



FCC RADIO TEST REPORT

FCC ID : J9CQSIP7180
Equipment : 7c Modular Platform
Brand Name : Qualcomm
Model Name : QSIP7180
Applicant : Qualcomm Technologies, Inc.
5775 Morehouse Dr.San Diego, CA
92121-1714 (USA)
Manufacturer : Qualcomm Technologies, Inc.
5775 Morehouse Dr.San Diego, CA
92121-1714 (USA)
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jun. 08, 2020 and testing was started from Aug. 17, 2020 and completed on Aug. 17, 2020. 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 and has been in compliance with the applicable technical standards.

The test results in this variant 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.

Approved by: Louis Wu

SPORTON INTERNATIONAL INC. EMC & Wireless Communications Laboratory

No. 52, Huaya 1st Rd., Guishan Dist., Taoyuan City, Taiwan (R.O.C.)



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History of this test report

Report No.	Version	Description	Issued Date
FR042002E	01	Initial issue of report	Sep. 17, 2020



Summary of Test Result

Report Clause	Ref Std. Clause	Test Items	Result (PASS/FAIL)	Remark
-	15.403 (i)	6dB & 26dB Bandwidth	Not Required	-
-	2.1049	99% Occupied Bandwidth	Not Required	-
3.1	15.407 (a)	Maximum Conducted Output Power	Pass	-
-	15.407 (a)	Power Spectral Density	Not Required	-
-	15.407(b)	Unwanted Emissions	Not Required	-
-	15.207	AC Conducted Emission	Not Required	-
-	15.407 (c)	Automatically Discontinue Transmission	Not Required	-
3.2	15.203 & 15.407 (a)	Antenna Requirement	Pass	-

Note:

- Not required means after assessing, test items are not necessary to carry out.
- QSIP7180 is an initial module including WCDMA, LTE, Wi-Fi and BT wireless communication technology. QSIP7180P is a variant module of QSIP7180, the design architecture of the two is the same, but QSIP7180P removes the WWAN functional blocks such as LTE and WCDMA. So, QSIP7180P keeps its' Wi-Fi and BT functional block with the same design and electrical characteristics as QSIP7180. Therefore, we run spot check verification approach to confirm and certify the QSIP7180P's EMC and RF performance which is theoretically equivalent to QSIP7180. As presented in this report which is the result of spot check verification for QSIP7180P.

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: Lucy Wu



1 General Description

1.1 Product Feature of Equipment Under Test

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

Antenna Information								
Antenna No.	Brand	Model	Antenna Net gain	Frequency Range (MHz)	Cable Loss (dBi)	Ant. Type	Connector Type	Cable Length (mm)
1	WNC	81.EBJ15.005	3.00	2400-2500 MHz	1.15	PIFA	IPEX	300
			2.56	5150-5350 MHz	1.7			
			4.76	5470-5725MHz	1.74			
			4.76	5725-5825 MHz	1.79			
2	WNC	81.EBJ15.005	3.62	2400-2500 MHz	1.15	PIFA	IPEX	300
			3.08	5150-5350 MHz	1.7			
			3.31	5470-5725MHz	1.74			
			2.42	5725-5825 MHz	1.79			

Remark:

1. Above antenna gains of antenna are Total (H+V).
2. For Bluetooth mode was fixed transmission on Chain (0)
3. The maximum gain was chosen for test.

1.2 Modification of EUT

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

1.3 Testing Location

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

FCC designation No.: TW1190



1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 662911 D01 Multiple Transmitter Output v02r01.
- ♦ ANSI C63.10-2013

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.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency and Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5725-5850 MHz Band 4 (U-NII-3)	149	5745	157	5785
	151*	5755	159*	5795
	153	5765	161	5805
	155#	5775	165	5825

Note:

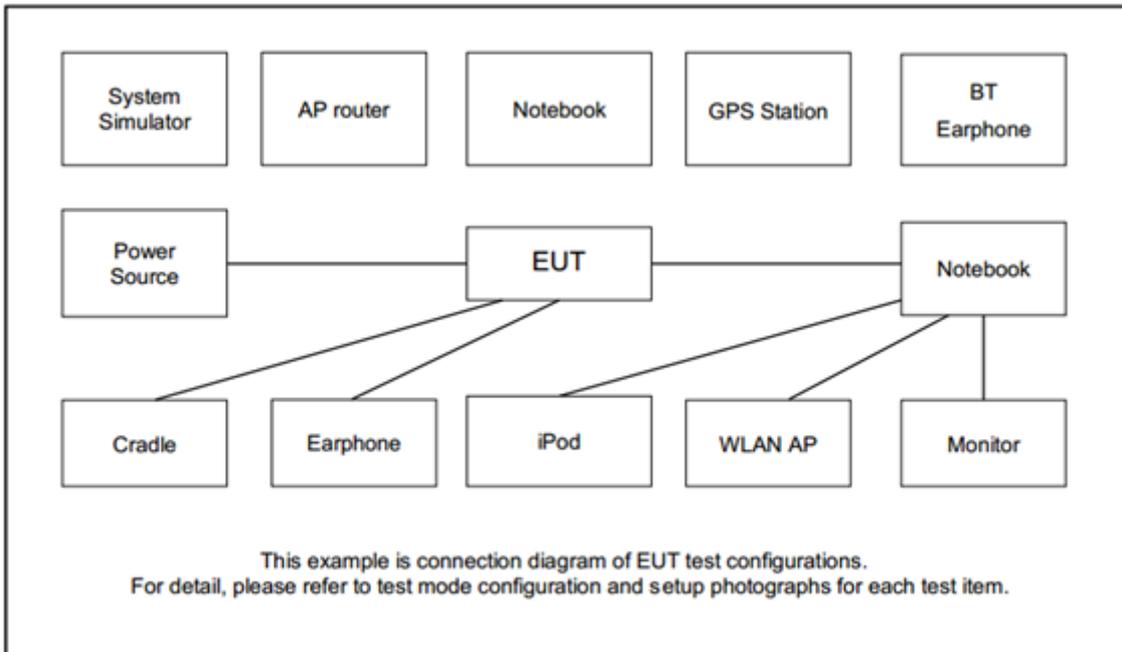
1. The above Frequency and Channel in "*" were 802.11n HT40 and 802.11ac VHT40.
2. The above Frequency and Channel in "#n" were 802.11ac VHT80.

