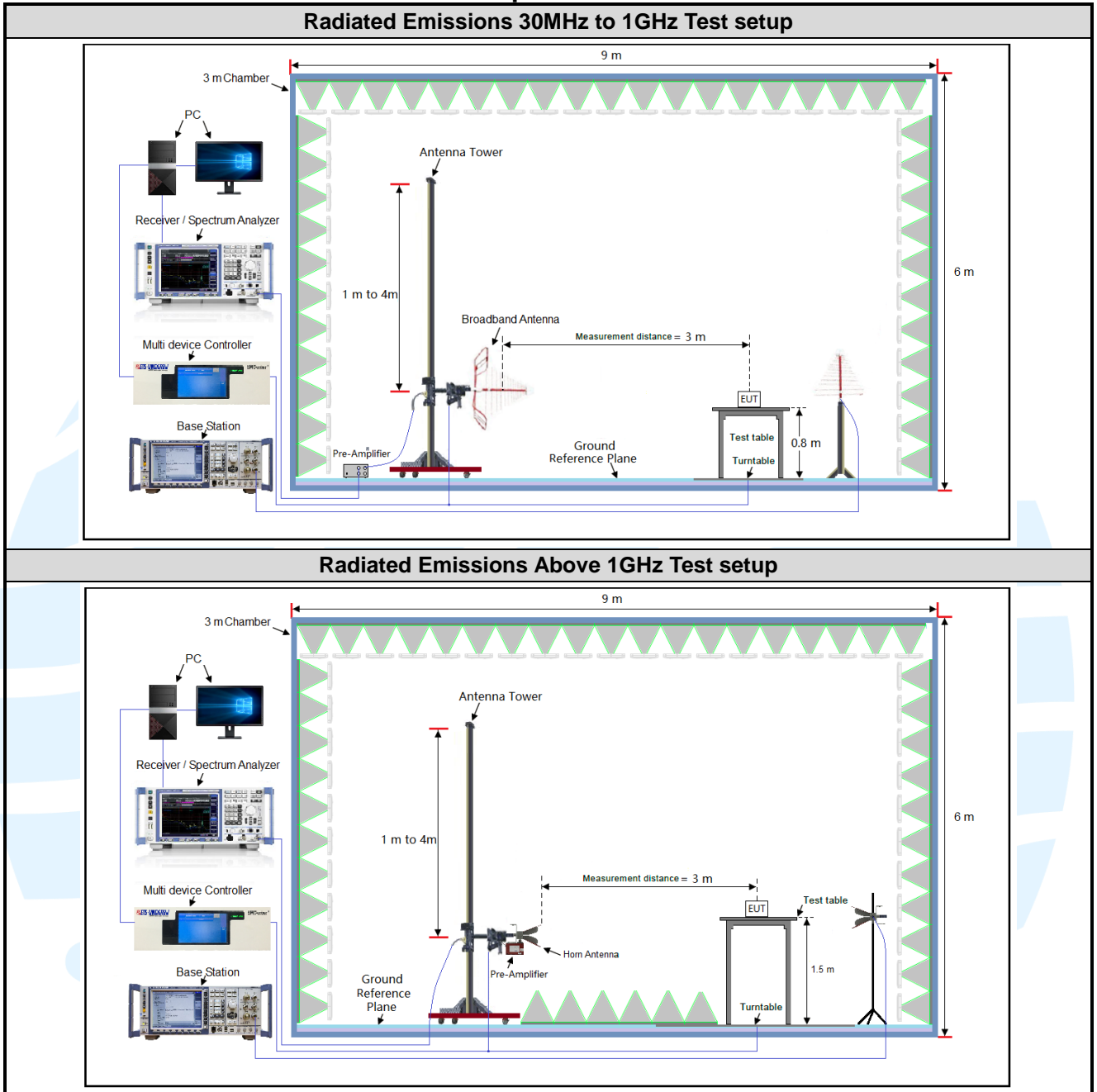
Test Environment	Selected Values During Tests		
Test Condition	Ambient		
	Temperature (°C)	Voltage (V)	Relative Humidity (%)
TN/VN	+15 to +35	3.7	20 to 75
TL/VL	-10	3.5	20 to 75
TH/VL	+45	3.5	20 to 75
TL/VH	-10	4.2	20 to 75
TH/VH	+45	4.2	20 to 75

**Remark:**

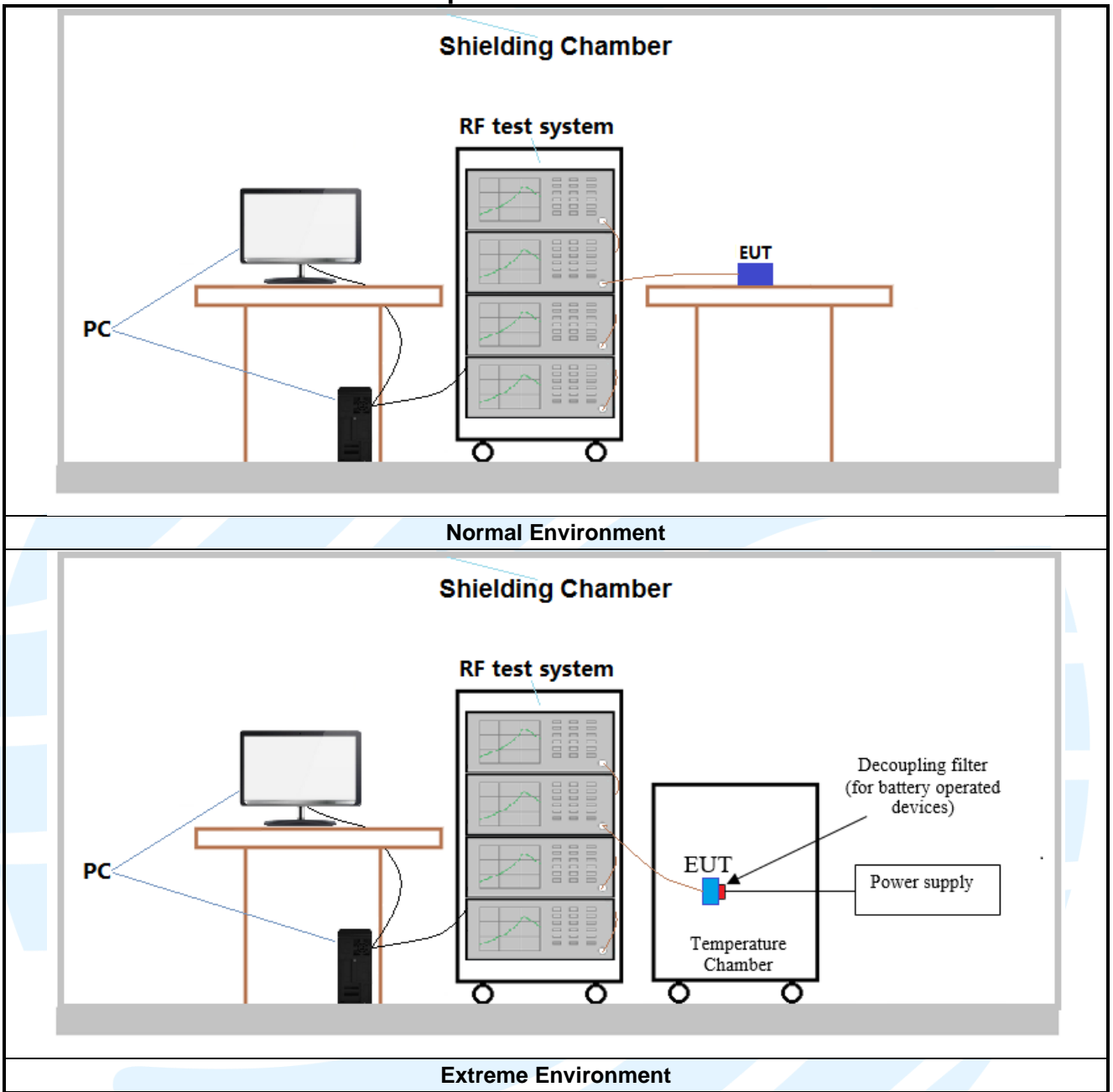
- 1) The EUT just work in such extreme temperature of -10 °C to +45 °C and the extreme voltage of 3.5 V to 4.2 V, so here the EUT is tested in the temperature of -10 °C to +45 °C and the voltage of 3.5 V to 4.2 V.
- 2) VN: Normal Voltage; TN: Normal Temperature;  
 TL: Low Extreme Test Temperature; TH: High Extreme Test Temperature;  
 VL: Low Extreme Test Voltage; VH: High Extreme Test Voltage.

## 4.2 TEST SETUP

### 4.2.1 For Radiated Emissions test setup



4.2.2 For Conducted RF test setup





### 4.3 TEST CHANNELS

Band	Test Frequency ID	Bandwidth (MHz)	Number [UL]	Frequency of Uplink (MHz)	
LTE Band 2 TX: 1850-1910MHz	Low Range	1.4	18607	1850.7	
		3	18615	1851.5	
		5	18625	1852.5	
		10	18650	1855	
		15	18675	1857.5	
		20	18700	1860	
	Middle Range	1.4/3/5/10/15/20	18900	1880	
	High Range	1.4	19193	1909.3	
		3	19185	1908.5	
		5	19175	1907.5	
		10	19150	1905	
		15	19125	1902.5	
		20	19100	1900	
	LTE Band 4 TX: 1710-1755MHz	Low Range	1.4	19957	1710.7
3			19965	1711.5	
5			19975	1712.5	
10			20000	1715	
15			20025	1717.5	
20			20050	1720	
Middle Range		1.4/3/5/10/ 15/20	20175	1732.5	
High Range		1.4	20393	1754.3	
		3	20385	1753.5	
		5	20375	1752.5	
		10	20350	1750	
		15	20325	1747.5	
		20	20300	1745	
LTE band 5 TX: 824-849MHz		Low Range	1.4	20407	824.7
	3		20415	825.5	
	5		20425	826.5	
	10		20450	829	
	Middle Range	1.4/3/5/10	20525	836.5	
	High Range	1.4	20643	848.3	
		3	20635	847.5	
		5	20625	846.5	
		10	20600	844	
		LTE Band 7 TX: 2500-2570MHz	Low Range	5	20775
10				20800	2505
15	20825			2507.5	
20	20850			2510	
Middle Range	5/10/15/20		21100	2535	
High Range	5		21425	2567.5	
	10		21400	2565	
	15	21375	2562.5		

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		20	21350	2560
LTE Band 12 TX: 699-716MHz	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Middle Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
10		23130	711	
LTE Band 13 TX: 777-787MHz	Low Range	5	23205	779.5
		10	23230	782
	Middle Range	5/10	23230	782
	High Range	5	23255	784.5
10		23230	782	
LTE Band 25 TX: 1850-1915MHz	Low Range	1.4	26047	1850.7
		3	26055	1851.5
		5	26065	1852.5
		10	26090	1855
		15	26115	1857.5
		20	26140	1860
	Middle Range	1.4/3/5/10/15/20	26340	1880
	High Range	1.4	26683	1914.3
		3	26675	1913.5
		5	26665	1912.5
		10	26640	1910
15		26615	1907.5	
20	26590	1905		
LTE band 26 TX:824-849MHz	Low Range	1.4	26797	824.7
		3	26805	825.5
		5	26815	826.5
		10	26840	829
		15	26865	831.5
	Middle Range	1.4/3/5/10/15	26915	836.5
	High Range	1.4	27033	848.3
		3	27025	847.5
		5	27015	846.5
		10	26990	844
15		26965	841.5	
LTE band 26 TX: 814-824MHz	Low Range	1.4	26697	814.7
		3	26705	815.5
		5	26715	816.5
		10	/	/
		15	26765	821.5
	Middle Range	1.4/3/5/10	26740	819
	High Range	1.4	26783	823.3

