RF EXPOSURE REPORT

REPORT NO.: SA111031E02

MODEL NO.: RTL8723AE

FCC ID: TX2-RTL8723AE

RECEIVED: Oct. 31, 2011

TESTED: Nov. 16, 2011

ISSUED: Nov. 29, 2011

APPLICANT: Realtek Semiconductor Corp.

ADDRESS: No. 2, Innovation Road II, Hsinchu Science Park, Hsinchu 300, Taiwan

ISSUED BY: Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch Hsin Chu Laboratory

LAB ADDRESS: No. 81-1, Lu Liao Keng, 9th Ling, Wu Lung Tsuen, Chiung Lin Hsiang, Hsin Chu Hsien 307, Taiwan

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RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
SA111031E02	Original release	Nov. 29, 2011

1.CERTIFICATION

PRODUCT:	802.11b/g/n RTL8723AE Combo miniCard
BRAND NAME:	Realtek
MODEL NO.:	RTL8723AE
TEST SAMPLE:	ENGINEERING SAMPLE
TESTED:	Nov. 16, 2011
APPLICANT:	Realtek Semiconductor Corp.
STANDARDS:	FCC Part 2 (Section 2.1091)
	FCC OET Bulletin 65, Supplement C (01-01)
	IEEE C95.1

The above equipment (Model: RTL8723AE) has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's EMC characteristics under the conditions specified in this report.

PREPARED BY : Phoenix Huang , **DATE:** Nov. 29, 2011
(Phoenix Huang, Specialist)

APPROVED BY : , **DATE:** Nov. 29, 2011
(May Chen, Deputy Manager)

2. RF EXPOSURE LIMIT

LIMITS FOR MAXIMUM PERMISSIBLE EXPOSURE (MPE)

FREQUENCY RANGE (MHz)	ELECTRIC FIELD STRENGTH (V/m)	MAGNETIC FIELD STRENGTH (A/m)	POWER DENSITY (mW/cm^2)	AVERAGE TIME (minutes)
LIMITS FOR GENERAL POPULATION / UNCONTROLLED EXPOSURE				
300-1500	…	…	F/1500	30
1500-100,000	…	…	1.0	30

F = Frequency in MHz

3. MPE CALCULATION FORMULA

$Pd = (Pout*G) / (4*pi*r^2)$

where

Pd = power density in mW/cm^2

Pout = output power to antenna in mW

G = gain of antenna in linear scale

pi = 3.1416

r = distance between observation point and center of the radiator in cm

4. CLASSIFICATION

The antenna of this product, under normal use condition, is at least 20cm away from the body of the user. So, this device is classified as **Mobile Device**.

5.Antenna Gain

1. There are 172 antennas provided to this EUT, please refer to the following table:

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
1	JOYMAX	TWF-614XMPXX-500 (Main) TWF-614XMPXX-500 (Aux)	Dipole	3 3	NA	IPEX
2	LYNwave	ALA110-222050-150010 (Main) ALA110-222050-150010 (Aux)	PIFA	3.5 3.5	NA	IPEX
3	ACON	APP8P-700186 (Main) APP8P-700185 (Aux)	PIFA	1.84 0.07	0.81 1.12	IPEX, MHF, U.FL-L(P)