2.2 Test Mode

Final test modes are considering the modulation and worse data rates as below table.

Modulation	Data Rate
802.11a	6 Mbps
802.11n HT20	MCS0
802.11n HT40	MCS0
802.11ac VHT20	MCS0
802.11ac VHT40	MCS0
802.11ac VHT80	MCS0

2.3 Connection Diagram of Test System



2.4 EUT Operation Test Setup

The RF test items, utility “QRCT v4.0” was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.1.2 Measuring Instruments

See list of measuring equipment of this test report.

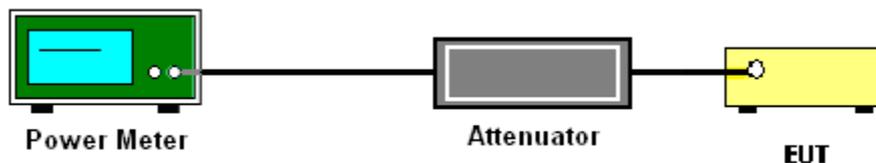
3.1.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, $10 \log(1/x)$, where x is the duty cycle.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.



3.2 Antenna Requirements

3.2.1 Standard Applicable

If transmitting antenna directional gain is greater than 6 dBi, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.

3.2.3 Antenna Gain

The antenna peak gain of EUT is less than 6 dBi. Therefore, it is not necessary to reduce maximum peak output power limit.



4 List of Measuring Equipment

Instrument	Brand Name	Model No.	Serial No.	Characteristics	Calibration Date	Test Date	Due Date	Remark
Hygrometer	Testo	608-H1	34893241	N/A	Mar. 02, 2020	Aug. 17, 2020	Mar. 01, 2021	Conducted (TH05-HY)
Power Sensor	DARE	RPR3006W	16I00054S NO10	10MHz~6GHz	Dec. 23, 2019	Aug. 17, 2020	Dec. 22, 2020	Conducted (TH05-HY)
Spectrum Analyzer	Rohde & Schwarz	FSP40	100055	9kHz-40GHz	Dec. 30, 2019	Aug. 17, 2020	Dec. 29, 2020	Conducted (TH05-HY)
Switch Box & RF Cable	Burgeon	ETF-058	EC130048 4	N/A	Aug. 22, 2019	Aug. 17, 2020	Aug. 21, 2020	Conducted (TH05-HY)
Power Supply	GW Instek	SPS-606	GES84293 1	NA	Aug. 19, 2019	Aug. 17, 2020	Aug. 18, 2020	Conducted (TH05-HY)

Appendix A. Test Result of Conducted Test Items

Test Engineer:	Kai Liao/Shiming Liu	Temperature:	21~22	°C
Test Date:	2020/08/17	Relative Humidity:	51~52	%

TEST RESULTS DATA
Average Power Table

Band IV MIMO												
Mod.	Data Rate	NTX	CH.	Freq. (MHz)	Average Conducted Power (dBm)			FCC Conducted Power Limit (dBm)		DG (dBi)		Pass/Fail
					Ant 0	Ant 1	SUM	Ant 0	Ant 1	Ant 0	Ant 1	
11a	6Mbps	2	149	5745	18.20	17.40	20.83	28.23		7.77	Pass	
11a	6Mbps	2	157	5785	18.30	17.50	20.93	28.23		7.77	Pass	
11a	6Mbps	2	165	5825	18.20	17.30	20.78	28.23		7.77	Pass	
HT20	MCS0	2	149	5745	18.40	17.50	20.98	28.23		7.77	Pass	
HT20	MCS0	2	157	5785	18.10	17.60	20.87	28.23		7.77	Pass	
HT20	MCS0	2	165	5825	18.40	17.50	20.98	28.23		7.77	Pass	
HT40	MCS0	2	151	5755	18.10	17.30	20.73	28.23		7.77	Pass	
HT40	MCS0	2	159	5795	18.30	17.30	20.84	28.23		7.77	Pass	
VHT20	MCS0	2	149	5745	18.30	17.40	20.88	28.23		7.77	Pass	
VHT20	MCS0	2	157	5785	18.00	17.40	20.72	28.23		7.77	Pass	
VHT20	MCS0	2	165	5825	18.40	17.40	20.94	28.23		7.77	Pass	
VHT40	MCS0	2	151	5755	18.00	17.00	20.54	28.23		7.77	Pass	
VHT40	MCS0	2	159	5795	18.20	17.30	20.78	28.23		7.77	Pass	
VHT80	MCS0	2	155	5775	18.20	17.30	20.78	28.23		7.77	Pass	

————THE END————