



FCC RADIO TEST REPORT

FCC ID : RWO-RZ350259
Equipment : Smartphone
Brand Name : RAZER
Model Name : RZ35-0259
Applicant : Razer Inc.
9 Pasteur, Suite 100, Irvine, California,
United States 92618
Manufacturer : Razer Inc.
9 Pasteur, Suite 100, Irvine, California,
United States 92618
Standard : FCC 47 CFR Part 2, Part 27(D)

The product was received on Dec. 10, 2020 and testing was started from Feb. 08, 2021 and completed on Feb. 08, 2021. We, SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures given in ANSI / TIA-603-E and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory, the test report shall not be reproduced except in full.

Louis Wu

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



Table of Contents

History of this test report.....	3
Summary of Test Result.....	4
1 General Description	5
1.1 Product Feature of Equipment Under Test.....	5
1.2 Modification of EUT	5
1.3 Testing Site.....	6
1.4 Applied Standards	6
2 Test Configuration of Equipment Under Test	7
2.1 Test Mode.....	7
2.2 Frequency List of Low/Middle/High Channels	7
3 Conducted Test Items.....	8
3.1 Measuring Instruments	8
3.2 Conducted Output Power Measurement and EIRP Measurement	9
3.3 EIRP Power Density	10
4 List of Measuring Equipment.....	11
Appendix A. Test Results of Conducted Test	
Appendix B. Test Results of EIRP Test	



History of this test report

Report No.	Version	Description	Issued Date
FG9D2015-03B	01	Initial issue of report	Feb. 23, 2021



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
3.2	§2.1046	Conducted Output Power and Effective Isotropic Radiated Power	Reporting only	-
3.3	§27.50 (a)(3)	EIRP Power Density	Pass	-

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

Reviewed by: Wii Chang

Report Producer: Ruby Zou



1 General Description

1.1 Product Feature of Equipment Under Test

GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac, NFC, WPC and GNSS.

Product Specification subjective to this standard	
Antenna Type	WWAN: PIFA Antenna WLAN <Ant. 1>: PIFA Antenna <Ant. 2>: PIFA Antenna Bluetooth: PIFA Antenna GPS/Glonass/BDS: PIFA Antenna NFC: Loop Antenna WPC: Loop Antenna
Antenna Gain	1.20 dBi

Remark: The above EUT's information was declared by manufacturer. Please refer to Comments and Explanations in report summary.

1.2 Modification of EUT

No modifications are made to the EUT during all test items.

1.3 Testing Site

Test Site	SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory
Test Site Location	No.52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.) TEL: +886-3-327-3456 FAX: +886-3-328-4978
Test Site No.	Sporton Site No. TH05-HY
Test Engineer	Sherry Wu
Temperature	23~25°C
Relative Humidity	53~55%

FCC Designation No. TW1190

1.4 Applied Standards

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ♦ ANSI C63.26-2015
- ♦ FCC 47 CFR Part 2, Part 27(D)
- ♦ ANSI / TIA-603-E
- ♦ FCC KDB 971168 Power Meas License Digital Systems D01 v03r01
- ♦ FCC KDB 412172 D01 Determining ERP and EIRP v01r01

Remark:

1. All test items were verified and recorded according to the standards and without any deviation during the test.
2. The TAF code is not including all the FCC KDB listed without accreditation.

2 Test Configuration of Equipment Under Test

2.1 Test Mode

Antenna port conducted and radiated test items listed below are performed according to KDB 971168 D01 Power Meas. License Digital Systems v03r01 with maximum output power.

Test Items	Band	Bandwidth (MHz)						Modulation			RB #			Test Channel		
		1.4	3	5	10	15	20	QPSK	16QAM	64QAM	1	Half	Full	L	M	H
Max. Output Power	30	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
E.I.R.P PSD	30	-	-	v	v	-	-	v	v	v	v	v	v	v	v	v
Remark	1. The mark "v" means that this configuration is chosen for testing 2. The mark "-" means that this bandwidth is not supported.															