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
4	ACON	APP8P-700188 (Main) APP8P-700187 (Aux)	PIFA	1.84 0.07	0.81 1.12	IPEX, MHF, U.FL-L(P)
5	WHAYU	C435-520042-A (Main) C435-520045-A (Aux)	PIFA	1.91 1.88	1.11 1.85	Technova
6	WHAYU	C435-520044-A (Main) C435-520043-A (Aux)	PIFA	1.96 1.97	1.11 1.85	Technova
7	WNC	25.90A1E.001 (Main) 25.90A1F.001 (Aux)	PIFA	1.89 -0.90	-1.85 -1.84	IPEX
8	YAGEO	25.90A1E.011 (Main) 25.90A1F.011 (Aux)	PIFA	1.94 1.78	1.95 2.04	U.FL
9	WNC	25.91370.021 (Main) 25.91371.021 (Aux)	PIFA	0.51 0.58	1.40 1.73	IPEX
10	YAGEO	25.91370.011 (Main) 25.91371.011 (Aux)	PIFA	1.06 0.16	1.36 2.00	U.FL
11	Quanta	DQ6GC200100 (Main) DQ6GC200200 (Aux)	PIFA	0.1 -0.4	NA	IPEX
12	Tyco	25.90A4C.021 (Main) 25.90A4D.021 (Aux)	PIFA	0.06 0.18	1.55 1.60	U.FL
13	WNC	25.90A4C.001 (Main) 25.90A4D.001 (Aux)	PIFA	1.52 -0.60	1.83 1.84	U.FL
14	YAGEO	25.90A4C.011 (Main) 25.90A4D.011 (Aux)	PIFA	0.93 -0.17	1.64 1.65	U.FL
15	ACON	25.90929.001 (Main) 25.90930.001 (Aux)	PIFA	-0.04 1.16	NA	IPEX, Hirose, U.FL-L(P)
16	Ethertronics Inc.	25.90934.001 (Main) 25.90935.001 (Aux)	PIFA	0.60 -0.59	NA	U.FL
17	WNC	25.90919.001 (Main) 25.90920.001 (Aux)	PIFA	0.87 -0.93	NA	IPEX
18	Tyco	25.90A2G.021 (Main) 25.90A2H.021 (Aux)	PIFA	-0.38 1.04	1.49 1.59	IPEX
19	WNC	25.90A2G.001 (Main) 25.90A2H.001 (Aux)	PIFA	1.23 0.29	1.65 1.74	IPEX
20	YAGEO	25.90A2G.011 (Main) 25.90A2H.011 (Aux)	PIFA	0.48 -1.37	1.50 1.60	U.FL
21	Amphenol	C-2238-11-000-26 (Main) C-2239-11-000-26 (Aux)	PIFA	-1.31 -3.09	0.92 1.08	U.FL
22	Amphenol	C-1952-11-000-26 (Main) C-1953-11-000-26 (Aux)	PIFA	0.35 -1.20	0.92 1.08	U.FL

