Appendix B. Radiated Spurious Emission

Test Engineer :	Bill Chang, Ken Wu, and JC Liang	Temperature :	20~23°C
rest Engineer.		Relative Humidity :	54~56%

Band 4 - 5725~5850MHz

WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5687.72	49.44	-24.56	74	41.34	32.27	9.39	33.56	148	1	Р	Н
		5724.44	49.49	-28.81	78.3	41.31	32.31	9.44	33.57	148	1	Р	Н
		5698.92	40.57	-13.43	54	32.47	32.27	9.39	33.56	148	1	Α	Н
	*	5745	100.22	-	-	92.01	32.34	9.44	33.57	148	1	Р	Н
	*	5745	93.78	-	-	85.57	32.34	9.44	33.57	148	1	Α	Н
													Н
902.446													Н
802.11a CH 149													Н
5745MHz		5685	46.64	-27.36	74	38.54	32.27	9.39	33.56	100	30	Р	V
074011112		5719.4	48.23	-30.07	78.3	40.1	32.31	9.39	33.57	100	30	Р	V
		5698.68	38.83	-15.17	54	30.73	32.27	9.39	33.56	100	30	Α	V
	*	5745	92.58	-	-	84.37	32.34	9.44	33.57	100	30	Р	V
	*	5745	85.46	-	-	77.25	32.34	9.44	33.57	100	30	Α	V
													V
													V
													V

TEL: 886-3-327-3456 FAX: 886-3-328-4978

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5694.52	47.16	-26.84	74	39.06	32.27	9.39	33.56	303	3	Р	Н
		5719.88	47.38	-30.92	78.3	39.25	32.31	9.39	33.57	303	3	Р	Н
		5713.32	38.86	-15.14	54	30.75	32.29	9.39	33.57	303	3	Α	Н
	*	5785	99.9	-	-	91.61	32.39	9.49	33.59	303	3	Р	Н
	*	5785	91.61	-	-	83.32	32.39	9.49	33.59	303	3	Α	Н
		5852.88	47.41	-30.89	78.3	39	32.48	9.54	33.61	303	3	Р	Н
		5863.44	47.33	-26.67	74	38.9	32.51	9.54	33.62	303	3	Р	Н
802.11a		5861.84	39.65	-14.35	54	31.22	32.51	9.54	33.62	303	3	Α	Н
CH 157 5785MHz		5693.48	47.09	-26.91	74	38.99	32.27	9.39	33.56	400	29	Р	٧
3763WIFIZ		5720.36	47.03	-31.27	78.3	38.9	32.31	9.39	33.57	400	29	Р	٧
		5685	38.49	-15.51	54	30.39	32.27	9.39	33.56	400	29	Α	٧
	*	5785	92.94	-	-	84.65	32.39	9.49	33.59	400	29	Р	٧
	*	5785	84.6	-	-	76.31	32.39	9.49	33.59	400	29	Α	٧
		5858.88	47.73	-30.57	78.3	39.3	32.51	9.54	33.62	400	29	Р	٧
		5870.64	47.23	-26.77	74	38.78	32.53	9.54	33.62	400	29	Р	٧
		5861.28	39.07	-14.93	54	30.64	32.51	9.54	33.62	400	29	Α	V