2.2 Frequency List of Low/Middle/High Channels

LTE Band 30 Channel and Frequency List				
BW [MHz]	Channel/Frequency(MHz)	Lowest	Middle	Highest
10	Channel	-	27710	-
	Frequency	-	2310	-
5	Channel	27685	27710	27735
	Frequency	2307.5	2310	2312.5

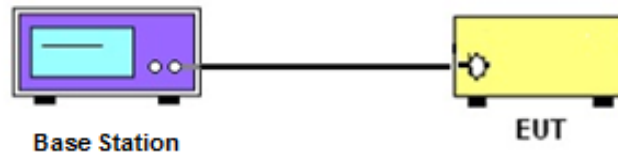
3 Conducted Test Items

3.1 Measuring Instruments

See list of measuring instruments of this test report.

3.1.1 Test Setup

3.1.2 Conducted Output Power



3.1.3 Test Result of Conducted Test

Please refer to Appendix A.

3.2 Conducted Output Power Measurement and EIRP Measurement

3.2.1 Description of the Conducted Output Power Measurement and EIRP Measurement

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals shall be reported.

According to KDB 412172 D01 Power Approach,

$EIRP = P_T + G_T - L_C$, where

P_T = transmitter output power in dBm

G_T = gain of the transmitting antenna in dBi

L_C = signal attenuation in the connecting cable between the transmitter and antenna in dB

3.2.2 Test Procedures

1. The transmitter output port was connected to the system simulator.
2. Set EUT at maximum power through the system simulator.
3. Select lowest, middle, and highest channels for each band and different modulation.
4. Measure and record the power level from the system simulator.



3.3 EIRP Power Density

3.3.1 Description of EIRP Power Density

For mobile and portable stations transmitting in the 2305-2315 MHz band or the 2350-2360 MHz band, the average EIRP must not exceed 50 milliwatts within any 1 megahertz of authorized bandwidth, *except that* for mobile and portable stations compliant with 3GPP LTE standards or another advanced mobile broadband protocol that avoids concentrating energy at the edge of the operating band the average EIRP must not exceed 250 milliwatts within any 5 megahertz of authorized bandwidth but may exceed 50 milliwatts within any 1 megahertz of authorized bandwidth. For mobile and portable stations using time division duplexing (TDD) technology, the duty cycle must not exceed 38 percent in the 2305-2315 MHz and 2350-2360 MHz bands. Mobile and portable stations using FDD technology are restricted to transmitting in the 2305-2315 MHz band. Power averaging shall not include intervals in which the transmitter is off.

3.3.2 Test Procedures

The testing follows ANSI C63.26-2015 Section 5.2.4.5

1. Set instrument center frequency to OBW center frequency.
2. Set span to at least 1.5 times the OBW.
3. Set the RBW to the specified reference bandwidth (5MHz).
4. Set VBW $\geq 3 \times$ RBW.
5. Detector = RMS (power averaging).
6. Ensure that the number of measurement points in the sweep $\geq 2 \times$ span/RBW.
7. Sweep time = auto couple.
8. Employ trace averaging (RMS) mode over a minimum of 100 traces.
9. Use the peak marker function to determine the maximum amplitude level within the reference bandwidth (PSD).
10. Determine the EIRP by adding the effective antenna gain to the adjusted power level.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Base Station(Measure)	Anritsu	MT8821C	62620025341	N/A	Oct. 06, 2020	Feb. 08, 2021	Oct. 05, 2021	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSV40	101909	10Hz~40GHz	May 19, 2020	Feb. 08, 2021	May 18, 2021	Conducted (TH05-HY)
Coupler	Warison	20dB 25W SMA Directional Coupler	#B	1-18GHz	Jan. 09, 2021	Feb. 08, 2021	Jan. 08, 2022	Conducted (TH05-HY)



Appendix A. Test Results of Conducted Test

Conducted Output Power(Average power)