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		3	26775	822.5
		5	26765	821.5
		10	/	/
		15	/	/
LTE Band 41 TX: 2496-2690MHz	Low Range	5	39675	2498.5
		10	39700	2501
		15	39725	2503.5
		20	39750	2506
	Middle Range	5/10/ 15/20	40620	2593
	High Range	5	41565	2687.5
		10	41540	2685
		15	41515	2682.5
20		41490	2680	
LTE Band 66 TX: 1710-1780MHz	Low Range	1.4	131979	1710.7
		3	131987	1711.5
		5	131997	1712.5
		10	132022	1715
		15	132047	1717.5
		20	132072	1720
	Middle Range	1.4/3/5/10/ 15/20	132322	1745
	High Range	1.4	132665	1779.3
		3	132657	1778.5
		5	132647	1777.5
		10	132622	1775
		15	132597	1772.5
		20	132572	1770
LTE Band 71 TX: 663-698MHz		Low Range	5	133147
	10		133172	668
	15		133197	670.5
	20		133222	673
	Middle Range	5/10/15	133297	680.5
		20	133322	683
	High Range	5	133447	695.5
		10	133422	693
		15	133397	690.5
20		133372	688	

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### 4.4 SYSTEM TEST CONFIGURATION

For emissions testing, the equipment under test (EUT) setup to transmit continuously to simplify the measurement methodology. Care was taken to ensure proper power supply voltages during testing. During testing, radiated emission were performed with the EUT set to transmit at the channel with highest output power as worst-case scenario. It was powered by a 3.7V battery. Only the worst case data were recorded in this test report.

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, X/Y/Z axis, and antenna ports.

The worst case was found when positioned as the table below.

Band	Mode	Antenna Port	Worst-case axis positioning
LTE Band 2	1TX	Chain 0	X axis
LTE Band 4	1TX	Chain 0	X axis
LTE Band 5	1TX	Chain 0	X axis
LTE Band 7	1TX	Chain 0	X axis
LTE Band 12	1TX	Chain 0	X axis
LTE Band 13	1TX	Chain 0	X axis
LTE Band 25	1TX	Chain 0	X axis
LTE Band 26	1TX	Chain 0	X axis
LTE Band 41	1TX	Chain 0	X axis
LTE Band 66	1TX	Chain 0	X axis
LTE Band 71	1TX	Chain 0	X axis

All readings are extrapolated back to the equivalent three meter reading using inverse scaling with distance. Analyzer resolution is 100 kHz or greater for frequencies below 1000MHz. The resolution is 1 MHz or greater for frequencies above 1000MHz. The spurious emissions more than 20 dB below the permissible value are not reported.

Radiated emission measurement were performed from the lowest radio frequency signal generated in the device which is greater than 9 kHz to the tenth harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower.

### 4.5 PRE-SCAN

Pre-scan under all rate at lowest middle and highest channel, find the transmitter power as below.

#### 4.5.1 LTE Band 2

LTE Band 2 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 1.4 MHz					Channel Bandwidth: 3 MHz					
QPSK	1	0	21.12	21.10	21.25	1	0	20.92	20.24	20.50
	1	2	21.50	21.29	21.35	1	7	21.33	21.06	20.98
	1	5	21.25	21.07	21.06	1	14	20.85	20.19	20.45
	3	0	21.11	21.28	20.99	8	0	19.83	19.80	19.70
	3	1	21.25	21.29	21.02	8	3	19.80	19.95	19.65
	3	3	21.08	21.32	20.87	8	7	19.61	19.77	19.59
	6	0	20.25	20.22	20.05	15	0	19.69	19.72	19.57
16QAM	1	0	20.55	20.24	20.12	1	0	19.30	19.17	19.40
	1	2	20.59	20.46	20.36	1	7	19.96	20.07	19.54
	1	5	20.36	20.31	20.09	1	14	19.47	19.40	19.49
	3	0	19.96	20.08	20.12	8	0	18.72	18.68	18.53
	3	1	20.28	20.19	20.15	8	3	18.76	18.84	18.61
	3	3	19.57	20.01	20.10	8	7	18.62	18.64	18.44
	6	0	19.14	19.43	19.19	15	0	18.87	18.64	18.53
Channel Bandwidth: 5 MHz					Channel Bandwidth: 10 MHz					
QPSK	1	0	21.07	20.26	20.57	1	0	21.01	20.28	20.62
	1	12	21.44	20.96	21.03	1	24	21.49	20.99	20.99
	1	24	20.96	20.18	20.54	1	49	20.92	20.34	20.52
	12	0	19.76	19.76	19.71	25	0	19.91	19.73	19.63
	12	6	19.87	19.88	19.61	25	12	19.81	19.88	19.64
	12	13	19.78	19.71	19.48	25	25	19.67	19.68	19.53
	25	0	19.79	19.76	19.56	50	0	19.74	19.85	19.62
16QAM	1	0	19.34	19.10	19.41	1	0	19.21	19.19	19.58
	1	12	19.86	20.11	19.62	1	24	19.87	19.96	19.65
	1	24	19.50	19.24	19.52	1	49	19.28	19.23	19.49
	12	0	18.82	18.72	18.44	25	0	18.70	18.73	18.60
	12	6	18.68	18.82	18.73	25	12	18.77	18.86	18.57
	12	13	18.65	18.53	18.44	25	25	18.58	18.66	18.33
	25	0	18.84	18.69	18.55	50	0	18.70	18.71	18.55
Channel Bandwidth: 15 MHz					Channel Bandwidth: 20 MHz					
QPSK	1	0	21.00	20.33	20.57	1	0	21.08	20.39	20.69
	1	37	21.31	21.10	20.98	1	50	<b>21.51</b>	21.14	21.09
	1	74	21.03	20.34	20.51	1	99	21.04	20.36	20.64
	37	0	19.88	19.88	19.60	50	0	19.96	19.92	19.76
	37	19	19.79	19.90	19.71	50	25	19.90	19.97	19.76
	37	39	19.66	19.76	19.50	50	50	19.81	19.83	19.62
	75	0	19.66	19.84	19.51	100	0	19.85	19.88	19.63
16QAM	1	0	19.41	19.18	19.53	1	0	20.04	19.29	19.58
	1	37	20.03	20.03	19.65	1	50	20.05	20.14	19.69
	1	74	19.35	19.28	19.44	1	99	19.39	19.41	19.56
	37	0	18.78	18.70	18.58	50	0	18.88	18.77	18.64
	37	19	18.64	18.84	18.61	50	25	18.83	18.90	18.74
	37	39	18.64	18.70	18.42	50	50	18.67	18.73	18.48
	75	0	18.69	18.63	18.53	100	0	18.89	18.82	18.60

4.5.2 LTE Band 4

LTE Band 4 Maximum Average Power (dBm)											
Modulation	RB		Test Channel			RB		Test Channel			
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High	
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz					
QPSK	1	0	20.40	20.02	20.14	1	0	19.89	19.92	20.06	
	1	2	20.44	20.10	20.43	1	7	19.90	20.03	20.38	
	1	5	20.48	19.91	19.98	1	14	19.99	19.92	19.85	
	3	0	20.13	20.16	20.17	8	0	19.14	19.15	19.27	
	3	1	20.39	19.97	20.45	8	3	19.38	19.12	19.39	
	3	3	20.12	19.95	20.37	8	7	19.13	19.05	19.51	
16QAM	6	0	19.22	19.14	19.39	15	0	19.29	19.00	19.34	
	1	0	19.54	19.44	19.49	1	0	19.27	19.44	19.33	
	1	2	19.64	19.34	19.56	1	7	19.49	19.40	19.54	
	1	5	19.34	19.29	19.03	1	14	19.11	19.31	19.14	
	3	0	18.80	19.05	19.23	8	0	18.26	18.16	18.22	
	3	1	19.42	19.34	19.38	8	3	18.57	18.41	18.35	
QPSK	3	3	19.01	19.05	19.41	8	7	18.33	18.07	18.41	
	6	0	18.05	18.16	18.28	15	0	18.51	17.99	18.38	
	Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
	QPSK	1	0	20.04	19.94	20.13	1	0	19.98	19.96	20.18
		1	12	20.01	19.93	20.43	1	24	20.06	19.96	20.39
		1	24	20.10	19.91	19.94	1	49	20.06	20.07	19.92
12		0	19.07	19.11	19.28	25	0	19.22	19.08	19.20	
12		6	19.45	19.05	19.35	25	12	19.39	19.05	19.38	
12		13	19.30	18.99	19.40	25	25	19.19	18.96	19.45	
16QAM	25	0	19.39	19.04	19.33	50	0	19.34	19.13	19.39	
	1	0	19.20	19.37	19.34	1	0	19.15	19.46	19.51	
	1	12	19.39	19.44	19.62	1	24	19.40	19.29	19.65	
	1	24	19.13	19.15	19.17	1	49	19.11	19.14	19.14	
	12	0	18.36	18.20	18.13	25	0	18.24	18.21	18.29	
	12	6	18.49	18.39	18.47	25	12	18.58	18.43	18.31	
QPSK	12	13	18.36	17.96	18.41	25	25	18.29	18.09	18.30	
	25	0	18.48	18.04	18.40	50	0	18.34	18.06	18.40	
	Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
	QPSK	1	0	19.97	20.01	20.13	1	0	20.05	20.07	20.25
		1	37	19.88	20.07	20.38	1	50	20.08	20.11	20.49
		1	74	20.17	20.07	19.91	1	99	20.18	20.09	20.04
37		0	19.19	19.23	19.17	50	0	19.27	19.27	19.33	
37		19	19.37	19.07	19.45	50	25	19.48	19.14	19.50	
37		39	19.18	19.04	19.42	50	50	19.33	19.11	19.54	
16QAM	75	0	19.26	19.12	19.28	100	0	19.45	19.16	19.40	
	1	0	19.13	19.45	19.46	1	0	19.28	19.56	19.51	
	1	37	19.56	19.36	19.65	1	50	19.58	19.47	19.69	
	1	74	19.25	19.19	19.09	1	99	19.30	19.32	19.21	
	37	0	18.32	18.18	18.27	50	0	18.42	18.25	18.33	
	37	19	18.45	18.41	18.35	50	25	18.64	18.47	18.48	
QPSK	37	39	18.35	18.13	18.39	50	50	18.38	18.16	18.45	
	75	0	18.33	17.98	18.38	100	0	18.53	18.17	18.45	