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V
	*	5825	100.21	-	-	91.83	32.46	9.52	33.6	290	3	Р	Н
	*	5825	91.85	-	-	83.47	32.46	9.52	33.6	290	3	Α	Н
		5850.08	50.06	-28.24	78.3	41.65	32.48	9.54	33.61	290	3	Р	Н
		5860.08	47.96	-26.04	74	39.53	32.51	9.54	33.62	290	3	Р	Н
		5861.28	40.49	-13.51	54	32.06	32.51	9.54	33.62	290	3	Α	Н
													Н
													Н
802.11a													Н
CH 165	*	5825	93.03	-	-	84.65	32.46	9.52	33.6	379	34	Р	V
5825MHz	*	5825	84.11	-	-	75.73	32.46	9.52	33.6	379	34	Α	V
		5852	47.41	-30.89	78.3	39	32.48	9.54	33.61	379	34	Р	V
		5861.28	49.68	-24.32	74	41.25	32.51	9.54	33.62	379	34	Р	V
		5860.4	39.38	-14.62	54	30.95	32.51	9.54	33.62	379	34	Α	V
													V
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WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V
		11490	46.17	-27.83	74	58.05	39.91	13.95	65.74	100	0	Р	Н
		17235	43.66	-30.34	74	49.79	41	16.95	64.08	100	0	Р	Н
802.11a													Н
CH 149													Н
5745MHz		11490	44.78	-29.22	74	56.66	39.91	13.95	65.74	100	0	Р	V
07 40MH12		17235	43.44	-30.56	74	49.57	41	16.95	64.08	100	0	Р	V
													V
		44.570	47.05	20.45	7.4	F0.75	20.70	4.4	05.00	400	0	Р	V
		11570	47.85	-26.15	74	59.75	39.76	14	65.66	100			Н
		17355	44.06	-29.94	74	49.9	41.35	17.03	64.22	100	0	Р	Н
802.11a													H
CH 157		11570	44.44	-29.56	74	56.34	39.76	14	65.66	100	0	Р	V
5785MHz		17355	43.73	-30.27	74	49.57	41.35	17.03	64.22	100	0	P	V
													V
													V
		11650	47.83	-26.17	74	59.78	39.62	14.05	65.62	100	0	Р	Н
		17475	44.2	-29.8	74	49.76	41.7	17.1	64.36	100	0	Р	Н
802.11a													Н
CH 165													Н
5825MHz		11650	47.76	-26.24	74	59.71	39.62	14.05	65.62	100	0	Р	V
3023W112		17475	42.84	-31.16	74	48.4	41.7	17.1	64.36	100	0	Р	V
													V
													V

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Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	
		44.58	22.92	-17.08	40	36.56	17.5	0.67	31.81			Р	Н
		104.25	28.95	-14.55	43.5	42.8	16.65	1.28	31.78			Р	Н
		214.41	34.79	-8.71	43.5	48.58	16.2	1.79	31.78	164	83	Р	Н
		324.5	27.99	-18.01	46	37.25	20.4	2.11	31.77			Р	Н
		685.7	28	-18	46	30.34	26.56	3.14	32.04			Р	Н
		929.3	33.22	-12.78	46	30.72	30.02	3.68	31.2			Р	Н
													Н
													Н
													Н
													Н
													Н
5GHz													Н
802.11a		43.23	35.93	-4.07	40	49.01	18.06	0.67	31.81	193	100	Р	V
LF		82.65	22.88	-17.12	40	39.69	13.94	1.04	31.79			Р	V
		199.83	32.15	-11.35	43.5	46.29	16	1.64	31.78			Р	V
		314.7	26.09	-19.91	46	35.62	20.13	2.11	31.77			Р	V
		765.5	30.51	-15.49	46	31.24	27.88	3.35	31.96			Р	V
		962.2	33.19	-20.81	54	29.87	30.58	3.68	30.94			Р	V
													V
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SPORTON INTERNATIONAL INC.

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WIFI 802.11a (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5698.44	46.98	-27.02	74	38.88	32.27	9.39	33.56	103	66	Р	Н
		5718.84	46.89	-31.41	78.3	38.76	32.31	9.39	33.57	103	66	Р	Н
		5691.24	38.65	-15.35	54	30.55	32.27	9.39	33.56	103	66	Α	Н
	*	5745	90.19	-	-	81.98	32.34	9.44	33.57	103	66	Р	Н
	*	5745	83.21	1	-	75	32.34	9.44	33.57	103	66	Α	Н
													Н
000.44													Н
802.11a													Н
CH 149 5745MHz		5696.36	46.61	-27.39	74	38.51	32.27	9.39	33.56	272	0	Р	٧
3743WITIZ		5724.36	48.23	-30.07	78.3	40.05	32.31	9.44	33.57	272	0	Р	٧
		5711.64	38.82	-15.18	54	30.71	32.29	9.39	33.57	272	0	Α	٧
	*	5745	95.35	-	-	87.14	32.34	9.44	33.57	272	0	Р	٧
	*	5745	87.88	-	-	79.67	32.34	9.44	33.57	272	0	Α	٧
													٧
													٧
													V

