

RF Test Report

Issued Date: Jun. 18, 2019

Applicant : Getac Technology Corporation
Product Type : Wireless Module
Trade Name : Getac
Model Number : EM7511
FCC ID : QYLEM7511U
EUT Rated Voltage : DC 3.7 V
Test Voltage : 120 Vac, 60 Hz
Receive Date : Mar. 06, 2019
Test Period : Apr. 09, 2019
Issue Date : May 16, 2019
Applicable Standard : FCC 47 CFR PART 90R
FCC 47 CFR PART 90S
ANSI C63.26
Test Result : Complied

Testing Laboratory

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Approved By

:



(Manager)

(Hai Wang)

Reviewed By

:



(Testing Engineer)

(Mick Zhang)



Revision History

Rev.	Issue Date	Revisions
00	May 16, 2019	Initial Issue.
01	Jun. 18, 2019	Page 8 Revised Note 2 information.



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1 General Information

1.1. EUT Description

Applicant	Getac Technology Corporation 5F.,Building A,No.209,Sec.1 Nangang.,Rd., Taipei City, 11568, Taiwan		
Manufacturer	Sierra Wireless Inc. 13811 Wireless Way, Richmond, BC, V6V 3A4, Canada		
Product Type	Wireless Module		
Trade Name	Getac		
Model Number	EM7511		
FCC ID	QYLEM7511U		
Class II Permissive Change	This is to request a Class II permissive change for FCC ID:QYLEM7511U , originally granted on 2019/4/30 The major change filed under this application is: Change #1: Additional Chassis added, Getac, model number: UX10 #2: Addition one antenna, the antenna type is same, the antenna gain is low than the original application. #3: Disable LTE band 30 & LTE band 48 by software.		
Host Information	Product Type: Tablet Trade Name: Getac Model Name: UX10		
IMEI No.	351664100100110		
Operate Band	Frequency Range (MHz)	Modulation	Channel Bandwidth
LTE Band 14	UL: 788 ~ 798	QPSK, 16QAM	5 MHz, 10 MHz
	DL: 758 ~ 768	QPSK, 16QAM	
LTE Band 26	UL: 814 ~ 824	QPSK, 16QAM	1.4 MHz, 3 MHz, 5 MHz, 10 MHz,
	DL: 859 ~ 869	QPSK, 16QAM	
Type of Antenna	FPC Antenna		
Antenna Gain	Main	LTE Band 14	0.90 dBi
		LTE Band 26	0.49 dBi
	AUX	LTE Band 14	-0.63 dBi
		LTE Band 26	0.30 dBi
Operate Temp. Range	-40 ~ 85 ℃		



Band	Channel Bandwidth	Modulation	Max. RF Output Power
			(W)
LTE Band14	5 MHz	QPSK	0.239
LTE Band14	5 MHz	16QAM	0.203
LTE Band14	10 MHz	QPSK	0.233
LTE Band14	10 MHz	16QAM	0.197
LTE Band26	1.4 MHz	QPSK	0.234
LTE Band26	1.4 MHz	16QAM	0.197
LTE Band26	3 MHz	QPSK	0.234
LTE Band26	3 MHz	16QAM	0.200
LTE Band26	5 MHz	QPSK	0.234
LTE Band26	5 MHz	16QAM	0.200
LTE Band26	10 MHz	QPSK	0.235
LTE Band26	10 MHz	16QAM	0.200

1.2. Mode of Operation

Three channels had been tested for each channel bandwidth.

LTE Band 14				
Channel Bandwidth	5 MHz		10 MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	23305	790.5	---	---
Middle CH	23330	793	23330	793
High CH	23255	795.5	---	---

LTE Band 26				
Channel Bandwidth	1.4 MHz		3 MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	26697	814.7	26705	815.5
Middle CH	26740	819.0	26740	819.0
High CH	26783	823.3	26775	822.5
Channel Bandwidth	5 MHz		10 MHz	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
Low CH	26715	816.5	26740	819.0
Middle CH	26740	819.0		
High CH	26765	821.5		

During all testing, EUT is in link mode with base station emulator at maximum power level. The spurious emission measurements were carried out in semi-anechoic chamber with 3-meter test range, and EUT is rotated on three test planes to find out the worst emission.