4.5.3 LTE Band 5

LTE Band 5 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz				
QPSK	1	0	20.74	20.99	20.62	1	0	20.64	20.56	20.71
	1	2	20.81	20.83	20.64	1	7	20.62	20.85	20.54
	1	5	20.66	20.60	20.46	1	14	20.76	20.54	20.44
	3	0	20.91	20.87	20.72	8	0	19.82	19.73	19.70
	3	1	20.95	20.89	20.58	8	3	19.72	19.78	19.68
	3	3	20.74	20.74	20.80	8	7	19.64	19.75	19.64
	6	0	19.95	19.76	19.73	15	0	19.66	19.77	19.67
16QAM	1	0	20.17	19.88	19.84	1	0	19.82	19.76	19.80
	1	2	20.26	20.18	19.68	1	7	20.19	20.35	19.86
	1	5	19.62	19.87	19.57	1	14	20.30	19.88	19.60
	3	0	19.55	19.86	19.64	8	0	18.70	18.83	18.73
	3	1	19.88	19.79	19.77	8	3	18.80	18.78	18.72
	3	3	19.53	19.90	19.47	8	7	18.70	18.95	18.49
	6	0	18.94	18.66	18.59	15	0	18.76	18.69	18.71
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	20.54	20.44	20.79	1	0	20.72	20.59	20.79
	1	12	20.69	20.91	20.64	1	24	20.77	21.00	20.74
	1	24	20.74	20.59	20.52	1	49	20.78	20.64	20.57
	12	0	19.88	19.82	19.63	25	0	19.91	19.87	19.80
	12	6	19.65	19.92	19.62	25	12	19.81	19.96	19.78
	12	13	19.70	19.83	19.66	25	25	19.76	19.91	19.80
	25	0	19.56	19.78	19.78	50	0	19.76	19.90	19.80
16QAM	1	0	19.92	19.82	19.77	1	0	19.99	19.96	19.96
	1	12	20.20	20.21	19.85	1	24	20.25	20.38	19.87
	1	24	20.28	19.91	19.68	1	49	20.31	19.97	19.75
	12	0	18.78	18.84	18.70	25	0	18.88	18.92	18.79
	12	6	18.90	18.72	18.83	25	12	18.95	18.91	18.92
	12	13	18.76	18.85	18.54	25	25	18.80	18.96	18.62
	25	0	18.59	18.70	18.72	50	0	18.78	18.77	18.75



4.5.4 LTE Band 7

LTE Band 7 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	20.50	20.69	20.46	1	0	20.52	20.59	20.52
	1	12	20.48	20.97	20.76	1	24	20.94	20.96	20.80
	1	24	20.30	20.74	20.39	1	49	20.55	20.81	20.52
	12	0	19.51	20.00	19.86	25	0	19.85	20.02	19.80
	12	6	19.40	19.92	19.99	25	12	19.93	19.83	19.92
	12	13	19.34	19.72	19.93	25	25	19.74	19.71	19.97
	25	0	19.45	19.91	19.68	50	0	19.95	19.77	19.81
16QAM	1	0	19.37	19.62	19.33	1	0	19.84	19.52	19.38
	1	12	19.05	19.92	19.59	1	24	19.92	19.92	19.47
	1	24	19.12	19.42	19.31	1	49	19.45	19.43	19.15
	12	0	18.26	18.82	18.97	25	0	18.77	18.73	19.07
	12	6	18.40	19.13	19.07	25	12	19.08	19.09	18.91
	12	13	18.48	18.97	19.02	25	25	18.95	19.05	19.02
	25	0	18.52	18.75	18.94	50	0	18.87	18.88	18.88
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	20.46	20.63	20.50	1	0	20.65	20.75	20.53
	1	37	20.83	21.07	20.87	1	50	21.01	21.08	20.96
	1	74	20.60	20.68	20.49	1	99	20.60	20.82	20.58
	37	0	19.84	19.94	19.92	50	0	19.95	20.02	19.94
	37	19	20.05	19.86	19.92	50	25	20.06	19.92	20.04
	37	39	19.89	19.73	20.00	50	50	19.92	19.90	20.00
	75	0	19.85	19.79	19.65	100	0	19.96	19.97	19.83
16QAM	1	0	19.95	19.56	19.37	1	0	19.96	19.66	19.48
	1	37	20.02	20.08	19.64	1	50	20.06	20.09	19.65
	1	74	19.41	19.47	19.20	1	99	19.52	19.53	19.33
	37	0	18.76	18.82	19.12	50	0	18.92	18.86	19.16
	37	19	19.12	19.09	19.02	50	25	19.12	19.15	19.10
	37	39	18.98	18.99	18.84	50	50	19.01	19.15	19.03
	75	0	18.86	18.75	18.91	100	0	18.94	18.90	18.99



4.5.5 LTE Band 12

LTE Band 12 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz				
QPSK	1	0	20.73	20.73	20.70	1	0	21.05	20.78	20.84
	1	2	20.93	20.71	20.95	1	7	20.72	20.70	20.90
	1	5	20.81	20.84	20.64	1	14	20.84	20.78	20.50
	3	0	20.85	20.82	20.71	8	0	20.00	19.84	19.99
	3	1	20.85	20.74	20.67	8	3	19.85	19.81	20.13
	3	3	20.82	20.64	20.67	8	7	19.75	19.96	19.94
	6	0	19.95	19.97	19.89	15	0	19.87	20.02	19.99
16QAM	1	0	19.95	19.92	20.29	1	0	20.15	20.05	20.31
	1	2	20.14	20.38	20.30	1	7	20.14	20.42	20.29
	1	5	19.99	19.88	20.05	1	14	20.16	19.82	20.15
	3	0	19.81	19.77	20.19	8	0	18.76	18.84	19.11
	3	1	19.95	19.81	20.11	8	3	18.86	18.95	19.04
	3	3	20.31	20.11	19.93	8	7	18.71	19.13	19.07
	6	0	18.71	19.03	18.93	15	0	18.92	18.90	18.94
64QAM	1	0	20.73	20.73	20.70	1	0	21.05	20.78	20.84
	1	2	20.93	20.71	20.95	1	7	20.72	20.70	20.90
	1	5	20.81	20.84	20.64	1	14	20.84	20.78	20.50
	3	0	20.85	20.82	20.71	8	0	20.00	19.84	19.99
	3	1	20.85	20.74	20.67	8	3	19.85	19.81	20.13
	3	3	20.82	20.64	20.67	8	7	19.75	19.96	19.94
	6	0	19.95	19.97	19.89	15	0	19.87	20.02	19.99
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	21.06	20.60	20.68	1	0	21.14	20.79	20.88
	1	12	20.71	20.77	21.04	1	24	20.90	20.80	21.08
	1	24	20.87	20.71	20.48	1	49	20.88	20.86	20.65
	12	0	20.06	19.91	19.95	25	0	20.07	19.92	20.12
	12	6	19.84	19.90	20.05	25	12	19.92	19.98	20.14
	12	13	19.72	19.98	20.07	25	25	19.88	19.98	20.11
	25	0	19.88	19.96	19.95	50	0	19.97	20.07	20.03
16QAM	1	0	20.05	20.02	20.17	1	0	20.18	20.10	20.32
	1	12	20.15	20.45	20.18	1	24	20.27	20.47	20.34
	1	24	20.10	19.87	19.97	1	49	20.24	19.97	20.17
	12	0	18.82	18.86	19.26	25	0	18.89	18.93	19.28
	12	6	18.84	18.92	19.21	25	12	18.97	18.97	19.22
	12	13	18.78	19.06	18.92	25	25	18.89	19.14	19.09
	25	0	18.89	18.95	18.89	50	0	18.94	19.04	19.05
64QAM	1	0	21.06	20.60	20.68	1	0	21.14	20.79	20.88
	1	12	20.71	20.77	21.04	1	24	20.90	20.80	21.08
	1	24	20.87	20.71	20.48	1	49	20.88	20.86	20.65
	12	0	20.06	19.91	19.95	25	0	20.07	19.92	20.12
	12	6	19.84	19.90	20.05	25	12	19.92	19.98	20.14
	12	13	19.72	19.98	20.07	25	25	19.88	19.98	20.11
	25	0	19.88	19.96	19.95	50	0	19.97	20.07	20.03

4.5.6 LTE Band 13

LTE Band 13 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	20.94	20.90	21.06	1	0	/	21.01	/
	1	12	21.08	20.78	21.12	1	24	/	20.98	/
	1	24	21.13	21.21	21.13	1	49	/	21.32	/
	12	0	20.01	20.06	20.02	25	0	/	20.21	/
	12	6	20.20	20.06	19.99	25	12	/	20.09	/
	12	13	20.03	20.11	20.13	25	25	/	20.15	/
16QAM	25	0	19.96	20.17	20.11	50	0	/	20.23	/
	1	0	19.80	20.34	19.85	1	0	/	20.91	/
	1	12	20.11	20.18	20.07	1	24	/	20.89	/
	1	24	20.02	20.12	20.28	1	49	/	20.61	/
	12	0	18.99	19.23	19.06	25	0	/	19.32	/
	12	6	19.14	19.13	19.00	25	12	/	19.24	/
16QAM	12	13	18.87	19.07	19.26	25	25	/	19.14	/
	25	0	18.79	19.06	18.90	50	0	/	19.20	/

4.5.7 LTE Band 25

LTE Band 25 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz				
QPSK	1	0	21.66	21.56	21.06	1	0	21.29	21.48	21.06
	1	2	21.61	21.80	21.31	1	7	21.42	21.76	21.35
	1	5	21.61	21.15	21.11	1	14	21.38	21.12	21.11
	3	0	21.51	21.04	21.15	8	0	20.29	20.09	20.06
	3	1	21.57	21.14	21.10	8	3	20.14	20.07	20.24
	3	3	21.58	21.18	21.17	8	7	20.09	20.17	20.11
	6	0	20.53	20.44	20.40	15	0	20.14	20.19	20.11
16QAM	1	0	20.82	20.68	20.51	1	0	20.06	20.75	20.65
	1	2	21.02	20.80	20.73	1	7	20.20	20.78	20.71
	1	5	20.77	21.01	20.61	1	14	19.88	21.02	20.62
	3	0	19.86	19.93	20.16	8	0	19.22	19.01	19.01
	3	1	20.56	19.95	20.37	8	3	19.22	19.05	19.40
	3	3	19.84	19.99	20.08	8	7	19.04	19.11	19.10
	6	0	19.19	19.22	19.22	15	0	19.07	19.16	19.22