TEL: 886-3-327-3456 FAX: 886-3-328-4978

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5703.96	46.42	-27.58	74	38.3	32.29	9.39	33.56	393	57	Р	Н
		5721.48	46.54	-31.76	78.3	38.36	32.31	9.44	33.57	393	57	Р	Н
		5687.88	38.68	-15.32	54	30.58	32.27	9.39	33.56	393	57	Α	Н
	*	5785	88.56	-	-	80.27	32.39	9.49	33.59	393	57	Р	Н
	*	5785	79.96	-	-	71.67	32.39	9.49	33.59	393	57	Α	Н
		5857.68	46.71	-31.59	78.3	38.27	32.51	9.54	33.61	393	57	Р	Н
		5888	48.14	-25.86	74	39.64	32.56	9.57	33.63	393	57	Р	Н
802.11a		5863.6	39.31	-14.69	54	30.88	32.51	9.54	33.62	393	57	Α	Н
CH 157 5785MHz		5704.44	47.54	-26.46	74	39.42	32.29	9.39	33.56	295	5	Р	V
37 63 WITZ		5721.24	46.75	-31.55	78.3	38.62	32.31	9.39	33.57	295	5	Р	V
		5692.36	38.76	-15.24	54	30.66	32.27	9.39	33.56	295	5	Α	V
	*	5785	95.25	-	-	86.96	32.39	9.49	33.59	295	5	Р	V
	*	5785	86.63	-	-	78.34	32.39	9.49	33.59	295	5	Α	V
		5850.16	47.27	-31.03	78.3	38.86	32.48	9.54	33.61	295	5	Р	V
		5876.08	47.92	-26.08	74	39.47	32.53	9.54	33.62	295	5	Р	V
		5867.84	39.47	-14.53	54	31.04	32.51	9.54	33.62	295	5	Α	V

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant. 2		(MHz)	(dBµV/m)	Limit (dB)	Line (dBµV/m)	Level (dBµV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	
	*	5825	86.87	-	-	78.49	32.46	9.52	33.6	391	65	Р	Н
	*	5825	78.92	-	-	70.54	32.46	9.52	33.6	391	65	Α	Н
		5856.8	47.06	-31.24	78.3	38.62	32.51	9.54	33.61	391	65	Р	Н
		5862	47.04	-26.96	74	38.61	32.51	9.54	33.62	391	65	Р	Н
		5868.16	39.22	-14.78	54	30.79	32.51	9.54	33.62	391	65	Α	Н
													Н
													Н
802.11a													Н
CH 165	*	5825	93.38	-	-	85	32.46	9.52	33.6	321	358	Р	V
5825MHz		5858.32	48.22	-30.08	78.3	39.79	32.51	9.54	33.62	321	358	Р	V
		5864.8	48.84	-25.16	74	40.41	32.51	9.54	33.62	321	358	Р	V
		5871.6	39.41	-14.59	54	30.96	32.53	9.54	33.62	321	358	Α	V
													V
													V
													V
													V
													V
Remark		o other spurious		eak and	l Average lim	it line.							

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WIFI 802.11a (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V
		11490	50.27	-23.73	74	62.15	39.91	13.95	65.74	100	0	Р	Н
		17235	43.84	-30.16	74	49.97	41	16.95	64.08	100	0	Р	Н
802.11a													Н
CH 149													Н
5745MHz		11490	44.17	-29.83	74	56.05	39.91	13.95	65.74	100	0	Р	V
37 43WH 12		17235	43.47	-30.53	74	49.6	41	16.95	64.08	100	0	Р	V
													V
		44570	40.04	0.4.70		04.44	22.72		05.00	400			V
		11570	49.21	-24.79	74	61.11	39.76	14	65.66	100	0	Р	Н
		17355	43.54	-30.46	74	49.38	41.35	17.03	64.22	100	0	Р	Н
802.11a													Н
CH 157		11570	43.46	-30.54	74	55.36	39.76	14	65.66	100	0	Р	H V
5785MHz		17355	43.91	-30.09	74	49.75	41.35	17.03	64.22	100	0	' Р	V
		17000	40.01	30.03	7-7	40.70	41.00	17.00	04.22	100			V
													٧
		11650	46.95	-27.05	74	58.9	39.62	14.05	65.62	100	0	Р	Н
		17475	42.47	-31.53	74	48.03	41.7	17.1	64.36	100	0	Р	Н
802.11a													Н
CH 165													Н
5825MHz		11650	41.32	-32.68	74	53.27	39.62	14.05	65.62	100	0	Р	V
		17475	42.1	-31.9	74	47.66	41.7	17.1	64.36	100	0	Р	V
													V
													V

