



Spot Check Evaluation

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager



SPORTON INTERNATIONAL INC.

No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan District, Tao Yuan City, Taiwan, R.O.C.



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REVISION HISTORY

VERSION	DESCRIPTION	ISSUED DATE
Rev. 01	Initial issue of report	May. 30, 2018



1. Introduction Section

The original model (FCC ID: P4Q-N564B) and the variant model (FCC ID: P4Q-N564A) has identical PCB layout, antenna, SW implementation for Bluetooth/Wi-Fi/GPS. Based on their similarity, the FCC Part 15C & 15E (equipment class: DTS, DSS, NII) test data issued for original model also apply for the variant model.

The applicant takes full responsibility that the test data as referenced in section 4 below represent compliance for this FCC ID (FCC ID: P4Q-N564A).



2. Difference Section

The original model (FCC ID: P4Q-N564B) and the variant model (FCC ID: P4Q-N564A) has identical PCB layout, antenna, SW implementation for Bluetooth/Wi-Fi/GPS. The details of similarity and difference can be found in the Operating Description.

The product specification is outlined in the following table:

FCC ID		P4Q-N564B	P4Q-N564A
Wireless Tech	Mode	Frequency (MHz)	
UMTS	AMR/RCM12.2Kbps HSDPA/HSUPA/DC-HSDPA	B2/B5	
LTE	QPSK/16QAM VoLTE	B2/ B4/ B5/ B12	
Wi-Fi	11b/11g/11n(HT20)	2412-2462 MHz/	
	11a/11n(HT20)/11n(HT40)	5180-5240 MHz 5260-5320 MHz 5500-5700 MHz 5745-5825 MHz	
Bluetooth	BR/EDR/LE	2402-2480 MHz	
NFC	NFC	13.56 MHz	



3. Spot Check Verification Data Section

Summary of the spot check:

Test Item	Mode	P4Q-N564B Worst Result	P4Q-N564A Worst Result	Difference (dB)
Average Conducted Power (dBm)	802.11b	15.45	15.37	-0.08
	802.11g	15.74	15.54	-0.2
	11n HT20	16.17	15.99	-0.18
	20MHz BW 5150-5250MHz	13.96	13.82	-0.14
	20MHz BW 5250-5350MHz	15.12	15.04	-0.08
	20MHz BW 5470-5725MHz	14.18	13.98	-0.2
	20MHz BW 5725-5850MHz	11.49	11.12	-0.37
	40MHz BW 5150-5250MHz	13.98	13.83	-0.15
	40MHz BW 5250-5350MHz	14.52	14.80	0.28
	40MHz BW 5470-5725MHz	14.28	14.08	0.2
	40MHz BW 5725-5850MHz	11.53	11.19	-0.34
	BT (1Mbps)	6.60	6.86	0.26
	BT (2Mbps)	4.88	4.41	-0.47
	BT (3Mbps)	4.49	4.42	-0.07
	BT-LE	-2.82	-2.92	0.1
Test date	2018.02.14~2018.03.16	2018.04.18~2018.04.19		
Peak Radiated Spurious Emission (Band Edge) (dBuV/m)	802.11b	54.45	54.69	0.24
	802.11g	71.98	71.25	-0.73
	11n HT20	71.9	71.67	-0.23
	20MHz BW 5150-5250MHz	59.94	59.8	-0.14
	20MHz BW 5250-5350MHz	60.64	60.16	-0.48
	20MHz BW 5470-5725MHz	70.86	70.51	-0.35
	20MHz BW 5725-5850MHz	52.84	52.39	-0.45
	40MHz BW 5150-5250MHz	70.26	69.71	-0.55
	40MHz BW 5250-5350MHz	68.21	67.89	-0.32
	40MHz BW 5470-5725MHz	67.65	67.13	-0.52
	40MHz BW 5725-5850MHz	52.42	52.53	0.11
	BT (1Mbps)	48.68	49.16	0.48
	BT-LE	54.84	54.15	-0.69
	Test date	2018.03.22~2018.04.02	2018.05.02~2018.05.06	
	Average Radiated Spurious Emission (Band Edge) (dBuV/m)	802.11b	42.8	43.04
802.11g		45.75	45.17	-0.58
11n HT20		50.41	50.18	-0.23
20MHz BW 5150-5250MHz		46.53	46.24	-0.19
20MHz BW 5250-5350MHz		46.15	45.94	-0.21
20MHz BW 5470-5725MHz		49.64	49.63	-0.01
20MHz BW 5725-5850MHz		/	/	/
40MHz BW 5150-5250MHz		50.94	51.48	0.54
40MHz BW 5250-5350MHz		51.39	51.08	-0.31
40MHz BW 5470-5725MHz		51.75	51.99	0.24
40MHz BW 5725-5850MHz		/	/	/
BT (1Mbps)		23.95	24.43	0.48
BT-LE		43.12	43.2	0.08
Test date		2018.03.22~2018.04.02	2018.05.02~2018.05.06	



Test Item	Mode	P4Q-N564B Worst Result	P4Q-N564A Worst Result	Difference (dB)
Peak Radiated Spurious Emission (Harmonic) (dBuV/m)	802.11b	44.88	45.18	0.3
	802.11g	45.7	43.75	-1.95
	11n HT20	40.45	39.23	-1.22
	20MHz BW 5150-5250MHz	52.37	52.52	0.15
	20MHz BW 5250-5350MHz	57.36	56.64	-0.72
	20MHz BW 5470-5725MHz	64.23	64.57	0.34
	20MHz BW 5725-5850MHz	68.78	67.96	-0.82
	40MHz BW 5150-5250MHz	50.87	51.16	0.29
	40MHz BW 5250-5350MHz	57.09	56.24	-0.85
	40MHz BW 5470-5725MHz	61.31	60.47	-0.84
	40MHz BW 5725-5850MHz	66.72	65.88	-0.84
	BT (1Mbps)	39.99	39.81	-0.18
	BT-LE	45.09	44.68	-0.41
Test date		2018.03.22~2018.04.02	2018.05.02~2018.05.06	

Conclusion:

WLAN Radiated spurious emission test against the variant model for non-cellular part based on the worst-case condition from the original model was performed in this filing to demonstrate the test data from original model remains representative for the variant model.

Based on the spot check test result (power levels measured are within 0.5dB, and the worst case of RSE spot check verification based on the worst condition from the original model is within 3dB, and are compliance with the limits), the test data from the original model is representative for the variant model.

The unwanted, harmonics, radiated spurious emission is reported peak measurement only due to spurious lower than 20dB than the limit.



4. Reference detail Section

Equipment Class	Reference FCC ID	Type Grant/Permissive Change	Reference Application	Folder Test/RF Exposure	Report Title
DTS	P4Q-N564B	Original Grant	FR722135-07B	Part 15C	All sections applicable
			FR722135-07C	Part 15C	All sections applicable
DSS	P4Q-N564B	Original Grant	FR722135-07A	Part 15C	All sections applicable
NII	P4Q-N564B	Original Grant	FR722135-07E FR722135-07F FZ722135-07	Part 15E	All sections applicable