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
23	Foxconn	WDAN-LFNZ3001-DH (Main) WDAN-LFNZ3002-DH (Aux)	PIFA Coupling Type Inverted F	1.14 0.61	1.03 1.12	IPEX
24	Tyco	1556219-1 (Main) 1556220-1 (Aux)	PIFA	0.64 -0.92	1.24 1.98	IPEX
25	ACON	APP8P-700189 (Main) APP8P-700190 (Aux)	PIFA	2.00 0.13	1.36 1.98	IPEX, MHF, U.FL-L(P), Technova
26	ACON	APP8P-700191 (Main) APP8P-700192 (Aux)	PIFA	2.00 0.13	1.36 1.98	IPEX, MHF, U.FL-L(P), Technova
27	Tyco	1556216-1 (Main) 1556215-1 (Aux)	PIFA	0.64 -0.92	1.24 1.98	IPEX
28	Quanta	DQ6GC300100 (Main) DQ6GC300200 (Aux)	PIFA	-1.3 0.7	NA	IPEX
29	Amphenol	C-2381-11-000-26 (Main) C-2382-11-000-26 (Aux)	PIFA	-1.54 -2.93	1.09 1.28	U.FL
30	Foxconn	WDAN-LWSN3001-DH (Main) WDAN-LWSN3002-DH (Aux)	PIFA Coupling Type Inverted F	0.87 0.49	1.40 1.43	IPEX
31	WNC	25.90A1E.001 (Main) 25.90A1F.001 (Aux)	PIFA	1.94 -0.85	-1.85 -1.84	IPEX
32	Quanta	QADC FL8_WL_M (Main) QADC FL8_WL_A (Aux)	PIFA	0.1 -0.3	1.6 1.6	IPEX
33	YAGEO	25.90A4W.001 (Main) 25.90A4V.001 (Aux)	PIFA	0.07 -0.06	-1.25 -1.50	U.FL
34	FOXLINK	25.90A4W.011 (Main) 25.90A4V.011 (Aux)	PIFA	1.98 1.97	-1.39 -1.58	U.FL
35	Quanta	QADC PS3_WL_M (Main) QADC PS3_WL_A (Aux)	PIFA	-0.1 0.0	1.6 1.6	IPEX
36	Quanta	QADCFL3_WL_M (Main) QADCFL3_WL_A (Aux)	PIFA	-0.1 -0.1	NA	IPEX
37	Quanta	QADCGC5_WL_M (Main) QADCGC5_WL_A (Aux)	PIFA	0.4 -1.0	NA	IPEX
38	Quanta	DQ6GC200100 (Main) DQ6GC200200 (Aux)	PIFA	0.1 -0.4	NA	IPEX
39	Quanta	QADCGC6_WL_M (Main) QADCGC6_WL_A (Aux)	PIFA	0.7 1.2	NA	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
40	Quanta	QADCPS1_WL_M (Main) QADCPS1_WL_A (Aux)	PIFA	-0.5 -1.4	NA	IPEX
41	ACON	25.90700.001 (Main) 25.90702.001 (Aux)	PIFA	-1.21 1.27	NA	IPEX
42	ACON	25.90800.001 (Main) 25.90802.001 (Aux)	PIFA	1.37 1.21	NA	U.FL
43	Amphenol	C-1334-11-000-26 (Main) C-1335-11-000-26 (Aux)	PIFA	-0.37 -2.64	NA	U.FL
44	WNC	25.90979.001 (Main) 25.90980.001 (Aux)	PIFA	0.77 0.74	NA	IPEX
45	Mag.Layers	FPA-2423-25GC1-A1 PCA-2111-25GC1-A1	PIFA	1.77 2.17	NA	IPEX
46	WNC	WNC005 (Main) WNC005 (Aux)	PIFA	-2.76 -3.64	1.86 2.54	IPEX
47	WNC	WNC001 (Main) WNC001 (Aux)	PIFA	-1.10 1.76	1.17 1.17	IPEX
48	WNC	WNC001 (Main) WNC001 (Aux)	PIFA	0.31 -0.75	1.98 2.01	IPEX
49	Tyco Holdings (Bermuda) VII Ltd.	TBN003 (Main) TBN003 (Aux)	PIFA	-1.11 -1.11	1.84 2.16	I.P.X
50	WNC	WNC004 (Main) WNC004 (Aux)	PIFA	2.40 1.50	1.53 1.92	IPEX
51	WNC	WNC002 (Tx1) WNC002 (Tx2)	PIFA	1.18 1.75	2.28 2.12	IPEX
52	WNC	WNC003 (Main) WNC003 (Aux)	PIFA	0.52 1.07	1.49 2.13	IPEX
53	Hitachi Cable, Ltd	HFT40 (Tx1) HFT40 (Tx2)	PIFA	0.58 1.12	1.42 2.12	I-PEX-20278
54	Hitachi Cable, Ltd	HFT60 (Tx1) HFT60 (Tx2)	PIFA	-1.65 -0.92	1.48 2.18	I-PEX-20278
55	Hitachi Cable, Ltd	HBY07 (Tx1) HBY07 (Tx2)	PIFA	2.19 -0.33	0.95 0.95	I-PEX-20278
56	Hitachi Cable, Ltd	HBY051 (Tx1) HBY051 (Tx2)	PIFA	2.91 2.82	0.95 0.95	I-PEX-20278
57	Hitachi Cable, Ltd	HBY052 (Tx1) HBY052 (Tx2)	PIFA	0.27 0.02	0.95 0.95	I-PEX-20278
58	Hitachi Cable, Ltd	HBY061 (Tx1) HBY061 (Tx2)	PIFA	1.30 2.42	0.95 0.95	I-PEX-20278
59	Hitachi Cable, Ltd	HBY062 (Tx1) HBY062 (Tx2)	PIFA	-1.04 -1.19	0.95 0.95	I-PEX-20278