LTE Band 25 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	21.35	21.46	21.07	1	0	21.19	21.56	21.08
	1	12	21.39	21.88	21.46	1	24	21.49	21.85	21.37
	1	24	21.31	21.26	20.96	1	49	21.43	21.18	21.05
	12	0	20.17	20.15	20.15	25	0	20.26	20.14	20.21
	12	6	20.22	20.13	20.19	25	12	20.18	20.10	20.13
	12	13	20.01	20.29	20.08	25	25	20.01	20.09	20.22
	25	0	20.22	20.20	20.11	50	0	20.30	20.24	20.03
16QAM	1	0	19.99	20.67	20.58	1	0	20.17	20.67	20.59
	1	12	20.34	20.84	20.67	1	24	20.32	20.89	20.68
	1	24	19.93	21.06	20.61	1	49	19.87	20.97	20.58
	12	0	19.14	19.00	19.08	25	0	19.03	18.91	19.06
	12	6	19.12	18.92	19.26	25	12	19.23	18.99	19.23
	12	13	19.02	19.06	19.14	25	25	19.04	18.99	19.18
	25	0	19.06	19.10	19.08	50	0	19.20	19.12	19.22
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	21.18	21.40	21.17	1	0	21.36	21.57	21.23
	1	37	21.51	21.81	21.34	1	50	21.56	21.89	21.50
	1	74	21.46	21.17	21.05	1	99	21.50	21.32	21.12
	37	0	20.20	20.14	20.20	50	0	20.32	20.21	20.26
	37	19	20.21	20.18	20.17	50	25	20.31	20.26	20.29
	37	39	20.13	20.16	20.14	50	50	20.15	20.29	20.25
	75	0	20.19	20.29	20.16	100	0	20.30	20.29	20.21
16QAM	1	0	20.09	20.75	20.52	1	0	20.19	20.84	20.68
	1	37	20.33	20.81	20.70	1	50	20.37	20.92	20.85
	1	74	19.92	21.01	20.55	1	99	20.07	21.09	20.74
	37	0	19.08	19.01	19.01	50	0	19.23	19.10	19.20
	37	19	19.19	18.98	19.30	50	25	19.31	19.12	19.41
	37	39	19.06	19.01	19.09	50	50	19.07	19.17	19.22
	75	0	19.16	19.18	19.13	100	0	19.21	19.30	19.24

4.5.8 LTE Band 26

LTE Band 26 Maximum Average Power (dBm)											
Modulation	RB		Test Channel			RB		Test Channel			
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High	
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz					
QPSK	1	0	21.24	21.00	21.09	1	0	20.87	21.17	21.03	
	1	2	21.20	21.22	21.09	1	7	21.07	21.14	21.01	
	1	5	20.85	21.11	20.95	1	14	21.21	21.06	20.89	
	3	0	21.00	21.02	21.39	8	0	20.16	20.11	20.41	
	3	1	21.04	21.07	20.98	8	3	19.96	20.04	20.03	
	3	3	20.95	21.24	21.19	8	7	20.05	20.20	20.15	
16QAM	6	0	19.97	19.97	20.14	15	0	19.99	19.91	20.23	
	1	0	20.13	20.90	20.24	1	0	20.28	20.76	20.12	
	1	2	20.26	20.56	20.10	1	7	20.42	20.61	20.19	
	1	5	20.10	20.43	19.92	1	14	20.13	20.45	19.99	
	3	0	20.17	20.10	19.86	8	0	19.11	19.05	18.91	
	3	1	20.36	20.11	19.96	8	3	18.98	19.17	18.88	
QPSK	3	3	20.36	20.06	20.04	8	7	19.14	19.09	18.97	
	6	0	19.09	19.04	19.02	15	0	19.20	18.89	19.17	
	Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
	QPSK	1	0	20.85	21.05	21.07	1	0	20.96	21.09	20.98
		1	12	21.00	21.15	21.00	1	24	21.01	21.21	21.01
		1	24	21.24	21.20	20.91	1	49	21.32	21.14	20.88
12		0	20.27	20.06	20.40	25	0	20.16	20.03	20.32	
12		6	20.07	19.94	19.99	25	12	20.00	19.97	20.07	
12		13	20.12	20.20	20.13	25	25	20.00	20.17	20.06	
16QAM	25	0	19.99	19.89	20.10	50	0	20.12	19.91	20.24	
	1	0	20.30	20.77	20.17	1	0	20.27	20.88	20.15	
	1	12	20.50	20.52	20.16	1	24	20.36	20.51	20.02	
	1	24	20.15	20.39	19.82	1	49	20.13	20.43	19.84	
	12	0	19.11	19.03	18.94	25	0	19.10	19.02	19.02	
	12	6	18.91	19.10	18.85	25	12	19.06	19.09	19.02	
QPSK	12	13	19.01	19.06	19.06	25	25	19.07	19.07	19.06	
	25	0	19.06	18.85	19.09	50	0	19.12	18.98	19.00	
	Channel Bandwidth: 15 MHz										
	QPSK	1	0	21.03	21.18	21.13					
		1	12	21.09	21.24	21.14					
		1	24	21.41	21.26	21.06					
12		0	20.28	20.21	20.43						
12		6	20.14	20.13	20.10						
12		13	20.19	20.27	20.25						
16QAM	25	0	20.18	20.04	20.26						
	1	0	20.36	20.91	20.30						
	1	12	20.55	20.67	20.20						
	1	24	20.33	20.58	20.02						
	12	0	19.24	19.16	19.04						
	12	6	19.11	19.20	19.05						
16QAM	12	13	19.14	19.21	19.08						
	25	0	19.20	19.05	19.19						

4.5.9 LTE Band 26 (Part 90S)

LTE Band 26 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz				
QPSK	1	0	20.93	21.05	21.07	1	0	20.96	21.09	20.98
	1	2	20.97	21.15	21.00	1	7	21.01	21.21	21.01
	1	5	21.14	21.20	20.91	1	14	21.19	21.14	20.88
	3	0	21.00	20.06	20.40	8	0	20.16	20.03	20.32
	3	1	21.13	19.94	19.99	8	3	20.00	19.97	20.07
	3	3	20.95	20.20	20.13	8	7	20.00	20.17	20.06
	6	0	20.06	19.89	20.10	15	0	20.12	19.91	20.24
16QAM	1	0	20.14	20.77	20.17	1	0	20.27	20.88	20.15
	1	2	20.34	20.52	20.16	1	7	20.36	20.51	20.02
	1	5	20.11	20.39	19.82	1	14	20.13	20.43	19.84
	3	0	20.20	19.84	18.94	8	0	19.10	19.02	19.02
	3	1	20.29	19.10	18.85	8	3	19.06	19.09	19.02
	3	3	19.91	20.29	19.85	8	7	19.07	19.07	19.06
	6	0	19.09	18.85	19.09	15	0	19.12	18.98	19.00
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	21.03	21.18	21.13	1	0	/	21.18	/
	1	12	21.09	21.24	21.14	1	24	/	21.24	/
	1	24	21.28	21.26	21.06	1	49	/	21.29	/
	12	0	20.28	20.21	20.43	25	0	/	20.21	/
	12	6	20.14	20.13	20.10	25	12	/	20.13	/
	12	13	20.19	20.27	20.25	25	25	/	20.27	/
	25	0	20.18	20.04	20.26	50	0	/	20.04	/
16QAM	1	0	20.36	20.91	20.30	1	0	/	20.91	/
	1	12	20.55	20.67	20.20	1	24	/	20.67	/
	1	24	20.33	20.58	20.02	1	49	/	20.58	/
	12	0	19.24	19.16	19.04	25	0	/	19.16	/
	12	6	19.11	19.20	19.05	25	12	/	19.20	/
	12	13	19.14	19.21	19.08	25	25	/	19.21	/
	25	0	19.20	19.05	19.19	50	0	/	19.05	/

4.5.10 LTE Band 41

LTE Band 41 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	21.59	22.03	21.97	1	0	21.93	22.03	22.00
	1	12	21.64	22.42	22.43	1	24	22.06	22.37	22.47
	1	24	21.54	22.07	21.99	1	49	21.75	22.00	22.07
	12	0	20.57	20.71	20.96	25	0	20.67	20.78	21.00
	12	6	20.72	20.82	20.85	25	12	20.70	20.76	20.88
	12	13	20.61	20.84	20.94	25	25	20.90	20.87	20.87
	25	0	20.62	20.74	20.79	50	0	20.89	20.66	20.69
16QAM	1	0	20.12	20.68	20.49	1	0	20.97	20.91	20.58
	1	12	19.98	20.78	20.72	1	24	21.46	21.35	20.62
	1	24	20.23	20.66	20.33	1	49	21.09	21.23	20.40
	12	0	19.59	20.00	20.00	25	0	19.69	19.86	20.00
	12	6	19.46	19.77	19.72	25	12	19.85	19.87	19.84
	12	13	19.52	19.97	19.93	25	25	19.74	19.81	19.96
	25	0	19.51	19.77	19.90	50	0	19.62	19.88	19.76
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	21.92	22.01	22.00	1	0	21.94	22.14	22.08
	1	37	22.00	22.47	22.47	1	50	22.14	22.55	22.61
	1	74	21.87	21.97	21.97	1	99	21.89	22.13	22.13
	37	0	20.67	20.76	20.95	50	0	20.77	20.89	21.00
	37	19	20.77	20.74	20.83	50	25	20.88	20.88	20.99
	37	39	20.75	20.82	20.82	50	50	20.90	20.89	20.97
	75	0	20.89	20.74	20.85	100	0	20.92	20.84	20.86
16QAM	1	0	21.06	20.92	20.63	1	0	21.07	21.11	20.68
	1	37	21.43	21.23	20.57	1	50	21.55	21.40	20.76
	1	74	21.23	21.23	20.30	1	99	21.28	21.27	20.48
	37	0	19.70	19.91	19.83	50	0	19.84	20.04	20.01
	37	19	19.70	19.84	19.70	50	25	19.90	19.94	19.89
	37	39	19.80	19.97	20.03	50	50	19.93	19.97	20.07
	75	0	19.72	19.93	19.81	100	0	19.80	19.96	19.92