LTE Band 30 Maximum Average Power [dBm]						
BW [MHz]	RB Size	RB Offset	Mod	Lowest	Middle	Highest
10	1	0	QPSK		22.15	
10	1	25			22.08	
10	1	49			21.94	
10	25	0			21.17	
10	25	12			21.14	
10	25	25			21.09	
10	50	0			21.15	
10	1	0	16-QAM	-	21.45	-
10	1	25			21.45	
10	1	49			21.22	
10	25	0			20.30	
10	25	12			20.24	
10	25	25			20.17	
10	50	0			20.25	
10	1	0	64-QAM		20.35	
10	1	25			20.37	
10	1	49			20.16	
10	25	0			19.30	
10	25	12			19.28	
10	25	25			19.24	
10	50	0			19.31	
5	1	0	QPSK	22.05	22.03	22.14
5	1	12		21.96	22.08	21.94
5	1	24		22.06	21.96	21.95
5	12	0		21.06	21.13	21.11
5	12	7		21.17	21.16	21.02
5	12	13		21.12	21.13	21.00
5	25	0		21.13	21.13	21.11
5	1	0	16-QAM	21.38	21.41	21.49
5	1	12		21.33	21.42	21.29
5	1	24		21.42	21.31	21.22
5	12	0		20.16	20.25	20.25
5	12	7		20.25	20.26	20.14
5	12	13		20.21	20.20	20.10
5	25	0		20.23	20.21	20.22
5	1	0	64-QAM	20.33	20.33	20.41
5	1	12		20.23	20.35	20.21
5	1	24		20.34	20.23	20.21
5	12	0		19.22	19.32	19.29
5	12	7		19.32	19.31	19.20
5	12	13		19.26	19.27	19.15
5	25	0		19.25	19.24	19.25

**EIRP Power Density**

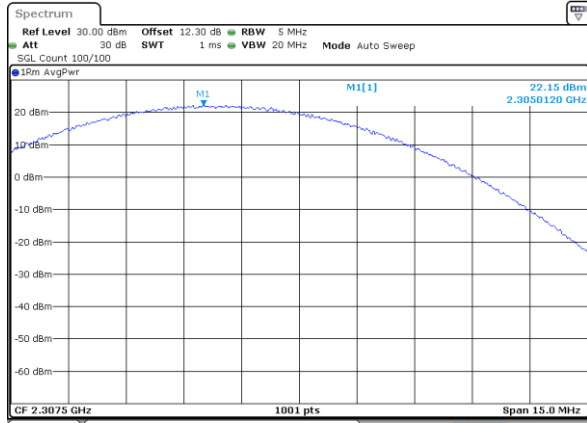
Mode	LTE Band 30 : Conducted Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	22.15	21.55	-	-	-	-	-	-
Middle CH	-	-	-	-	22.30	21.78	22.31	21.65	-	-	-	-
Highest CH	-	-	-	-	22.20	21.87	-	-	-	-	-	-
Mode	LTE Band 30 : Conducted Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	21.40	-	-	-	-	-	-	-
Middle CH	-	-	-	-	21.77	-	21.50	-	-	-	-	-
Highest CH	-	-	-	-	21.66	-	-	-	-	-	-	-

Mode	LTE Band 30 : EIRP Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM	QPSK	16QAM
Lowest CH	-	-	-	-	23.35	22.75			-	-	-	-
Middle CH	-	-	-	-	23.50	22.98	23.51	22.85	-	-	-	-
Highest CH	-	-	-	-	23.40	23.07			-	-	-	-
Mode	LTE Band 30 : EIRP Power Density (dBm/5MHz)											
BW	1.4MHz		3MHz		5MHz		10MHz		15MHz		20MHz	
Mod.	64QAM		64QAM		64QAM		64QAM		64QAM		64QAM	
Lowest CH	-	-	-	-	22.60	-	-	-	-	-	-	-
Middle CH	-	-	-	-	22.97	-	22.70	-	-	-	-	-
Highest CH	-	-	-	-	22.86	-	-	-	-	-	-	-
Antenna Gain	1.2 dBi											
Limit	250mW / 5MHz = 24dBm / 5MHz											
Result	Pass											