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
60	Hitachi Cable, Ltd	HFT65 (Tx1) HFT65 (Tx2)	PIFA	-1.74 1.16	0.95 0.95	I-PEX-20278
61	Hitachi Cable, Ltd	HCT01 (Main) HCT01 (Aux)	PIFA	0.87 1.94	0.89 0.89	IPEX, HRS
62	FOXCONN	WDAN-TQ (Tx1) WDAN-TQ (Tx2)	PIFA	-0.43 -0.7	2.5 2.5	Foxconn SGX0001
63	ethertronics	5002011-1 (Tx1) 5002012-1 (Tx2)	PIFA	0.12 -3.87	NA	Technova
64	ethertronics	5002015-1 (Tx1) 5002016-1 (Tx2)	PIFA	0.76 0.59	NA	Technova
65	ethertronics	5010011-1 (Tx1) 5010012-1 (Tx2)	PIFA	-1.76 -2.61	NA	Technova
66	ethertronics	5010015-1 (Tx1) 5010016-1 (Tx2)	PIFA	-0.84 -2.07	NA	Technova
67	ACON	AMP6P (Tx1) AMP6P (Tx2)	PIFA	0.00 1.89	0.86 0.86	IPEX, Hirose, U.FL-L(P)
68	WNC	81.EJZ15.G52 (Main) 81.EJZ15.G52 (Aux)	PIFA	-1.08 -0.62	2.22 3.03	IPEX
69	WNC	81.EJT15.GJC (Main) 81.EJT15.GJC (Aux)	PIFA	-0.58 -1.26	2.20 3.01	IPEX
70	WNC	81.EJT15.GGW (Tx1) 81.EJT15.GGW (Tx2)	PIFA	0.21 0.77	2.40 3.25	IPEX
71	WNC	81.EJZ15.G53 (Tx1) 81.EJZ15.G53 (Tx2)	PIFA	-0.78 -2.14	2.45 3.24	IPEX
72	QUANTA	AN-070-G(R) AN-070-G(L)	PIFA	-0.7 -1.9	-2.1 -3	IPEX
73	QUANTA	AN-070-G(R) AN-070-G(L)	PIFA	-0.3 -1.9	-2.1 -3	IPEX
74	QUANTA	AN-120-F(R) AN-120-F(L)	PIFA	-0.4 -0.3	-2.1 -3	IPEX
75	QUANTA	AN-120-F(R) AN-120-F(L)	PIFA	-1.8 -4.4	-2.1 -3	IPEX
76	WHAYU	C435-520023-A (Main) C435-520024-A (Aux)	PIFA	1.74 1.56	1.73 2.43	TNOV
77	WNC	81.EJZ (Main) 81.EJZ (Aux)	PIFA	-0.67 -0.35	1.79 1.79	IPEX
78	WNC	81.EJT (Main) 81.EJT (Aux)	PIFA	-0.40 -1.91	1.79 1.79	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
79	JEM	IA-100193 (Main) IA-100194 (Aux)	PIFA	1.27 -1.27	1.56 2.36	IPEX
80	Tyco Holdings (Bermuda) VII Ltd. Taiwan Branch	TBN008 (Tx1) TBN008 (Tx2)	PIFA	-0.10 -0.92	1.85 2.66	Technova
81	Smart Approach Co., Ltd.	03-FR021-026 (Main) 03-FR021-026 (Aux)	PIFA	1.51 1.56	1.26 1.69	IPEX
82	Hitachi Cable	HBY17 (Tx1) HBY17 (Tx2)	PIFA	-0.36 0.97	0.99 0.99	IPEX
83	Hitachi Cable, Ltd	HFT60 (Tx1) HFT60 (Tx2)	PIFA	2.97 0.90	0.32 0.32	IPEX, HRS
84	Smart Approach Co., Ltd.	03-FR021-020 (Main) 03-FR021-020 (Aux)	PIFA	1.66 1.83	1.27 1.28	IPEX
85	WHAYU INDUSTRIAL CO.,LTD	MSA-00005A (Main) MSA-00005A (Aux)	PIFA	-2.12 -2.49	-1.55 -2.16	Tnov
86	Tyco	TBN008 (Tx1) TBN008 (Tx2)	PIFA	-2.60 -0.26	2.34 2.13	IPEX
87	Tyco	TBN007 (Tx1) TBN007 (Tx2)	PIFA	1.98 1.97	-0.97 -0.97	U.FL
88	Tyco Electronics Japan G.K.	TBN009 (Tx1) TBN009 (Tx2)	PIFA	0.22 0.33	0.96 0.95	U.FL
89	Tyco Electronics Japan G.K.	TBN010 (Tx1) TBN010 (Tx2)	PIFA	1.68 1.45	0.96 0.95	U.FL
90	Smart Approach.Co.,Ltd	03-FR021-016 (Tx1) 03-FR021-016 (Tx2)	PIFA	2.32 0.49	1.03 1.11	IPX
91	Foxconn	WDAN-T1WM (Tx1) WDAN-T1WM (Tx2)	PIFA	1.47 1.38	0.909 0.909	IPEX
92	Foxconn	WDAN-T1AM1001-DH (Tx1) WDAN-T1AM1002-DH (Tx2)	PIFA	2.58 1.39	0.909 0.909	Foxconn SGX0008-01