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Emission below 1GHz

5GHz WIFI 802.11a (LF @ 3m)

(dBµV/m) 23.26 27.89 34.56 27.11 28.63 33.43	Limit (dB) -16.74 -15.61 -8.94 -18.89 -17.37 -20.57	Line (dBμV/m) 40 43.5 43.5 46 46 54	Level (dBμV) 36.34 42.07 48.7 36.53 30.7 29.85	Factor (dB/m) 18.06 16.32 16 20.24 26.82 30.52	Loss (dB) 0.67 1.28 1.64 2.11 3.14 3.78	Factor (dB) 31.81 31.78 31.77 32.03 30.72	Pos (cm)		P P P	(H/V) H H H
23.26 27.89 34.56 27.11 28.63	-16.74 -15.61 -8.94 -18.89 -17.37	40 43.5 43.5 46 46	36.34 42.07 48.7 36.53 30.7	18.06 16.32 16 20.24 26.82	0.67 1.28 1.64 2.11 3.14	31.81 31.78 31.78 31.77 32.03			P P P	H H H
27.89 34.56 27.11 28.63	-15.61 -8.94 -18.89 -17.37	43.5 43.5 46 46	42.07 48.7 36.53 30.7	16.32 16 20.24 26.82	1.28 1.64 2.11 3.14	31.78 31.78 31.77 32.03	160	51	P P P	H H
34.56 27.11 28.63	-8.94 -18.89 -17.37	43.5 46 46	48.7 36.53 30.7	16 20.24 26.82	1.64 2.11 3.14	31.78 31.77 32.03	160	51	P P	Н
27.11 28.63	-18.89 -17.37	46 46	36.53 30.7	20.24 26.82	2.11 3.14	31.77 32.03	160	51	P P	Н
28.63	-17.37	46	30.7	26.82	3.14	32.03			Р	
										Н
33.43	-20.57	54	29.85	30.52	3.78	30.72			0	,
									Р	Н
										Н
										Н
										Н
										Н
										Н
										Н
35.93	-4.07	40	49.01	18.06	0.67	31.81	188	256	Р	V
31.06	-12.44	43.5	45.2	16	1.64	31.78			Р	V
27.27	-18.73	46	37.4	19.7	1.94	31.77			Р	V
25.94	-20.06	46	35.44	20.16	2.11	31.77			Р	V
28.22	-17.78	46	31.16	26.14	2.96	32.04			Р	V
33.65	-20.35	54	30.14	30.54	3.78	30.81			Р	V
										V
										V
										V
										V
										V
										V
	31.06 27.27 25.94 28.22	31.06 -12.44 27.27 -18.73 25.94 -20.06 28.22 -17.78	31.06 -12.44 43.5 27.27 -18.73 46 25.94 -20.06 46 28.22 -17.78 46	31.06 -12.44 43.5 45.2 27.27 -18.73 46 37.4 25.94 -20.06 46 35.44 28.22 -17.78 46 31.16	31.06 -12.44 43.5 45.2 16 27.27 -18.73 46 37.4 19.7 25.94 -20.06 46 35.44 20.16 28.22 -17.78 46 31.16 26.14	31.06 -12.44 43.5 45.2 16 1.64 27.27 -18.73 46 37.4 19.7 1.94 25.94 -20.06 46 35.44 20.16 2.11 28.22 -17.78 46 31.16 26.14 2.96	31.06 -12.44 43.5 45.2 16 1.64 31.78 27.27 -18.73 46 37.4 19.7 1.94 31.77 25.94 -20.06 46 35.44 20.16 2.11 31.77 28.22 -17.78 46 31.16 26.14 2.96 32.04	31.06 -12.44 43.5 45.2 16 1.64 31.78 27.27 -18.73 46 37.4 19.7 1.94 31.77 25.94 -20.06 46 35.44 20.16 2.11 31.77 28.22 -17.78 46 31.16 26.14 2.96 32.04	31.06 -12.44 43.5 45.2 16 1.64 31.78 27.27 -18.73 46 37.4 19.7 1.94 31.77 25.94 -20.06 46 35.44 20.16 2.11 31.77 28.22 -17.78 46 31.16 26.14 2.96 32.04	31.06 -12.44 43.5 45.2 16 1.64 31.78 P 27.27 -18.73 46 37.4 19.7 1.94 31.77 P 25.94 -20.06 46 35.44 20.16 2.11 31.77 P 28.22 -17.78 46 31.16 26.14 2.96 32.04 P