4.5.11 LTE Band 66

LTE Band 66 Maximum Average Power (dBm)											
Modulation	RB		Test Channel			RB		Test Channel			
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High	
Channel Bandwidth: 1.4 MHz						Channel Bandwidth: 3 MHz					
QPSK	1	0	21.65	21.65	21.49	1	0	21.82	21.50	21.41	
	1	2	21.52	21.96	21.78	1	7	22.06	21.86	21.73	
	1	5	21.82	21.94	21.90	1	14	21.66	21.54	21.77	
	3	0	21.71	21.74	21.38	8	0	20.61	20.61	20.48	
	3	1	21.79	21.79	21.81	8	3	20.75	20.87	20.75	
	3	3	21.74	21.78	21.65	8	7	20.62	20.79	20.79	
16QAM	6	0	20.71	20.71	20.81	15	0	20.70	20.64	20.76	
	1	0	20.67	20.83	20.73	1	0	20.68	20.64	20.57	
	1	2	20.79	21.18	20.69	1	7	20.71	20.76	20.67	
	1	5	20.56	20.83	20.90	1	14	20.47	20.83	21.01	
	3	0	20.81	20.88	20.82	8	0	19.70	19.66	19.81	
	3	1	20.85	20.64	20.83	8	3	19.81	19.79	19.80	
QPSK	3	3	20.77	20.59	20.85	8	7	19.83	19.69	19.85	
	6	0	19.75	19.73	19.78	15	0	19.88	19.76	19.88	
	Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
	QPSK	1	0	21.97	21.52	21.48	1	0	21.91	21.54	21.53
		1	12	22.17	21.76	21.78	1	24	22.22	21.79	21.74
		1	24	21.77	21.53	21.86	1	49	21.73	21.69	21.84
12		0	20.54	20.57	20.49	25	0	20.69	20.54	20.41	
12		6	20.82	20.80	20.71	25	12	20.76	20.80	20.74	
12		13	20.79	20.73	20.68	25	25	20.68	20.70	20.73	
16QAM	25	0	20.80	20.68	20.75	50	0	20.75	20.77	20.81	
	1	0	20.61	20.57	20.58	1	0	20.56	20.66	20.75	
	1	12	20.61	20.80	20.75	1	24	20.62	20.65	20.78	
	1	24	20.49	20.67	21.04	1	49	20.47	20.66	21.01	
	12	0	19.80	19.70	19.72	25	0	19.68	19.71	19.88	
	12	6	19.73	19.77	19.92	25	12	19.82	19.81	19.76	
QPSK	12	13	19.86	19.58	19.85	25	25	19.79	19.71	19.74	
	25	0	19.85	19.81	19.90	50	0	19.71	19.83	19.90	
	Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
	QPSK	1	0	21.90	21.59	21.48	1	0	21.98	21.65	21.60
		1	37	22.04	21.90	21.73	1	50	22.24	21.94	21.84
		1	74	21.84	21.69	21.83	1	99	21.85	21.71	21.96
37		0	20.66	20.69	20.38	50	0	20.74	20.73	20.54	
37		19	20.74	20.82	20.81	50	25	20.85	20.89	20.86	
37		39	20.67	20.78	20.70	50	50	20.82	20.85	20.82	
16QAM	75	0	20.67	20.76	20.70	100	0	20.86	20.80	20.82	
	1	0	20.54	20.65	20.70	1	0	20.69	20.76	20.75	
	1	37	20.78	20.72	20.78	1	50	20.80	20.83	20.82	
	1	74	20.61	20.71	20.96	1	99	20.66	20.84	21.08	
	37	0	19.76	19.68	19.86	50	0	19.86	19.75	19.92	
	37	19	19.69	19.79	19.80	50	25	19.88	19.85	19.93	
QPSK	37	39	19.85	19.75	19.83	50	50	19.88	19.78	19.89	
	75	0	19.70	19.75	19.88	100	0	19.90	19.94	19.95	



4.5.12 LTE Band 71

LTE Band 71 Maximum Average Power (dBm)										
Modulation	RB		Test Channel			RB		Test Channel		
	Size	Offset	Low	Mid	High	Size	Offset	Low	Mid	High
Channel Bandwidth: 5 MHz						Channel Bandwidth: 10 MHz				
QPSK	1	0	21.05	21.12	20.90	1	0	21.30	21.12	20.93
	1	12	20.75	20.98	21.31	1	24	21.17	20.93	21.18
	1	24	20.91	21.13	21.04	1	49	21.06	21.06	21.12
	12	0	20.02	19.94	20.06	25	0	19.88	20.01	20.10
	12	6	19.86	20.04	19.98	25	12	19.92	19.98	20.01
	12	13	19.98	20.06	20.16	25	25	20.09	20.09	20.09
	25	0	19.93	19.94	20.14	50	0	19.98	19.86	20.04
16QAM	1	0	20.34	19.96	20.25	1	0	19.76	19.88	20.34
	1	12	19.97	20.72	20.81	1	24	19.99	20.74	20.71
	1	24	19.86	20.41	20.51	1	49	19.87	20.55	20.58
	12	0	19.10	19.03	19.03	25	0	18.78	18.89	19.03
	12	6	19.11	18.89	19.06	25	12	19.10	18.99	19.18
	12	13	18.86	18.85	19.02	25	25	18.90	18.69	19.05
	25	0	18.85	18.75	19.11	50	0	18.93	18.86	18.97
Channel Bandwidth: 15 MHz						Channel Bandwidth: 20 MHz				
QPSK	1	0	21.29	21.10	20.93	1	0	21.31	21.23	21.01
	1	37	21.11	21.03	21.18	1	50	21.25	21.11	21.32
	1	74	21.18	21.03	21.02	1	99	21.20	21.19	21.18
	37	0	19.88	19.99	20.05	50	0	19.98	20.12	20.10
	37	19	19.99	19.96	19.96	50	25	20.10	20.10	20.12
	37	39	19.94	20.04	20.04	50	50	20.09	20.11	20.19
	75	0	19.98	19.94	20.20	100	0	20.01	20.04	20.21
16QAM	1	0	19.85	19.89	20.39	1	0	19.86	20.08	20.44
	1	37	19.96	20.62	20.66	1	50	20.08	20.79	20.85
	1	74	20.01	20.55	20.48	1	99	20.06	20.59	20.66
	37	0	18.79	18.94	18.86	50	0	18.93	19.07	19.04
	37	19	18.95	18.96	19.04	50	25	19.15	19.06	19.23
	37	39	18.96	18.85	19.12	50	50	19.09	18.85	19.16
	75	0	19.03	18.91	19.02	100	0	19.11	18.94	19.13



**5. RADIO TECHNICAL REQUIREMENTS SPECIFICATION**  
**5.1 REFERENCE DOCUMENTS FOR TESTING**

No.	Identity	Document Title
1	FCC 47 CFR Part 2	Frequency allocations and radio treaty matters; general rules and regulations
2	FCC 47 CFR Part 22	Public Mobile Services
3	FCC 47 CFR Part 27	Miscellaneous Wireless Communications Services
4	FCC 47 CFR Part 24	Personal Communications Services
5	FCC 47 CFR Part 90	Private Land Mobile Radio Services
6	ANSI C63.26-2015	American National Standard for Compliance Testing of Transmitters Used in Licensed Radio Services
7	KDB 971168 D01	KDB 971168 D01 Power Meas License Digital Systems v03r01

## 5.2 CONDUCTED OUTPUT POWER

**FCC 47 CFR Part 2.1046(a)**  
**LTE Band 2 & LTE Band 25:** FCC 47 CFR Part 24.232(c)  
**LTE Band 4 & LTE Band 66:** FCC 47 CFR Part 27.50(d)(4)  
**Test Requirement:** **LTE Band 5 & LTE Band 26:** FCC 47 CFR Part 22.913(a)  
**LTE Band 7 & Band 38 & Band 41:** FCC 47 CFR Part 27.50(h)(2)  
**LTE Band 12 & Band 71:** FCC 47 CFR Part 27.50(c)(10)  
**LTE Band 13:** FCC 47 CFR Part 27.50(b)(10)  
**LTE Band 26:** FCC 47 CFR Part 90.635  
**Test Method:** KDB 971168 D01v03r01 & ANSI C63.26-2015

**Limit:**  
**FCC 47 CFR Part 22.913(a):**  
 The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

**FCC 47 CFR Part 24.232(c):**  
 Mobile and portable stations are limited to 2 watts EIRP.

**FCC 47 CFR Part 27.50(d)(4):**  
 Fixed, mobile, and portable (hand-held) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

**FCC 47 CFR Part 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.

**FCC 47 CFR 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.

**FCC 47 CFR Part 27.50(b)(10):**  
 Portable stations (hand-held devices) transmitting in the 746-757 MHz, 776-788 MHz, and 805-806 MHz bands are limited to 3 watts ERP.

**FCC 47 CFR Part 90.635:**  
 (a) The effective radiated power and antenna height for base stations may not exceed 1 kilowatt (30 dBw) and 304 m. (1,000 ft.) above average terrain (AAT), respectively, or the equivalent thereof as determined from the Table. These are maximum values, and applicants will be required to justify power levels and antenna heights requested.

(b) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).  
 Table—Equivalent Power and Antenna Heights for Base Stations in the 851–869 MHz and 935–940 MHz Bands Which Have a Requirement for a 32 km (20 mi) Service Area Radius

Antenna height (ATT) meters (feet)	Effective radiated power (watts) <sup>1 2 4</sup>
Above 1,372 (4,500)	65
Above 1,220 (4,000) to 1,372 (4,500)	70
Above 1,067 (3,500) to 1,220 (4,000)	75
Above 915 (3,000) to 1,067 (3,500)	100
Above 763 (2,500) to 915 (3,000)	140
Above 610 (2,000) to 763 (2,500)	200
Above 458 (1,500) to 610 (2,000)	350
Above 305 (1,000) to 458 (1,500)	600
Up to 305 (1,000)	<sup>3</sup> 1,000

- Power is given in terms of effective radiated power (ERP).
- Applicants in the Los Angeles, CA, area who demonstrate a need to serve both the downtown and fringe

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areas will be permitted to utilize an ERP of 1 kw at the following mountaintop sites: Santiago Park, Sierra Peak, Mount Lukens, and Mount Wilson.

- 3. Stations with antennas below 305 m (1,000 ft) (AAT) will be restricted to a maximum power of 1 kw (ERP).
- 4. Licensees in San Diego, CA, will be permitted to utilize an ERP of 500 watts at the following mountaintop sites: Palomar, Otay, Woodson and Miguel.

**Test Procedure:**

The EUT was set up for the maximum power with LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

Note: The cable loss and attenuator loss were offset into measure device as an amplitude offset.

**Test Setup:** Refer to section 4.2.2 for details.

**Instruments Used:** Refer to section 3 for details

**Test Mode:** Link mode

**Test Results:** Pass

**Test Data:** [The full result refer to section 4.5 for details.](#)

### 5.3 FIELD STRENGTH OF SPURIOUS RADIATION

**Test Requirement:** LTE Band 2 & LTE Band 25: FCC 47 CFR Part 24.238(a)  
 LTE Band 4 & LTE Band 66: FCC 47 CFR Part 27.53(h)  
 LTE Band 5 & LTE Band 26: FCC 47 CFR Part 22.917(a)  
 LTE Band 7 & Band 38 & Band 41: FCC 47 CFR Part 27.53(m)(4)  
 LTE Band 12 & Band 71: FCC 47 CFR Part 27.53(g)  
 LTE Band 13: FCC 47 CFR Part 27.53  
 LTE Band 26: FCC 47 CFR Part 90.691

**Test Method:** ANSI C63.26-2015 & KDB 971168 D01v03r01

**Receiver Setup:**

Frequency	Detector	RBW	VBW	Remark
0.009 MHz-30 MHz	Peak	10 kHz	30 KHz	Peak
30 MHz-1 GHz	Quasi-peak	100 kHz	300 KHz	Peak
Above 1 GHz	Peak	1 MHz	3 MHz	Peak

**Limits:**

**FCC 47 CFR Part 24.238(a), 27.53(h)(1), 22.917(a), 27.53(g), 27.53(c)(2), 90.691:**

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. The emission limit equal to -13 dBm.

**FCC 47 CFR Part 27.53(m)(4):**

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  $55 + 10 \log(P)$  dB. The emission limit equal to -25 dBm.

**FCC 47 CFR Part 27.53:**

(c) 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.

(f) Emissions in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals. (-70 dBW/MHz = -40dBm/MHz).