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
93	WNC	WNC003 (Main) WNC003 (Aux)	PIFA	-0.10 2.30	1.22 1.48	RF
94	TE Connectivity	1556465-1 TBN003 (Tx1) 1556466-1 TBN003 (Tx2)	PIFA	-0.23 -0.49	1.52 1.64	MI-113
95	ACON	APP8P-700341 (Main) APP8P-700342 (Aux)	PIFA	1.10 1.99	1.03 1.21	IPEX, MHF, U.FL-L(P)
96	Smart Approach	SE-ECLA1-001 (Main) SE-ECLA1-002 (Aux)	PIFA	2.53 2.92	1.20 1.39	IPX
97	WNC	81.EK515.G13 (Main) 81.EK515.G14 (Aux)	PIFA	0.30 0.39	1.96 2.67	IPEX
98	Favortron CO.,LTD (FVC)	N01001205001 (Tx1) N01001206001 (Tx2)	PIFA	2.81 1.97	-2.52 -2.13	IPEX
99	Favortron CO.,LTD (FVC)	W270HUQ-WiMAX-1 W270HUQ-WiMAX-2	PIFA	2.85 1.87	NA	I-PEX
100	Favortron CO.,LTD (FVC)	N01001193001 (Tx1) N01001193001 (Tx2)	PIFA	2.97 0.9	-2.13 -2.13	IPEX
101	Favortron CO.,LTD (FVC)	N01001199001 (Tx1) N01001199001 (Tx2)	PIFA	2.73 2.87	-2.61 -2.65	IPEX
102	Well Green	SKW24WMPB01+A (Tx1) SKW24WMPB01+A (Tx2)	PIFA	-1.63 -0.99	1.62 1.79	IPEX
103	Favortron CO.,LTD (FVC)	N01001218001 (Tx1) N01001218001 (Tx2)	PIFA	2.53 2.28	-1.93 -1.93	IPEX
104	Well Green	SKM11WMPB03+A (Tx1) SKM11WMPB02+D (Tx2)	PIFA	-1.84 -2.93	1.17 0.89	IPEX
105	Favortron CO.,LTD (FVC)	E5120-WiMAX-1 E5120-WiMAX-2	PIFA	2.7 2.19	NA	IPEX
106	Favortron CO.,LTD (FVC)	B5100-WiMAX-1 B5100-WiMAX-2	PIFA	1.58 1.75	NA	IPEX
107	Well Green	SKW31WMPB01+A (Tx1) SKW31WMPB01+A (Tx2)	PIFA	-1.07 -0.64	-1.39 -1.53	IPEX
108	WhaYu	C680-520279-A (Tx1) C680-520279-A (Tx2)	PIFA	1.09 -0.55	0.72 1.89	FAF
109	WhaYu	C680-520278-A (Tx1) C680-520277-A (Tx2)	PIFA	1.92 -1.03	0.64 1.72	FAF
110	Wellshine	DQ67KJQUT35 (Tx1) DQ67KJQUT36 (Tx2)	PIFA	2.03 0.05	1.00 1.80	IPEX
111	ZTX	ZTX-A162-Q18000-00 (Tx1) ZTX-A162-Q18000-00 (Tx2)	PIFA	2.014 1.742	NA	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
112	Well Green	SK81WMPB01+A (Tx1) SK81WMPB02+A (Tx2)	PIFA	1.79 0.66	-1.88 -2.95	IPEX
113	Wellshine	DQ67KJQUT33 (Tx1) DQ67KJQUT33 (Tx2)	PIFA	1.17 -0.06	0.77 1.90	IPEX
114	Tyco Holding (Bermuda) VII Ltd.	TBN001 (Main) TBN001 (Aux)	PIFA	3.45 2.41	1.45 2.13	I.P.X
115	tyco	TBN005 TBN006	PIFA	2.09 3.40	NA	IPEX
116	Tyco Electronic AMPKK	TBN004 (Main) TBN004 (Aux)	PIFA	0.28 -0.83	0.98 0.98	U.FL
117	Hitachi	HFS23	PIFA	-0.8	0.89	IPEX or HRS
118	Hitachi	HFS40	PIFA	0.64	0.89	IPEX or HRS
119	Quanta	AS-070-F (Tx1) AS-070-F (Tx2)	PIFA	-0.5 -1.9	-1.6 -3	IPEX
120	ACON	DQ60APM6P02(APM6P-700091) (Main) DQ60APM6P02(APM6P-700091) (Aux)	PIFA	-0.7 -0.29	1.81 2.52	IPX, Hirose, Technova, MHF
121	ACON	DQ60APM6P03(APM6P-700092) (Main) DQ60APM6P03(APM6P-700092) (Aux)	PIFA	-0.6 -1.02	2.02 2.73	IPX, Hirose, Technova, MHF
122	Quanta Computer Inc	37LX6AATP00 (Tx1) 37LX6AATP00 (Tx2)	PIFA	1.8 -0.3	-1.40 -2.02	I-PEX
123	Quanta Computer Inc	37LX7AATP00 (Tx1) 37LX7AATP00 (Tx2)	PIFA	0.3 1.7	-1.44 -1.79	I-PEX
124	Quanta Computer Inc	3ASP8AATP20 (Tx1) 3ASP8AATP20 (Tx2)	PIFA	1.0 0.2	-1.36 -1.95	SPD
125	Quanta Computer Inc	35AX6AATP10 (Tx1) 35AX6AATP10 (Tx2)	PIFA	0.7 -1.4	-1.28 -1.96	SGX
126	Foxconn	WDAN-HMCH1401-DH/79010T000-600-G (Tx1) WDAN-HMCH1402-DH/79010SY00-600-G (Tx2)	PIFA	-0.99 -0.09	1.05 1.82	IPEX