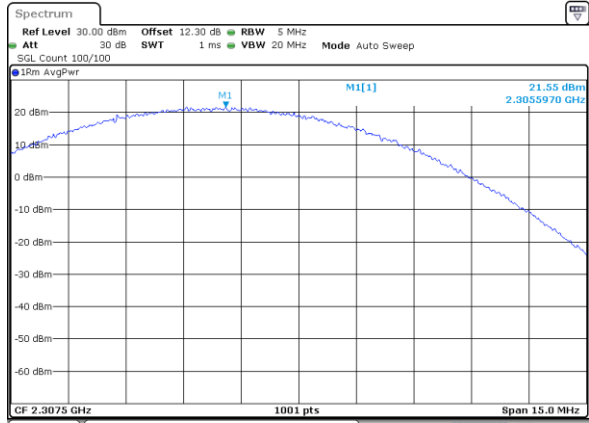
LTE Band 30 / 5MHz

Lowest Channel / 5MHz / 1RB0 / QPSK



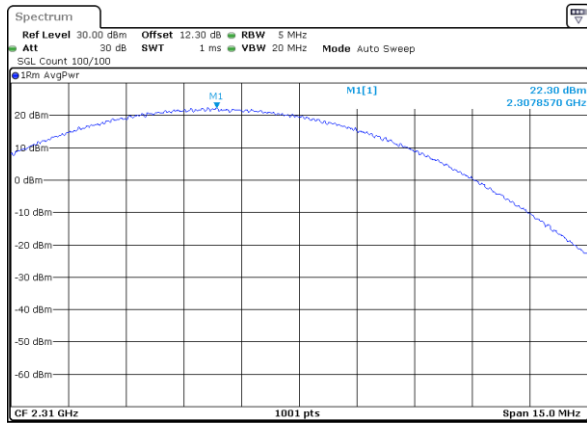
Date: 8.FEB.2021 16:52:37

Lowest Channel / 5MHz / 1RB0 / 16QAM



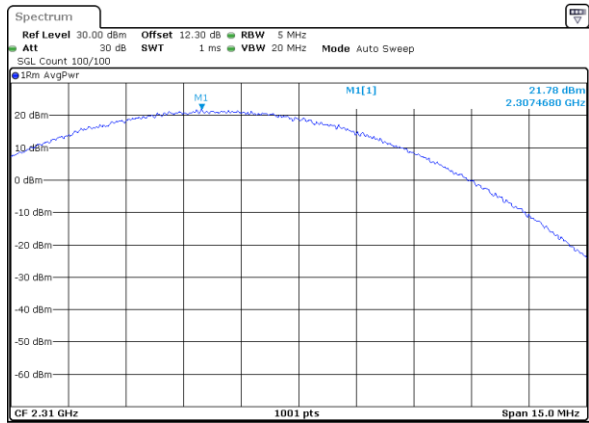
Date: 8.FEB.2021 16:52:58

Middle Channel / 5MHz / 1RB0 / QPSK



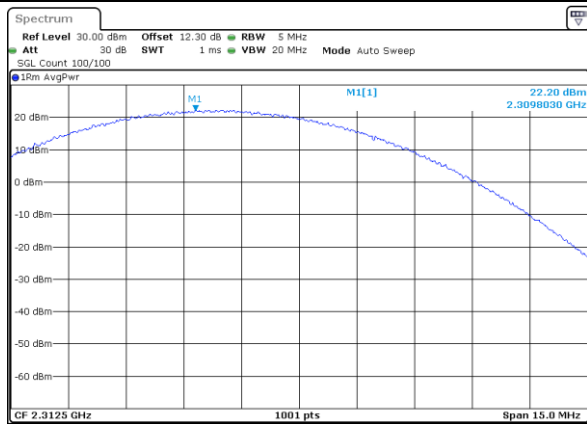
Date: 8.FEB.2021 16:53:40

Middle Channel / 5MHz / 1RB0 / 16QAM



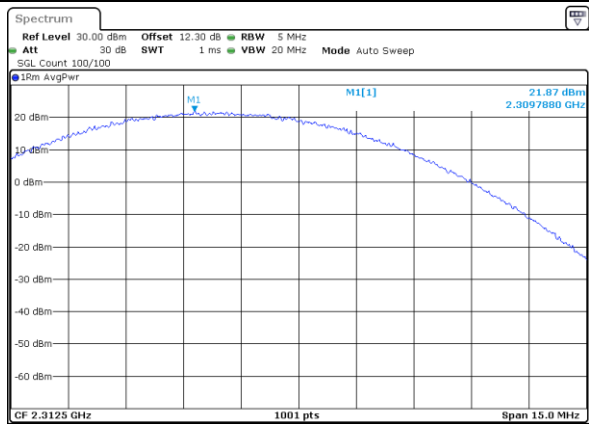
Date: 8.FEB.2021 16:54:00

Highest Channel / 5MHz / 1RB0 / QPSK



Date: 8.FEB.2021 16:54:42

Highest Channel / 5MHz / 1RB0 / 16QAM

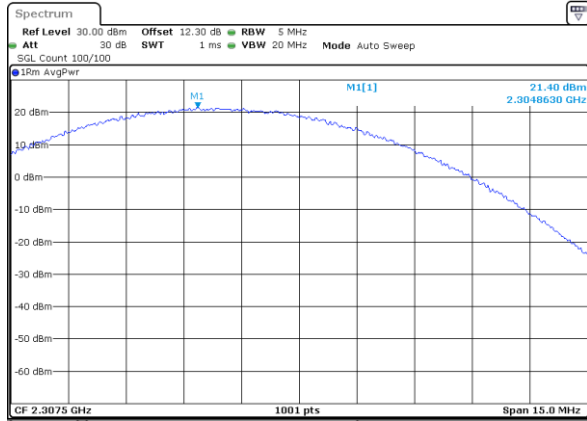


Date: 8.FEB.2021 16:55:03



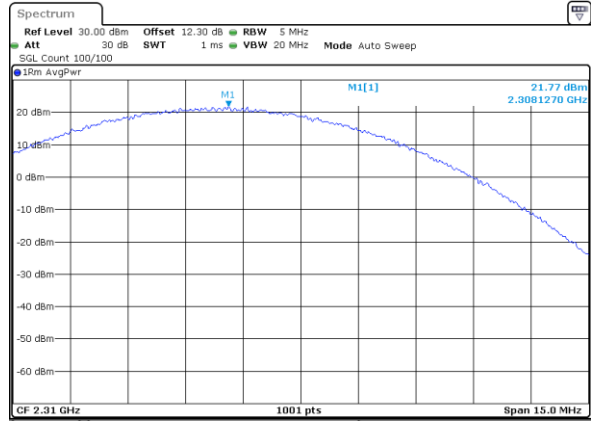
LTE Band 30 / 5MHz