**Test Setup:** Refer to section 4.2.1 for details.

**Test Procedures:** KDB 971168 D01v03r01 Section 7

**Equipment Used:** Refer to section 3 for details.

**Test Result:** Pass

**The measurement data as follows:**

5.3.1 LTE Band 2

LTE Band 2_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	660.602	-81.12	0.65	-80.47	-13.00	-67.47	Horizontal
2	804.252	-80.96	2.45	-78.51	-13.00	-65.51	Horizontal
3	925.613	-81.83	4.23	-77.60	-13.00	-64.60	Horizontal
4	71.705	-64.22	-14.43	-78.65	-13.00	-65.65	Vertical
5	95.649	-66.04	-13.08	-79.12	-13.00	-66.12	Vertical
6	925.613	-81.65	3.61	-78.04	-13.00	-65.04	Vertical
<b>Middle Channel</b>							
1	698.804	-81.09	1.71	-79.38	-13.00	-66.38	Horizontal
2	771.047	-80.88	1.81	-79.07	-13.00	-66.07	Horizontal
3	958.714	-82.18	4.90	-77.28	-13.00	-64.28	Horizontal
4	74.793	-64.86	-14.32	-79.18	-13.00	-66.18	Vertical
5	95.649	-65.60	-13.08	-78.68	-13.00	-65.68	Vertical
6	992.997	-81.45	3.78	-77.67	-13.00	-64.67	Vertical
<b>Highest Channel</b>							
1	569.969	-80.07	-1.66	-81.73	-13.00	-68.73	Horizontal
2	698.804	-81.43	1.71	-79.72	-13.00	-66.72	Horizontal
3	972.283	-82.25	4.62	-77.63	-13.00	-64.63	Horizontal
4	73.233	-63.98	-14.37	-78.35	-13.00	-65.35	Vertical
5	97.002	-65.82	-12.98	-78.80	-13.00	-65.80	Vertical
6	821.387	-81.26	2.18	-79.08	-13.00	-66.08	Vertical

LTE Band 2_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	3720.000	-65.79	7.18	-58.61	-13.00	-45.61	Horizontal
2	5580.000	-66.70	11.15	-55.55	-13.00	-42.55	Horizontal
3	3720.000	-65.72	7.17	-58.55	-13.00	-45.55	Vertical
4	5580.000	-67.28	11.63	-55.65	-13.00	-42.65	Vertical
<b>Middle Channel</b>							
1	3760.000	-64.89	7.28	-57.61	-13.00	-44.61	Horizontal
2	5640.000	-64.64	11.11	-53.53	-13.00	-40.53	Horizontal
3	3760.000	-64.77	7.28	-57.49	-13.00	-44.49	Vertical
4	5640.000	-64.75	11.59	-53.16	-13.00	-40.16	Vertical
<b>Highest Channel</b>							
1	3800.000	-61.42	7.37	-54.05	-13.00	-41.05	Horizontal
2	5700.000	-65.27	11.09	-54.18	-13.00	-41.18	Horizontal
3	3800.000	-64.03	7.39	-56.64	-13.00	-43.64	Vertical
4	5700.000	-64.82	11.55	-53.27	-13.00	-40.27	Vertical

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5.3.2 LTE Band 4

LTE Band 4_ 20 MHz_ QPSK _ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	642.292	-80.14	0.25	-79.89	-13.00	-66.89	Horizontal
2	793.028	-81.42	2.31	-79.11	-13.00	-66.11	Horizontal
3	945.334	-81.10	4.91	-76.19	-13.00	-63.19	Horizontal
4	74.793	-64.55	-14.32	-78.87	-13.00	-65.87	Vertical
5	95.649	-65.49	-13.08	-78.57	-13.00	-65.57	Vertical
6	223.848	-71.31	-9.44	-80.75	-13.00	-67.75	Vertical
<b>Middle Channel</b>							
1	693.910	-81.33	1.59	-79.74	-13.00	-66.74	Horizontal
2	765.648	-80.71	1.69	-79.02	-13.00	-66.02	Horizontal
3	893.656	-81.38	3.42	-77.96	-13.00	-64.96	Horizontal
4	55.288	-65.26	-14.91	-80.17	-13.00	-67.17	Vertical
5	73.750	-64.61	-14.36	-78.97	-13.00	-65.97	Vertical
6	97.002	-65.23	-12.98	-78.21	-13.00	-65.21	Vertical
<b>Highest Channel</b>							
1	679.435	-81.57	1.29	-80.28	-13.00	-67.28	Horizontal
2	798.620	-81.44	2.43	-79.01	-13.00	-66.01	Horizontal
3	952.000	-82.17	5.03	-77.14	-13.00	-64.14	Horizontal
4	74.793	-64.43	-14.32	-78.75	-13.00	-65.75	Vertical
5	96.323	-65.96	-13.04	-79.00	-13.00	-66.00	Vertical
6	965.474	-81.64	3.62	-78.02	-13.00	-65.02	Vertical

LTE Band 4_ 20 MHz_ QPSK _ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	3440.000	-63.13	6.36	-56.77	-13.00	-43.77	Horizontal
2	5160.000	-65.82	9.54	-56.28	-13.00	-43.28	Horizontal
3	3440.000	-61.75	6.17	-55.58	-13.00	-42.58	Vertical
4	5160.000	-65.18	9.90	-55.28	-13.00	-42.28	Vertical
<b>Middle Channel</b>							
1	3465.000	-62.54	6.43	-56.11	-13.00	-43.11	Horizontal
2	5197.500	-65.70	9.67	-56.03	-13.00	-43.03	Horizontal
3	3465.000	-62.84	6.28	-56.56	-13.00	-43.56	Vertical
4	5197.500	-65.73	10.05	-55.68	-13.00	-42.68	Vertical
<b>Highest Channel</b>							
1	3490.000	-63.34	6.52	-56.82	-13.00	-43.82	Horizontal
2	5235.000	-64.67	9.85	-54.82	-13.00	-41.82	Horizontal
3	3490.000	-62.29	6.40	-55.89	-13.00	-42.89	Vertical
4	5235.000	-65.84	10.24	-55.60	-13.00	-42.60	Vertical

### 5.3.3 LTE Band 5

LTE Band 5_ 10 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	89.787	-85.14	15.30	-69.84	-13.00	-56.84	Horizontal
2	363.523	-88.82	23.50	-65.32	-13.00	-52.32	Horizontal
3	642.292	-88.89	29.70	-59.19	-13.00	-46.19	Horizontal
4	89.787	-85.17	15.30	-69.87	-13.00	-56.87	Vertical
5	266.839	-89.28	20.72	-68.56	-13.00	-55.56	Vertical
6	698.804	-89.22	30.00	-59.22	-13.00	-46.22	Vertical
<b>Middle Channel</b>							
1	89.787	-85.38	15.30	-70.08	-13.00	-57.08	Horizontal
2	236.793	-88.45	19.62	-68.83	-13.00	-55.83	Horizontal
3	646.822	-87.91	29.71	-58.20	-13.00	-45.20	Horizontal
4	89.787	-84.63	15.30	-69.33	-13.00	-56.33	Vertical
5	491.770	-88.78	27.04	-61.74	-13.00	-48.74	Vertical
6	798.620	-88.16	31.00	-57.16	-13.00	-44.16	Vertical
<b>Highest Channel</b>							
1	89.787	-85.21	15.30	-69.91	-13.00	-56.91	Horizontal
2	255.823	-88.66	20.47	-68.19	-13.00	-55.19	Horizontal
3	698.804	-89.06	31.14	-57.92	-13.00	-44.92	Horizontal
4	89.787	-85.03	15.30	-69.73	-13.00	-56.73	Vertical
5	338.855	-89.57	22.84	-66.73	-13.00	-53.73	Vertical
6	573.988	-89.14	28.79	-60.35	-13.00	-47.35	Vertical

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LTE Band 5_ 20 MHz_ QPSK _ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	1658.000	-64.62	0.47	-64.15	-13.00	-51.15	Horizontal
2	2487.000	-64.89	3.16	-61.73	-13.00	-48.73	Horizontal
3	1658.000	-63.59	-0.30	-63.89	-13.00	-50.89	Vertical
4	2487.000	-63.44	2.76	-60.68	-13.00	-47.68	Vertical
<b>Middle Channel</b>							
1	1673.000	-62.38	0.56	-61.82	-13.00	-48.82	Horizontal
2	2509.500	-65.00	3.22	-61.78	-13.00	-48.78	Horizontal
3	1673.000	-61.99	-0.20	-62.19	-13.00	-49.19	Vertical
4	2509.500	-65.70	2.81	-62.89	-13.00	-49.89	Vertical
<b>Highest Channel</b>							
1	1688.000	-63.64	0.66	-62.98	-13.00	-49.98	Horizontal
2	2532.000	-65.21	3.29	-61.92	-13.00	-48.92	Horizontal
3	1688.000	-63.13	-0.09	-63.22	-13.00	-50.22	Vertical
4	2532.000	-65.53	2.87	-62.66	-13.00	-49.66	Vertical

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5.3.4 LTE Band 7

LTE Band 7_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	684.226	-81.25	1.38	-79.87	-25.00	-54.87	Horizontal
2	804.252	-80.37	2.45	-77.92	-25.00	-52.92	Horizontal
3	945.334	-81.87	4.91	-76.96	-25.00	-51.96	Horizontal
4	74.270	-64.84	-14.33	-79.17	-25.00	-54.17	Vertical
5	96.323	-65.42	-13.04	-78.46	-25.00	-53.46	Vertical
6	986.044	-81.60	3.74	-77.86	-25.00	-52.86	Vertical
<b>Middle Channel</b>							
1	615.774	-80.31	0.07	-80.24	-25.00	-55.24	Horizontal
2	787.475	-81.04	2.18	-78.86	-25.00	-53.86	Horizontal
3	912.695	-80.72	3.92	-76.80	-25.00	-51.80	Horizontal
4	74.793	-64.17	-14.32	-78.49	-25.00	-53.49	Vertical
5	97.002	-65.43	-12.98	-78.41	-25.00	-53.41	Vertical
6	958.714	-80.37	3.61	-76.76	-25.00	-51.76	Vertical
<b>Highest Channel</b>							
1	594.514	-80.86	-0.53	-81.39	-25.00	-56.39	Horizontal
2	684.226	-80.99	1.38	-79.61	-25.00	-54.61	Horizontal
3	952.000	-82.53	5.03	-77.50	-25.00	-52.50	Horizontal
4	72.211	-64.72	-14.40	-79.12	-25.00	-54.12	Vertical
5	92.997	-66.43	-13.31	-79.74	-25.00	-54.74	Vertical
6	912.695	-81.38	3.47	-77.91	-25.00	-52.91	Vertical

LTE Band 7_ 20 MHz_ QPSK _ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	5020.000	-52.80	8.68	-44.12	-25.00	-19.12	Horizontal
2	7530.000	-46.80	13.00	-33.80	-25.00	-8.80	Horizontal
3	5020.000	-61.65	8.98	-52.67	-25.00	-27.67	Vertical
4	7530.000	-55.45	13.10	-42.35	-25.00	-17.35	Vertical
<b>Middle Channel</b>							
1	5070.000	-57.28	8.86	-48.42	-25.00	-23.42	Horizontal
2	7605.000	-47.64	13.16	-34.48	-25.00	-9.48	Horizontal
3	5070.000	-63.34	9.18	-54.16	-25.00	-29.16	Vertical
4	7605.000	-53.60	13.26	-40.34	-25.00	-15.34	Vertical
<b>Highest Channel</b>							
1	5120.000	-54.35	9.03	-45.32	-25.00	-20.32	Horizontal
2	7680.000	-49.45	13.31	-36.14	-25.00	-11.14	Horizontal
3	5120.000	-64.19	9.37	-54.82	-25.00	-29.82	Vertical
4	7680.000	-57.46	13.41	-44.05	-25.00	-19.05	Vertical