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Band 4 5725~5850MHz WIFI 802.11n HT20 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.		(BALL -)	(dD::)(/rec)	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dB _µ V)	(dB/m)	(dB)	(dB)	(cm)		(P/A)	` ′
		5704.28	49.33	-24.67	74	41.21	32.29	9.39	33.56	176	0	Р	Н
		5722.76	57.89	-20.41	78.3	49.71	32.31	9.44	33.57	176	0	Р	Н
		5714.2	40.87	-13.13	54	32.76	32.29	9.39	33.57	176	0	Α	Н
	*	5745	100.5	-	-	92.29	32.34	9.44	33.57	176	0	Р	Н
	*	5745	94.22	-	-	86.01	32.34	9.44	33.57	176	0	Α	Н
													Н
802.11n													Н
HT20													Н
CH 149		5710.2	48.2	-25.8	74	40.09	32.29	9.39	33.57	100	11	Р	٧
5745MHz		5724.6	51.73	-26.57	78.3	43.55	32.31	9.44	33.57	100	11	Р	V
		5714.92	39.41	-14.59	54	31.3	32.29	9.39	33.57	100	11	Α	V
	*	5745	95.19	-	-	86.98	32.34	9.44	33.57	100	11	Р	٧
	*	5745	89.45	-	-	81.24	32.34	9.44	33.57	100	11	Α	٧
													V
													٧
													V

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5714.04	48.67	-25.33	74	40.56	32.29	9.39	33.57	171	0	Р	Н
		5723.72	47.77	-30.53	78.3	39.59	32.31	9.44	33.57	171	0	Р	Н
		5714.84	39.71	-14.29	54	31.6	32.29	9.39	33.57	171	0	Α	Н
	*	5785	101.55	-	-	93.26	32.39	9.49	33.59	171	0	Р	Н
	*	5785	95.09	-	-	86.8	32.39	9.49	33.59	171	0	Α	Н
		5857.12	48.54	-29.76	78.3	40.1	32.51	9.54	33.61	171	0	Р	Н
802.11n		5877.36	48.37	-25.63	74	39.92	32.53	9.54	33.62	171	0	Р	Н
HT20		5860.64	40.1	-13.9	54	31.67	32.51	9.54	33.62	171	0	Α	Н
CH 157		5711	46.93	-27.07	74	38.82	32.29	9.39	33.57	103	9	Р	V
5785MHz		5718.84	47.38	-30.92	78.3	39.25	32.31	9.39	33.57	103	9	Р	V
		5710.52	38.82	-15.18	54	30.71	32.29	9.39	33.57	103	9	Α	٧
	*	5785	97.51	-	-	89.22	32.39	9.49	33.59	103	9	Р	٧
	*	5785	90.92	-	-	82.63	32.39	9.49	33.59	103	9	Α	٧
		5852.16	48.4	-29.9	78.3	39.99	32.48	9.54	33.61	103	9	Р	٧
		5860.64	47.78	-26.22	74	39.35	32.51	9.54	33.62	103	9	Р	٧
		5870	39.63	-14.37	54	31.2	32.51	9.54	33.62	103	9	Α	٧

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant. 1+2		(MHz)	(dBµV/m)	Limit (dB)	Line (dBµV/m)	Level (dBµV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	(H/V
	*	5825	102.14	-	-	93.76	32.46	9.52	33.6	165	0	Р	Н
	*	5825	95.48	-	-	87.1	32.46	9.52	33.6	165	0	Α	Н
		5855.44	50.77	-27.53	78.3	42.33	32.51	9.54	33.61	165	0	Р	Н
		5864.96	48.8	-25.2	74	40.37	32.51	9.54	33.62	165	0	Р	Н
		5860	41.39	-12.61	54	32.96	32.51	9.54	33.62	165	0	Α	Н
													Н
802.11n													Н
HT20													Н
CH 165	*	5825	96.12	-	-	87.74	32.46	9.52	33.6	102	352	Р	V
5825MHz	*	5825	90.03	-	-	81.65	32.46	9.52	33.6	102	352	Α	V
		5852.24	48.89	-29.41	78.3	40.48	32.48	9.54	33.61	102	352	Р	V
		5877.04	47.89	-26.11	74	39.44	32.53	9.54	33.62	102	352	Р	V
		5861.76	39.62	-14.38	54	31.19	32.51	9.54	33.62	102	352	Α	V
													V
													V
													V