Frequency range investigated for radiated emission: 9 kHz to 10th Harmonic

Band	Channel Bandwidth	Test Modes	
LTE Band 14	5 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☒ LTE(RB Size 1, RB Offset 12) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☒ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK
LTE Band 26	1.4 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 2) Link ☐ LTE(RB Size 1, RB Offset 5) Link ☐ LTE(RB Size 3, RB Offset 0) Link ☒ LTE(RB Size 3, RB Offset 1) Link ☐ LTE(RB Size 3, RB Offset 3) Link ☐ LTE(RB Size 6, RB Offset 0) Link	QPSK
	3 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☒ LTE(RB Size 1, RB Offset 7) Link ☐ LTE(RB Size 1, RB Offset 14) Link ☐ LTE(RB Size 8, RB Offset 0) Link ☐ LTE(RB Size 8, RB Offset 3) Link ☐ LTE(RB Size 8, RB Offset 7) Link ☐ LTE(RB Size 15, RB Offset 0) Link	QPSK
	5 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☒ LTE(RB Size 1, RB Offset 12) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☐ LTE(RB Size 12, RB Offset 0) Link ☐ LTE(RB Size 12, RB Offset 6) Link ☐ LTE(RB Size 12, RB Offset 13) Link ☐ LTE(RB Size 25, RB Offset 0) Link	QPSK
	10 MHz	☐ LTE(RB Size 1, RB Offset 0) Link ☐ LTE(RB Size 1, RB Offset 24) Link ☒ LTE(RB Size 1, RB Offset 49) Link ☐ LTE(RB Size 25, RB Offset 0) Link ☐ LTE(RB Size 25, RB Offset 12) Link ☐ LTE(RB Size 25, RB Offset 25) Link ☐ LTE(RB Size 50, RB Offset 0) Link	QPSK

1.3. EUT Test Step

1	Setup the EUT shown on "Configuration of Test System Details".
2	Turn on the power of all equipment.
3	EUT run test program test.



1.4. Test Instruments

For Conducted

Test Period: Apr. 09, 2019

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Cycle
Power Supply	KEITHLEY	2303	4045290	02/12/2019	1 year
Radio Communication Analyzer	Anritsu	MT8820C	6201342039	12/13/2018	1 year

1.5. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	990

Test Setting Condition		
N.V.	Normal Voltage	AC 120 V
N.T.	Normal Temperature	+25 °C

1.6. Summary of Test Result

FCC Rule	Description	Result
§2.1046	Conducted Output Average Power	Pass
§90.542	Equivalent Isotropic Radiated Power / Equivalent Radiated Power	N/A (Note2)
§2.1055	Frequency Stability	N/A (Note1)
§2.1049	Emission Bandwidth & Occupied Bandwidth	N/A (Note1)
KDB 971168	Peak to average ratio	N/A (Note1)
§2.1051 §90.543	Band Edge	N/A (Note1)
§2.1051 §90.543	Conducted Spurious Emissions	N/A (Note1)
§2.1053 §90.543	Radiated Spurious Emissions	N/A (Note2)

Note 1: Class II permissive change. No need for verification.

Note 2: Equivalent Isotropic Radiated Power / Equivalent Radiated Power and Radiated Spurious Emissions no need for verification due to Power is the worst in LTE Band 13. Therefore, in the LTE technology part, the Radiated Spurious Emissions only verifies the LTE Band 13.