### 5.3.5 LTE Band 12

LTE Band 12_ 10 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	89.787	-85.24	15.30	-69.94	-13.00	-56.94	Horizontal
2	409.651	-89.11	25.43	-63.68	-13.00	-50.68	Horizontal
3	502.247	-88.23	26.76	-61.47	-13.00	-48.47	Horizontal
4	89.787	-85.48	15.30	-70.18	-13.00	-57.18	Vertical
5	421.329	-89.78	25.74	-64.04	-13.00	-51.04	Vertical
6	565.978	-89.11	28.61	-60.50	-13.00	-47.50	Vertical
<b>Middle Channel</b>							
1	89.787	-84.59	15.30	-69.29	-13.00	-56.29	Horizontal
2	395.507	-89.98	25.13	-64.85	-13.00	-51.85	Horizontal
3	538.811	-89.39	27.87	-61.52	-13.00	-48.52	Horizontal
4	89.787	-84.65	15.30	-69.35	-13.00	-56.35	Vertical
5	270.616	-88.75	20.80	-67.95	-13.00	-54.95	Vertical
6	565.978	-87.81	28.61	-59.20	-13.00	-46.20	Vertical
<b>Highest Channel</b>							
1	89.787	-83.63	15.30	-68.33	-13.00	-55.33	Horizontal
2	403.934	-89.86	25.47	-64.39	-13.00	-51.39	Horizontal
3	674.677	-87.88	30.62	-57.26	-13.00	-44.26	Horizontal
4	91.700	-85.56	15.44	-70.12	-13.00	-57.12	Vertical
5	409.651	-89.29	25.17	-64.12	-13.00	-51.12	Vertical
6	620.117	-89.11	28.24	-60.87	-13.00	-47.87	Vertical

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LTE Band 12_ 10 MHz_ QPSK _ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	1408.000	-63.96	-0.11	-64.07	-13.00	-51.07	Horizontal
2	2112.000	-63.89	2.47	-61.42	-13.00	-48.42	Horizontal
3	1408.000	-64.20	-0.88	-65.08	-13.00	-52.08	Vertical
4	2112.000	-64.32	1.99	-62.33	-13.00	-49.33	Vertical
<b>Middle Channel</b>							
1	1415.000	-63.65	-0.12	-63.77	-13.00	-50.77	Horizontal
2	2122.500	-63.21	2.48	-60.73	-13.00	-47.73	Horizontal
3	1415.000	-63.42	-0.90	-64.32	-13.00	-51.32	Vertical
4	2122.500	-63.82	2.01	-61.81	-13.00	-48.81	Vertical
<b>Highest Channel</b>							
1	1422.000	-63.61	-0.14	-63.75	-13.00	-50.75	Horizontal
2	2133.000	-63.65	2.48	-61.17	-13.00	-48.17	Horizontal
3	1422.000	-62.64	-0.93	-63.57	-13.00	-50.57	Vertical
4	2133.000	-63.60	2.00	-61.60	-13.00	-48.60	Vertical

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**5.3.6 LTE Band 13**

LTE Band 13_ 5 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	89.787	-84.49	15.30	-69.19	-13.00	-56.19	Horizontal
2	412.539	-89.17	25.41	-63.76	-13.00	-50.76	Horizontal
3	611.462	-88.58	29.45	-59.13	-13.00	-46.13	Horizontal
4	89.787	-85.69	15.30	-70.39	-13.00	-57.39	Vertical
5	290.317	-88.93	21.24	-67.69	-13.00	-54.69	Vertical
6	546.437	-88.33	28.19	-60.14	-13.00	-47.14	Vertical
<b>Middle Channel</b>							
1	89.787	-85.36	15.30	-70.06	-13.00	-57.06	Horizontal
2	409.651	-89.24	25.43	-63.81	-13.00	-50.81	Horizontal
3	703.731	-88.79	31.08	-57.71	-13.00	-44.71	Horizontal
4	91.700	-84.51	15.44	-69.07	-13.00	-56.07	Vertical
5	495.238	-88.09	27.13	-60.96	-13.00	-47.96	Vertical
6	703.731	-89.31	30.03	-59.28	-13.00	-46.28	Vertical
<b>Highest Channel</b>							
1	89.787	-86.11	15.30	-70.81	-13.00	-57.81	Horizontal
2	241.838	-89.17	19.90	-69.27	-13.00	-56.27	Horizontal
3	474.791	-88.78	26.50	-62.28	-13.00	-49.28	Horizontal
4	89.787	-84.96	15.30	-69.66	-13.00	-56.66	Vertical
5	520.208	-88.77	27.69	-61.08	-13.00	-48.08	Vertical
6	713.692	-89.31	29.93	-59.38	-13.00	-46.38	Vertical

LTE Band 13_ 5 MHz_ QPSK _ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	1559.000	-62.82	-0.11	-62.93	-13.00	-49.93	Horizontal
2	2338.500	-62.13	2.83	-59.30	-13.00	-46.30	Horizontal
3	1559.000	-62.61	-0.96	-63.57	-13.00	-50.57	Vertical
4	2338.500	-62.97	2.40	-60.57	-13.00	-47.57	Vertical
<b>Middle Channel</b>							
1	1564.000	-63.74	-0.08	-63.82	-13.00	-50.82	Horizontal
2	2346.000	-62.99	2.84	-60.15	-13.00	-47.15	Horizontal
3	1564.000	-62.67	-0.93	-63.60	-13.00	-50.60	Vertical
4	2346.000	-62.98	2.41	-60.57	-13.00	-47.57	Vertical
<b>Highest Channel</b>							
1	1569.000	-63.45	-0.06	-63.51	-13.00	-50.51	Horizontal
2	2353.500	-63.31	2.86	-60.45	-13.00	-47.45	Horizontal
3	1569.000	-63.47	-0.91	-64.38	-13.00	-51.38	Vertical
4	2353.500	-62.43	2.44	-59.99	-13.00	-46.99	Vertical

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**5.3.7 LTE Band 25**

LTE Band 25_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	693.910	-81.16	1.59	-79.57	-13.00	-66.57	Horizontal
2	804.252	-81.23	2.45	-78.78	-13.00	-65.78	Horizontal
3	938.714	-81.51	4.69	-76.82	-13.00	-63.82	Horizontal
4	72.211	-64.85	-14.40	-79.25	-13.00	-66.25	Vertical
5	97.002	-66.68	-12.98	-79.66	-13.00	-66.66	Vertical
6	979.139	-81.15	3.69	-77.46	-13.00	-64.46	Vertical
<b>Middle Channel</b>							
1	708.694	-81.11	1.54	-79.57	-13.00	-66.57	Horizontal
2	793.028	-80.51	2.31	-78.20	-13.00	-65.20	Horizontal
3	919.132	-81.16	4.08	-77.08	-13.00	-64.08	Horizontal
4	54.901	-66.02	-14.91	-80.93	-13.00	-67.93	Vertical
5	75.321	-64.62	-14.31	-78.93	-13.00	-65.93	Vertical
6	97.002	-65.93	-12.98	-78.91	-13.00	-65.91	Vertical
<b>Highest Channel</b>							
1	693.910	-81.24	1.59	-79.65	-13.00	-66.65	Horizontal
2	919.132	-81.23	4.08	-77.15	-13.00	-64.15	Horizontal
3	965.474	-81.74	4.75	-76.99	-13.00	-63.99	Horizontal
4	70.705	-62.43	-14.46	-76.89	-13.00	-63.89	Vertical
5	95.649	-66.07	-13.08	-79.15	-13.00	-66.15	Vertical
6	833.013	-80.32	2.21	-78.11	-13.00	-65.11	Vertical

LTE Band 25_ 20 MHz_ QPSK _ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	3720.000	-65.42	7.18	-58.24	-13.00	-45.24	Horizontal
2	5580.000	-67.25	11.15	-56.10	-13.00	-43.10	Horizontal
3	3720.000	-66.15	7.17	-58.98	-13.00	-45.98	Vertical
4	5580.000	-67.17	11.63	-55.54	-13.00	-42.54	Vertical
<b>Middle Channel</b>							
1	3765.000	-64.60	7.29	-57.31	-13.00	-44.31	Horizontal
2	5647.500	-64.80	11.12	-53.68	-13.00	-40.68	Horizontal
3	3765.000	-64.31	7.29	-57.02	-13.00	-44.02	Vertical
4	5647.500	-64.27	11.59	-52.68	-13.00	-39.68	Vertical
<b>Highest Channel</b>							
1	3810.000	-58.20	7.40	-50.80	-13.00	-37.80	Horizontal
2	5715.000	-61.23	11.08	-50.15	-13.00	-37.15	Horizontal
3	3810.000	-60.80	7.42	-53.38	-13.00	-40.38	Vertical
4	5715.000	-62.09	11.54	-50.55	-13.00	-37.55	Vertical

### 5.3.8 LTE Band 26

LTE Band 26_ 15 MHz_ QPSK_Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	89.787	-85.35	15.30	-70.05	-13.00	-57.05	Horizontal
2	97.002	-86.15	15.83	-70.32	-13.00	-57.32	Horizontal
3	520.208	-89.10	27.66	-61.44	-13.00	-48.44	Horizontal
4	89.787	-85.61	15.30	-70.31	-13.00	-57.31	Vertical
5	398.296	-89.34	24.62	-64.72	-13.00	-51.72	Vertical
6	562.014	-89.15	28.52	-60.63	-13.00	-47.63	Vertical
<b>Middle Channel</b>							
1	89.787	-84.53	15.30	-69.23	-13.00	-56.23	Horizontal
2	401.105	-89.80	25.48	-64.32	-13.00	-51.32	Horizontal
3	684.226	-88.10	30.82	-57.28	-13.00	-44.28	Horizontal
4	91.700	-85.70	15.44	-70.26	-13.00	-57.26	Vertical
5	246.990	-89.13	20.17	-68.96	-13.00	-55.96	Vertical
6	718.725	-88.37	29.88	-58.49	-13.00	-45.49	Vertical
<b>Highest Channel</b>							
1	89.787	-84.53	15.30	-69.23	-13.00	-56.23	Horizontal
2	474.791	-88.44	26.50	-61.94	-13.00	-48.94	Horizontal
3	793.028	-88.04	31.71	-56.33	-13.00	-43.33	Horizontal
4	89.787	-85.36	15.30	-70.06	-13.00	-57.06	Vertical
5	259.443	-88.87	20.55	-68.32	-13.00	-55.32	Vertical
6	427.292	-88.49	25.88	-62.61	-13.00	-49.61	Vertical