Lowest Channel / 5MHz / 1RB0 / 64QAM



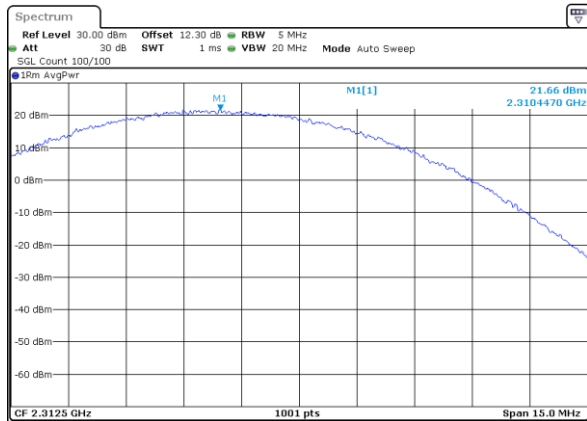
Date: 8 FEB 2021 16:53:19

Middle Channel / 5MHz / 1RB0 / 64QAM



Date: 8 FEB 2021 16:54:21

Highest Channel / 5MHz / 1RB0 / 64QAM

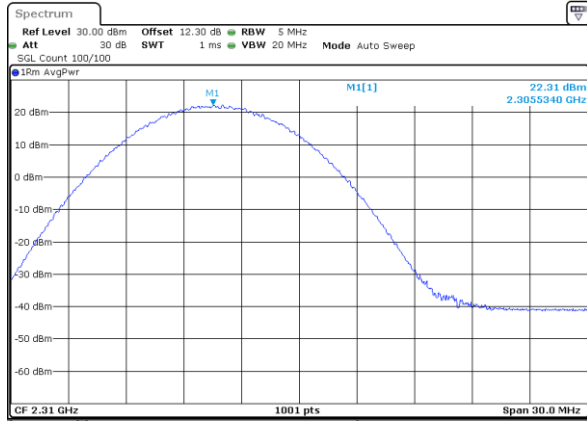


Date: 8 FEB 2021 16:55:24

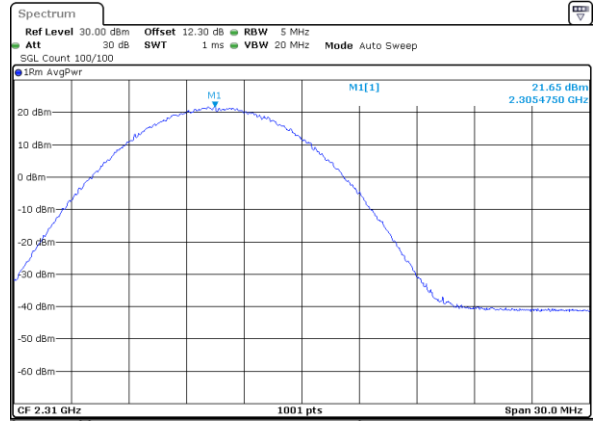


LTE Band 30 / 10MHz

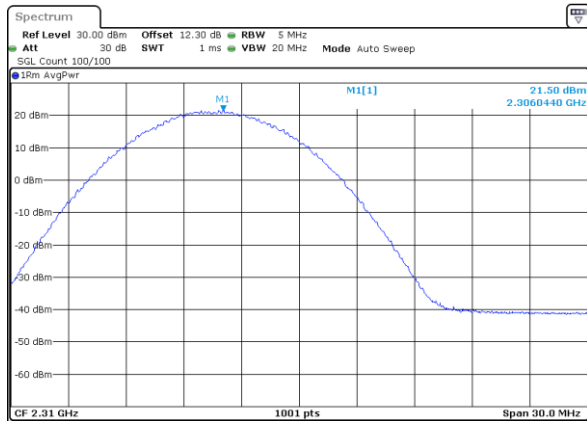
Lowest Channel / 10MHz / 1RB0 / QPSK



Lowest Channel / 10MHz / 1RB0 / 16QAM



Lowest Channel / 10MHz / 1RB0 / 64QAM





Appendix B. Test Results of EIRP Test

EIRP

<Reporting Only>

LTE Band 30 / 5MHz (Average) (GT - LC = 1.2 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	1	0	22.05	0.1603	23.25	0.2113