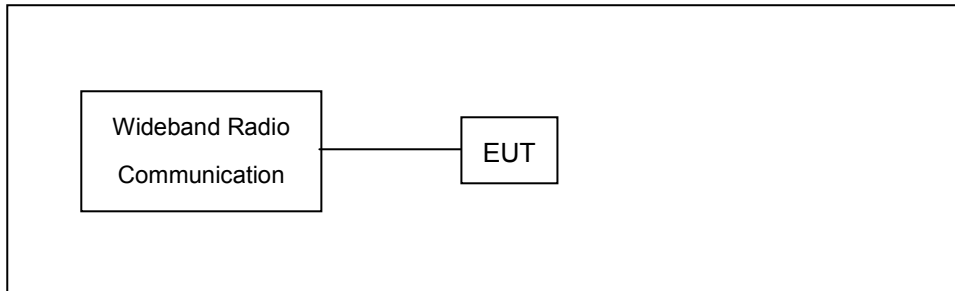
2 Measurement Procedure

2.1. Conducted Output Average Power Test

■ Limit

N/A

■ Test Setup



■ Test Procedure

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

■ Uncertainty

The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

3 Test Results

Conducted Output Average Power

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band14	5 MHz	QPSK	23305	790.5	1	0	23.77	0.238
					1	12	23.78	0.239
					1	24	23.76	0.238
					12	0	22.90	0.195
					12	6	22.93	0.196
					12	13	22.91	0.195
					25	0	22.89	0.195
			23330	793.0	1	0	23.69	0.234
					1	12	23.67	0.233
					1	24	23.67	0.233
					12	0	22.78	0.190
					12	6	22.82	0.191
					12	13	22.79	0.190
					25	0	22.75	0.188
			23355	795.5	1	0	23.68	0.233
					1	12	23.75	0.237
					1	24	23.74	0.237
					12	0	22.82	0.191
					12	6	22.91	0.195
					12	13	22.86	0.193
					25	0	22.86	0.193
		16QAM	23305	790.5	1	0	23.04	0.201
					1	12	23.00	0.200
					1	24	23.02	0.200
					12	0	21.93	0.156
					12	6	21.95	0.157
					12	13	21.89	0.155
					25	0	21.90	0.155
			23330	793.0	1	0	23.02	0.200
					1	12	22.97	0.198
					1	24	22.94	0.197
					12	0	21.82	0.152
					12	6	21.81	0.152
					12	13	21.81	0.152
					25	0	21.77	0.150
			23355	795.5	1	0	23.01	0.200
					1	12	23.07	0.203
					1	24	23.07	0.203
					12	0	21.80	0.151
					12	6	21.90	0.155
					12	11	21.90	0.155
					25	0	21.87	0.154



Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band14	10 MHz	QPSK	23330	793.0	1	0	23.67	0.233
					1	24	23.65	0.232
					1	49	23.68	0.233
					25	0	22.78	0.190
					25	12	22.77	0.189
					25	25	22.85	0.193
		16QAM			50	0	22.75	0.188
					1	0	22.94	0.197
					1	24	22.90	0.195
					1	49	22.93	0.196
					25	0	21.82	0.152
					25	12	21.78	0.151
					25	25	21.84	0.153
					50	0	21.76	0.150

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band26	1.4 MHz	QPSK	26697	814.7	1	0	23.56	0.227
					1	2	23.63	0.231
					1	5	23.48	0.223
					3	0	23.52	0.225
					3	1	23.58	0.228
					3	3	23.53	0.225
			26740	819.0	6	0	22.53	0.179
					1	0	23.57	0.228
					1	2	23.63	0.231
					1	5	23.60	0.229
					3	0	23.65	0.232
					3	1	23.70	0.234
					3	3	23.64	0.231
					6	0	22.53	0.179
			26783	823.3	1	0	23.47	0.222
					1	2	23.63	0.231
					1	5	23.55	0.226
					3	0	23.50	0.224
					3	1	23.67	0.233
					3	3	23.61	0.230
					6	0	22.61	0.182
		16QAM	26697	814.7	1	0	22.82	0.191
					1	2	22.84	0.192
					1	5	22.74	0.188
					3	0	22.65	0.184
					3	1	22.70	0.186
					3	3	22.64	0.184
			26740	819.0	6	0	21.58	0.144
					1	0	22.87	0.194
					1	2	22.94	0.197
					1	5	22.86	0.193
					3	0	22.76	0.189
					3	1	22.72	0.187
					3	3	22.61	0.182
					6	0	21.62	0.145
			26783	823.3	1	0	22.75	0.188
					1	2	22.89	0.195
					1	5	22.81	0.191
					3	0	22.59	0.182
					3	1	22.76	0.189
					3	3	22.66	0.185
					6	0	21.67	0.147