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LTE Band 26_ 15 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	1663.000	-62.53	0.50	-62.03	-13.00	-49.03	Horizontal
2	2494.500	-64.70	3.17	-61.53	-13.00	-48.53	Horizontal
3	1663.000	-64.37	-0.27	-64.64	-13.00	-51.64	Vertical
4	2494.500	-65.24	2.77	-62.47	-13.00	-49.47	Vertical
<b>Middle Channel</b>							
1	1673.000	-63.75	0.56	-63.19	-13.00	-50.19	Horizontal
2	2509.500	-66.16	3.22	-62.94	-13.00	-49.94	Horizontal
3	1673.000	-62.71	-0.20	-62.91	-13.00	-49.91	Vertical
4	2509.500	-65.18	2.81	-62.37	-13.00	-49.37	Vertical
<b>Highest Channel</b>							
1	1683.000	-63.01	0.63	-62.38	-13.00	-49.38	Horizontal
2	2524.500	-64.79	3.27	-61.52	-13.00	-48.52	Horizontal
3	1683.000	-63.39	-0.12	-63.51	-13.00	-50.51	Vertical
4	2524.500	-66.38	2.85	-63.53	-13.00	-50.53	Vertical

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**5.3.9 LTE Band 26 (Part 90S)**

LTE Band 26_ 10 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Middle Channel</b>							
1	39.737	-88.92	18.42	-70.50	-13.00	-57.50	Horizontal
2	89.787	-85.08	15.30	-69.78	-13.00	-56.78	Horizontal
3	708.694	-88.72	30.97	-57.75	-13.00	-44.75	Horizontal
4	89.787	-84.85	15.30	-69.55	-13.00	-56.55	Vertical
5	430.305	-89.89	25.83	-64.06	-13.00	-51.06	Vertical
6	633.328	-88.61	28.22	-60.39	-13.00	-47.39	Vertical

LTE Band 26_ 10 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Middle Channel</b>							
1	1638.000	-63.54	0.34	-63.20	-13.00	-50.20	Horizontal
2	2457.000	-63.95	3.10	-60.85	-13.00	-47.85	Horizontal
3	1638.000	-62.35	-0.45	-62.80	-13.00	-49.80	Vertical
4	2457.000	-63.87	2.69	-61.18	-13.00	-48.18	Vertical

5.3.10 LTE Band 41

LTE Band 41_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	679.435	-80.63	1.29	-79.34	-25.00	-54.34	Horizontal
2	887.398	-80.53	3.22	-77.31	-25.00	-52.31	Horizontal
3	979.139	-81.24	4.57	-76.67	-25.00	-51.67	Horizontal
4	72.211	-64.89	-14.40	-79.29	-25.00	-54.29	Vertical
5	94.979	-65.87	-13.15	-79.02	-25.00	-54.02	Vertical
6	906.304	-80.60	3.42	-77.18	-25.00	-52.18	Vertical
<b>Middle Channel</b>							
1	703.731	-80.98	1.65	-79.33	-25.00	-54.33	Horizontal
2	781.961	-81.08	2.05	-79.03	-25.00	-54.03	Horizontal
3	945.334	-81.92	4.91	-77.01	-25.00	-52.01	Horizontal
4	75.321	-64.68	-14.31	-78.99	-25.00	-53.99	Vertical
5	92.997	-65.97	-13.31	-79.28	-25.00	-54.28	Vertical
6	827.179	-80.95	2.26	-78.69	-25.00	-53.69	Vertical
<b>Highest Channel</b>							
1	458.399	-80.18	-3.26	-83.44	-25.00	-58.44	Horizontal
2	749.676	-80.48	1.34	-79.14	-25.00	-54.14	Horizontal
3	945.334	-81.84	4.91	-76.93	-25.00	-51.93	Horizontal
4	72.720	-63.69	-14.39	-78.08	-25.00	-53.08	Vertical
5	97.686	-66.41	-12.92	-79.33	-25.00	-54.33	Vertical
6	932.141	-81.23	3.60	-77.63	-25.00	-52.63	Vertical

LTE Band 41_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	5012.000	-61.74	8.65	-53.09	-25.00	-28.09	Horizontal
2	7518.000	-49.83	12.97	-36.86	-25.00	-11.86	Horizontal
3	5012.000	-62.15	8.95	-53.20	-25.00	-28.20	Vertical
4	7518.000	-58.60	13.07	-45.53	-25.00	-20.53	Vertical
<b>Middle Channel</b>							
1	5186.000	-62.14	9.26	-52.88	-25.00	-27.88	Horizontal
2	7779.000	-44.85	13.50	-31.35	-25.00	-6.35	Horizontal
3	5186.000	-63.95	9.63	-54.32	-25.00	-29.32	Vertical
4	7779.000	-55.11	13.60	-41.51	-25.00	-16.51	Vertical
<b>Highest Channel</b>							
1	5360.000	-63.62	10.15	-53.47	-25.00	-28.47	Horizontal
2	8040.000	-54.66	14.01	-40.65	-25.00	-15.65	Horizontal
3	5360.000	-64.54	10.59	-53.95	-25.00	-28.95	Vertical
4	8040.000	-62.03	14.10	-47.93	-25.00	-22.93	Vertical

### 5.3.11 LTE Band 66

LTE Band 66_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	250.486	-78.45	-7.92	-86.37	-13.00	-73.37	Horizontal
2	669.952	-80.33	1.01	-79.32	-13.00	-66.32	Horizontal
3	952.000	-81.14	5.03	-76.11	-13.00	-63.11	Horizontal
4	73.233	-63.21	-14.37	-77.58	-13.00	-64.58	Vertical
5	96.323	-65.86	-13.04	-78.90	-13.00	-65.90	Vertical
6	979.139	-81.31	3.69	-77.62	-13.00	-64.62	Vertical
<b>Middle Channel</b>							
1	523.876	-80.72	-1.64	-82.36	-13.00	-69.36	Horizontal
2	669.952	-80.59	1.01	-79.58	-13.00	-66.58	Horizontal
3	925.613	-81.47	4.23	-77.24	-13.00	-64.24	Horizontal
4	71.203	-64.22	-14.44	-78.66	-13.00	-65.66	Vertical
5	74.793	-64.45	-14.32	-78.77	-13.00	-65.77	Vertical
6	97.002	-65.68	-12.98	-78.66	-13.00	-65.66	Vertical
<b>Highest Channel</b>							
1	698.804	-81.67	1.71	-79.96	-13.00	-66.96	Horizontal
2	804.252	-80.90	2.45	-78.45	-13.00	-65.45	Horizontal
3	979.139	-81.87	4.57	-77.30	-13.00	-64.30	Horizontal
4	72.211	-64.78	-14.40	-79.18	-13.00	-66.18	Vertical
5	97.002	-65.93	-12.98	-78.91	-13.00	-65.91	Vertical
6	899.958	-81.06	3.33	-77.73	-13.00	-64.73	Vertical

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LTE Band 66_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	3440.000	-58.68	6.36	-52.32	-13.00	-39.32	Horizontal
2	5160.000	-63.31	9.54	-53.77	-13.00	-40.77	Horizontal
3	3440.000	-58.51	6.17	-52.34	-13.00	-39.34	Vertical
4	5160.000	-64.43	9.90	-54.53	-13.00	-41.53	Vertical
<b>Middle Channel</b>							
1	3490.000	-63.06	6.52	-56.54	-13.00	-43.54	Horizontal
2	5235.000	-64.89	9.85	-55.04	-13.00	-42.04	Horizontal
3	3490.000	-63.58	6.40	-57.18	-13.00	-44.18	Vertical
4	5235.000	-65.63	10.24	-55.39	-13.00	-42.39	Vertical
<b>Highest Channel</b>							
1	3540.000	-60.05	6.66	-53.39	-13.00	-40.39	Horizontal
2	5310.000	-68.87	10.23	-58.64	-13.00	-45.64	Horizontal
3	3540.000	-67.94	6.58	-61.36	-13.00	-48.36	Vertical
4	5310.000	-69.12	10.65	-58.47	-13.00	-45.47	Vertical

5.3.12 LTE Band 71

LTE Band 71_ 20 MHz_ QPSK_ Below 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	89.787	-84.24	15.30	-68.94	-13.00	-55.94	Horizontal
2	406.782	-89.16	25.45	-63.71	-13.00	-50.71	Horizontal
3	546.437	-88.78	27.86	-60.92	-13.00	-47.92	Horizontal
4	91.700	-85.13	15.44	-69.69	-13.00	-56.69	Vertical
5	254.031	-89.22	20.43	-68.79	-13.00	-55.79	Vertical
6	433.340	-89.38	25.77	-63.61	-13.00	-50.61	Vertical
<b>Middle Channel</b>							
1	89.787	-84.69	15.30	-69.39	-13.00	-56.39	Horizontal
2	484.907	-89.03	26.57	-62.46	-13.00	-49.46	Horizontal
3	655.977	-88.28	29.94	-58.34	-13.00	-45.34	Horizontal
4	89.787	-85.31	15.30	-70.01	-13.00	-57.01	Vertical
5	355.940	-89.42	23.54	-65.88	-13.00	-52.88	Vertical
6	442.572	-87.98	25.61	-62.37	-13.00	-49.37	Vertical
<b>Highest Channel</b>							
1	89.787	-85.07	15.30	-69.77	-13.00	-56.77	Horizontal
2	412.539	-90.03	25.41	-64.62	-13.00	-51.62	Horizontal
3	527.571	-89.18	27.90	-61.28	-13.00	-48.28	Horizontal
4	89.787	-85.04	15.30	-69.74	-13.00	-56.74	Vertical
5	298.593	-89.37	21.42	-67.95	-13.00	-54.95	Vertical
6	615.774	-88.38	28.21	-60.17	-13.00	-47.17	Vertical

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LTE Band 71_ 20 MHz_ QPSK_ Above 1G							
No.	Frequency	SA Reading	Correction factor	EIRP Result	Limit	Margin	Ant. Pol.
	(MHz)	(dBm)	(dB/m)	(dBm)	(dBm)	(dB)	
<b>Lowest Channel</b>							
1	1346.000	-61.58	0.09	-61.49	-13.00	-48.49	Horizontal
2	2019.000	-63.24	2.40	-60.84	-13.00	-47.84	Horizontal
3	1346.000	-62.33	-0.60	-62.93	-13.00	-49.93	Vertical
4	2019.000	-63.97	1.90	-62.07	-13.00	-49.07	Vertical
<b>Middle Channel</b>							
1	1366.000	-61.83	0.02	-61.81	-13.00	-48.81	Horizontal
2	2049.000	-64.18	2.42	-61.76	-13.00	-48.76	Horizontal
3	1366.000	-61.67	-0.69	-62.36	-13.00	-49.36	Vertical
4	2049.000	-63.13	1.93	-61.20	-13.00	-48.20	Vertical
<b>Highest Channel</b>							
1	1376.000	-61.87	0.00	-61.87	-13.00	-48.87	Horizontal
2	2064.000	-66.17	2.43	-63.74	-13.00	-50.74	Horizontal
3	1376.000	-61.30	-0.73	-62.03	-13.00	-49.03	Vertical
4	2064.000	-64.48	1.94	-62.54	-13.00	-49.54	Vertical

Remark:

1. Correct Factor = Antenna Factor + Cable Loss - Amplifier Gain, the value was added to Original Receiver Reading by the software automatically.
2. Result = Reading + Correct Factor.
3. Margin = Result – Limit

## APPENDIX 1 PHOTOS OF TEST SETUP

See test photos attached in Appendix 1 for the actual connections between Product and support equipment.

## APPENDIX 2 PHOTOS OF EUT CONSTRUCTIONAL DETAILS

Refer to Appendix 2 for EUT external and internal photos.

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

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