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
127	Yageo	CAN43130WIFO04921/79010SQ00-011-G (Tx1) CAN43130WIFO04922/79010SR00-011-G (Tx2)	PIFA	0.23 1.53	1.08 1.88	Hirose, U.FL-LP, IPEX, MHF
128	WHAYU	C107-520757-A/79010T100-12S-G (Tx1) C107-520756-A/79010SS00-12S-G (Tx2)	PIFA	-0.18 2.58	1.30 1.30	IPEX
129	Foxconn	WDAN-HMCH1501-DH/79010SW00-600-G (Tx1) WDAN-HMCH1502-DH/79010SV00-600-G (Tx2)	PIFA	-0.35 0.38	1.22 2.03	IPEX
130	ACON	AMP8P-700186 (Main) AMP8P-700187 (Aux)	PIFA	1.96 1.91	1.58 2.29	IPEX, U.FL, MHF
131	Amphenol	FL5202-11-001-C (Tx1) FL5202-11-001-C (Tx2)	PIFA	-1.41 -0.77	1.38 1.88	U.FL
132	Amphenol	IV5233-15-003-C (Tx1) IV5233-15-002-C (Tx2)	PIFA	0.54 -0.53	1.56 2.37	GBE
133	Amphenol	IV5218-11-002-C (Tx1) IV5218-11-001-C (Tx2)	PIFA	0.55 0.31	1.36 2.23	U.FL
134	Amphenol	FX5170-15-004-C (Tx1) FX5170-15-001-C (Tx2)	PIFA	0.76 -2.11	0.80 1.62	IPEX, Technova
135	HON HAI	WDAN-HMEDW005-DH (Tx1) WDAN-HMEDW005-DH (Rx2)	PIFA	-1.85 1.33	0.67 1.34	IPEX
136	WNC	6036B0086802 (Tx1) 6036B0087102 (Tx2)	PIFA	-1.30 -0.49	1.09 1.36	U.FL
137	WNC	6036B0088203 (Main) 6036B0088303 (Aux)	PIFA	0.50 0.12	1.83 2.25	U.FL
138	WNC	6036B0088203 (Main) 6036B0088303 (Aux)	PIFA	1.21 -0.07	1.83 2.25	U.FL
139	WNC	6036B0087303 (Main) 6036B0087203 (Aux)	PIFA	2.34 1.28	1.76 2.45	U.FL
140	WNC	6036B0091201 (Main) 6036B0091401 (Aux)	PIFA	-1.11 -0.95	1.85 2.71	U.FL
141	YAGEO	CAN43130LIIN03863 (Tx1) CAN43130LIIN03864 (Tx2)	PIFA	-2.69 -1.09	1.04 1.78	Technova
142	YAGEO	6036B0091202 (Tx1) 6036B0091402 (Tx2)	PIFA	0.80 0.25	1.30 1.98	Technova
143	YAGEO	CAN43130LIIN03841 (Tx1) CAN43130LIIN03842 (Tx2)	PIFA	1.46 0.95	1.22 2.03	Technova
144	YAGEO	6036B0088401 (Tx1) 6036B0088501 (Tx2)	PIFA	0.61 0.71	1.90 2.40	Technova
145	ACON	APM8P-700018 (Tx1) APM8P-700019 (Tx2)	PIFA	2.66 2.27	1.72 2.53	IPEX, MHF, U.FL-LP