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band26	3 MHz	QPSK	26705	815.5	1	0	23.58	0.228
					1	7	23.69	0.234
					1	14	23.68	0.233
					8	0	22.56	0.180
					8	3	22.59	0.182
					8	7	22.68	0.185
					15	0	22.57	0.181
			26740	819.0	1	0	23.53	0.225
					1	7	23.64	0.231
					1	14	23.51	0.224
					8	0	22.62	0.183
					8	3	22.65	0.184
					8	7	22.61	0.182
					15	0	22.59	0.182
			26775	822.5	1	0	23.54	0.226
					1	7	23.64	0.231
					1	14	23.57	0.228
					8	0	22.61	0.182
					8	3	22.60	0.182
					8	7	22.66	0.185
					15	0	22.56	0.180
		16QAM	26705	815.5	1	0	22.89	0.195
					1	7	23.02	0.200
					1	14	22.90	0.195
					8	0	21.61	0.145
					8	3	21.61	0.145
					8	7	21.71	0.148
					15	0	21.54	0.143
			26740	819.0	1	0	22.80	0.191
					1	7	22.94	0.197
					1	14	22.87	0.194
					8	0	21.65	0.146
					8	3	21.68	0.147
					8	7	21.66	0.147
					15	0	21.57	0.144
			26775	822.5	1	0	22.85	0.193
					1	7	22.97	0.198
					1	14	22.92	0.196
					8	0	21.65	0.146
					8	3	21.68	0.147
					8	7	21.72	0.149
					15	0	21.56	0.143

Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band26	5 MHz	QPSK	26715	816.5	1	0	23.62	0.230
					1	12	23.69	0.234
					1	24	23.68	0.233
					12	0	22.66	0.185
					12	6	22.81	0.191
					12	13	22.79	0.190
					25	0	22.74	0.188
			26740	819.0	1	0	23.55	0.226
					1	12	23.56	0.227
					1	24	23.55	0.226
					12	0	22.62	0.183
					12	6	22.62	0.183
					12	13	22.62	0.183
					25	0	22.63	0.183
			26765	821.5	1	0	23.55	0.226
					1	12	23.54	0.226
					1	24	23.64	0.231
					12	0	22.60	0.182
					12	6	22.63	0.183
					12	13	22.58	0.181
					25	0	22.61	0.182
		16QAM	26715	816.5	1	0	22.94	0.197
					1	12	22.96	0.198
					1	24	23.02	0.200
					12	0	21.72	0.149
					12	6	21.81	0.152
					12	13	21.80	0.151
					25	0	21.81	0.152
			26740	819.0	1	0	22.86	0.193
					1	12	22.83	0.192
					1	24	22.87	0.194
					12	0	21.68	0.147
					12	6	21.67	0.147
					12	13	21.66	0.147
					25	0	21.63	0.146
			26765	821.5	1	0	22.90	0.195
					1	12	22.90	0.195
					1	24	22.94	0.197
					12	0	21.67	0.147
					12	6	21.66	0.147
					12	11	21.63	0.146
					25	0	21.62	0.145



Band	Channel Bandwidth	Modulation	Channel	Frequency (MHz)	RB Configuration		Average Power	
					Size	Offset	(dBm)	(W)
LTE Band26	10 MHz	QPSK	26740	819.0	1	0	23.57	0.228
					1	24	23.68	0.233
					1	49	23.71	0.235
					25	0	22.80	0.191
					25	12	22.80	0.191
					25	25	22.72	0.187
		16QAM			50	0	22.66	0.185
					1	0	22.88	0.194
					1	24	22.97	0.198
					1	49	23.01	0.200
					25	0	21.67	0.147
					25	12	21.71	0.148
					25	25	21.63	0.146
					50	0	21.64	0.146