Middle		1	0	22.03	0.1596	23.23	0.2104
Highest		1	0	22.14	0.1637	23.34	0.2158
Lowest	16QAM	1	0	21.38	0.1374	22.58	0.1811
Middle		1	0	21.41	0.1384	22.61	0.1824
Highest		1	0	21.49	0.1409	22.69	0.1858
Lowest	64QAM	1	0	20.33	0.1079	21.53	0.1422
Middle		1	0	20.33	0.1079	21.53	0.1422
Highest		1	0	20.41	0.1099	21.61	0.1449

LTE Band 30 / 10MHz (Average) (GT - LC = 1.2 dB)							
Channel	Mode	RB		Conducted		EIRP	
		Size	Offset	Power (dBm)	Power (Watts)	EIRP(dBm)	EIRP(W)
Lowest	QPSK	-	-	-	-	-	-
Middle		1	0	22.15	0.1641	23.35	0.2163
Highest		-	-	-	-	-	-
Lowest	16QAM	-	-	-	-	-	-
Middle		1	0	21.45	0.1396	22.65	0.1841
Highest		-	-	-	-	-	-
Lowest	64QAM	-	-	-	-	-	-
Middle		1	25	20.37	0.1089	21.57	0.1435
Highest		-	-	-	-	-	-

—————THE END—————