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
146	WNC	81.EK515.G15 (Main) 81.EK515.G16 (Aux)	PIFA	2.36 1.13	1.94 2.76	IPEX
147	ACON	APM8P-700016 (Main) APM8P-700017 (Aux)	PIFA	2.79 0.74	1.48 2.09	IPEX, MHF, U.FL-LP
148	NISSEI ELECTRIC CO., LTD	3209970 (Rx) 3210002 (Tx)	PIFA	1.88 1.26	NA	U.FL
149	ACON	25.90598.001 (Rx) 25.90597.001 (Tx)	PIFA	1.17 1.04	NA	I-PEX
150	WNC	25.90587.001 (Rx) 25.90586.001 (Tx)	PIFA	1.94 0.59	NA	I-PEX
151	ACON	25.90653.001 (Rx) 25.90654.001 (Tx)	PIFA	-0.42 -0.13	NA	I-PEX
152	WNC	25.90649.001 (Rx) 25.90650.001 (Tx)	PIFA	-0.52 0.31	NA	I-PEX
153	Foxconn	024-01F0-2242 (Rx) 024-01F0-2243 (Tx)	PIFA	1.16 -0.88	NA	SGX0003-02
154	NISSEI ELECTRIC CO., LTD	3176658 (Rx) 3176674 (Tx)	PIFA	-0.83 -0.61	NA	U.FL
155	Foxconn	WDAN-L1WK1001-DF (Rx) WDAN-L1WK1002-DF (Tx)	PIFA	1.71 1.43	NA	FOXCONN
156	Hitachi	HMT14-MAIN (Rx) HMT14-AUX (Tx)	PIFA	1.82 1.54	NA	U.FL
157	ACON	25.90700.001 (Rx) 25.90702.001 (Tx)	PIFA	-1.21 1.27	NA	I-PEX
158	ACON	25.90800.001 (Rx) 25.90802.001 (Tx)	PIFA	1.37 1.21	NA	U.FL
159	ACON	APM6P-700033 (Rx) APM6P-700034 (Tx)	PIFA	-0.96 -0.86	NA	I-PEX
160	Amphenol Taiwan Corporation	14G152168231LV (Rx) 14G152168131LV (Tx)	PIFA	-1.85 -1.60	NA	I-PEX
161	ACON	APM6P-700027 (Rx) APM6P-700029 (Tx)	PIFA	-1.32 -0.23	NA	I-PEX
162	TYCO	2023940-1 (Rx) 2023944-1 (Tx)	PIFA	-2.39 1.52	NA	U.FL
163	ACON	APM6P-700028 (Rx) APM6P-700030 (Tx)	PIFA	-1.16 -0.74	NA	I-PEX
164	Tyco Holding (Bermuda) VII Ltd.	2023946-1 (Rx) 2023950-1 (Tx)	PIFA	-0.58 -0.11	NA	U.FL