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WIFI 802.11n HT20 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos		Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dB _µ V)	(dB/m)	(dB)	(dB)	(cm)		(P/A)	
		11490	58.6	-15.4	74	70.48	39.91	13.95	65.74	290	324	Р	Н
		11490	48.27	-5.73	54	60.15	39.91	13.95	65.74	290	324	Α	Н
802.11n		17235	44.8	-29.2	74	50.93	41	16.95	64.08	100	0	Р	Н
HT20													Н
CH 149		11490	50.21	-23.79	74	62.09	39.91	13.95	65.74	100	0	Р	V
5745MHz		17235	44.79	-29.21	74	50.92	41	16.95	64.08	100	0	Р	V
													V
													V
		11570	57.24	-16.76	74	69.14	39.76	14	65.66	292	323	Р	Н
		11570	47.45	-6.55	54	59.35	39.76	14	65.66	292	323	Α	Н
802.11n		17355	45.07	-28.93	74	50.91	41.35	17.03	64.22	100	0	Р	Н
HT20													Н
CH 157		11570	50.95	-23.05	74	62.85	39.76	14	65.66	100	0	Р	V
5785MHz		17355	44.15	-29.85	74	49.99	41.35	17.03	64.22	100	0	Р	V
													V
													V
		11650	57.75	-16.25	74	69.7	39.62	14.05	65.62	294	324	Р	Н
		11650	47.48	-6.52	54	59.43	39.62	14.05	65.62	294	324	Α	Н
802.11n		17475	44.19	-29.81	74	49.75	41.7	17.1	64.36	100	0	Р	Н
HT20													Н
CH 165		11650	50.37	-23.63	74	62.32	39.62	14.05	65.62	100	0	Р	V
5825MHz		17475	43.69	-30.31	74	49.25	41.7	17.1	64.36	100	0	Р	V
													V
													V

Remark

. No other spurious found.

2. All results are PASS against Peak and Average limit line.

SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978

Band 4 5725~5850MHz WIFI 802.11n HT40 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dB _µ V)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
		5712.44	57.28	-16.72	74	49.17	32.29	9.39	33.57	137	0	Р	Н
		5723.8	58.22	-20.08	78.3	50.04	32.31	9.44	33.57	137	0	Р	Н
		5714.12	49.34	-4.66	54	41.23	32.29	9.39	33.57	137	0	Α	Н
	*	5755	97.93	-	-	89.7	32.36	9.44	33.57	137	0	Р	Н
	*	5755	91.83	-	-	83.6	32.36	9.44	33.57	137	0	Α	Н
		5859.36	47.25	-31.05	78.3	38.82	32.51	9.54	33.62	137	0	Р	Н
802.11n		5889.44	48.21	-25.79	74	39.71	32.56	9.57	33.63	137	0	Р	Н
HT40		5876.24	40.1	-13.9	54	31.65	32.53	9.54	33.62	137	0	Α	Н
CH 151		5713.48	52.04	-21.96	74	43.93	32.29	9.39	33.57	100	31	Р	٧
5755MHz		5717.24	56.23	-22.07	78.3	48.12	32.29	9.39	33.57	100	31	Р	V
		5713.24	45.51	-8.49	54	37.4	32.29	9.39	33.57	100	31	Α	V
	*	5755	93.81	-	-	85.58	32.36	9.44	33.57	100	31	Р	٧
	*	5755	88.1	-	-	79.87	32.36	9.44	33.57	100	31	Α	٧
		5851.12	47.65	-30.65	78.3	39.24	32.48	9.54	33.61	100	31	Р	٧
		5886.24	48.18	-25.82	74	39.71	32.53	9.57	33.63	100	31	Р	٧
		5879.04	39.96	-14.04	54	31.51	32.53	9.54	33.62	100	31	Α	V