No.	Brand	Model	Antenna Type	Peak gain with cable loss	Cable Loss	Connector Type
165	Amphenol SAA	LX-0980-11-000-R (Rx) LX-0983-11-000-R (Tx)	PIFA	1.61 1.57	NA	20351-111 R-37
166	NISSEI ELECTRIC CO., LTD	3172525 (Rx) 3172566 (Tx)	PIFA	1.35 1.99	NA	U.FL
167	Amphenol	LX0970-11-000-R (Rx) LX0968-11-000-R (Tx)	PIFA	1.47 1.68	NA	U.FL
168	FOXCONN	WDAN-L1ML3001-DF (Rx) WDAN-L1ML3002-DF (Tx)	PIFA	-0.40 1.10	NA	SGX0003-02
169	NISSEI ELECTRIC CO., LTD	3172467 (Rx) 3172509 (Tx)	PIFA	0.54 1.80	NA	U.FL
170	ACON	25.90675.001 (Rx) 25.90676.001 (Tx)	PIFA	-0.39 0.64	NA	U.FL
171	WNC	25.90669.001 (Rx) 25.90670.001 (Tx)	PIFA	-1.53 1.32	NA	I-PEX
172	ACON	AWP6P (Main) AWP6P (Aux)	PIFA	-0.19 -0.99	0.85 0.85	I-PEX, Hirose, U.FL-L(P)

From the above antennas, the worst case was found in No. 1 & 2. Therefore only the test data of the modes were recorded in this report individually.

6.CALCULATION RESULT OF MAXIMUM CONDUCTED POWER

For WLAN:

802.11b:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	72.4	3.5	20	0.032	1.00

802.11g:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	177.8	3.5	20	0.079	1.00

802.11n(20MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2412-2462	190.5	3.5	20	0.085	1.00

802.11n(40MHz):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2422-2452	141.3	3.5	20	0.063	1.00

For Bluetooth:

GFSK:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2402 ~ 2480	10.7	3.5	20	0.005	1.00

8DPSK:

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2402 ~ 2480	13.8	3.5	20	0.006	1.00

GFSK(LE MODE):

FREQUENCY BAND (MHz)	MAX POWER (mW)	ANTENNA GAIN (dBi)	DISTANCE (cm)	POWER DENSITY (mW/ cm^2)	LIMIT (mW/cm^2)
2402 ~ 2480	4.1	3.5	20	0.002	1.00

CONCLUSION:

Both of the WLAN and Bluetooth can transmit simultaneously, the formula of calculated the MPE is:

$CPD_1 / LPD_1 + CPD_2 / LPD_2$ + ……etc. < 1

CPD = Calculation power density

LPD = Limit of power density

Therefore, the worst-case situation is 0.085 / 1 + 0.006 / 1 = 0.091, which is less than “1”. This confirmed that the device comply with FCC 1.1310 MPE limit.

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