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WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V
		5686.44	47.94	-26.06	74	39.84	32.27	9.39	33.56	132	5	Р	Н
		5718.92	49.8	-28.5	78.3	41.67	32.31	9.39	33.57	132	5	Р	Н
		5714.6	40.35	-13.65	54	32.24	32.29	9.39	33.57	132	5	Α	Н
	*	5795	98.52	-	-	90.21	32.41	9.49	33.59	132	5	Р	Н
	*	5795	92.41	-	-	84.1	32.41	9.49	33.59	132	5	Α	Н
		5851.2	49.52	-28.78	78.3	41.11	32.48	9.54	33.61	132	5	Р	Н
802.11n		5866.56	48.61	-25.39	74	40.18	32.51	9.54	33.62	132	5	Р	Н
HT40		5862.88	41.84	-12.16	54	33.41	32.51	9.54	33.62	132	5	Α	Н
CH 159		5685.96	46.65	-27.35	74	38.55	32.27	9.39	33.56	100	28	Р	V
5795MHz		5717.88	46.33	-31.97	78.3	38.2	32.31	9.39	33.57	100	28	Р	V
		5694.92	39.76	-14.24	54	31.66	32.27	9.39	33.56	100	28	Α	V
	*	5795	92.93	-	-	84.62	32.41	9.49	33.59	100	28	Р	V
	*	5795	87.24	-	-	78.93	32.41	9.49	33.59	100	28	Α	V
		5852.16	47.63	-30.67	78.3	39.22	32.48	9.54	33.61	100	28	Р	V
		5889.44	47.78	-26.22	74	39.28	32.56	9.57	33.63	100	28	Р	V
		5860.16	40.13	-13.87	54	31.7	32.51	9.54	33.62	100	28	Α	V

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WIFI 802.11n HT40 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol
Ant. 1+2		(MHz)	(dBµV/m)	Limit (dB)	Line (dBµV/m)	Level (dBµV)	Factor (dB/m)	Loss (dB)	Factor (dB)	Pos (cm)	Pos (deg)	Avg. (P/A)	
		11510	56.58	-17.42	74	68.43	39.9	13.95	65.7	294	322	Р	Н
		11510	46.66	-7.34	54	58.51	39.9	13.95	65.7	294	322	Α	Н
802.11n		17265	44.88	-29.12	74	50.95	41.1	16.95	64.12	100	0	Р	Н
HT40													Н
CH 151		11510	48.62	-25.38	74	60.47	39.9	13.95	65.7	100	0	Р	V
5755MHz		17265	43.62	-30.38	74	49.69	41.1	16.95	64.12	100	0	Р	V
													V
													V
		11590	52.59	-21.41	74	64.51	39.73	14	65.65	226	5	Р	Н
		11590	45.24	-8.76	54	57.16	39.73	14	65.65	226	5	Α	Н
802.11n		17385	45.38	-28.62	74	51.16	41.45	17.03	64.26	100	0	Р	Н
HT40													Н
CH 159		11590	48.48	-25.52	74	60.4	39.73	14	65.65	100	0	Р	V
5795MHz		17385	44.84	-29.16	74	50.62	41.45	17.03	64.26	100	0	Р	V
													V
													V

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^{2.} All results are PASS against Peak and Average limit line.

Band 4 5725~5850MHz WIFI 802.11ac VHT80 (Band Edge @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos		Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dB _µ V)	(dB/m)	(dB)	(dB)	(cm)		(P/A)	1
		5693	56.93	-17.07	74	48.83	32.27	9.39	33.56	151	3	Р	Н
		5723.08	57.04	-21.26	78.3	48.86	32.31	9.44	33.57	151	3	Р	Н
		5696.76	50.75	-3.25	54	42.65	32.27	9.39	33.56	151	3	Α	Н
	*	5775	96.22	-	-	87.92	32.39	9.49	33.58	151	3	Р	Н
	*	5775	90.23	-	-	81.93	32.39	9.49	33.58	151	3	Α	Н
		5855.76	50.16	-28.14	78.3	41.72	32.51	9.54	33.61	151	3	Р	Η
802.11ac		5869.28	50.42	-23.58	74	41.99	32.51	9.54	33.62	151	3	Р	Н
VHT80		5864.08	43.71	-10.29	54	35.28	32.51	9.54	33.62	151	3	Α	Н
CH 155		5698.2	53.81	-20.19	74	45.71	32.27	9.39	33.56	101	26	Р	V
5775MHz		5717.8	53.48	-24.82	78.3	45.35	32.31	9.39	33.57	101	26	Р	V
		5696.2	47.68	-6.32	54	39.58	32.27	9.39	33.56	101	26	Α	V
	*	5775	91.18	-	-	82.88	32.39	9.49	33.58	101	26	Р	V
	*	5775	86.23	-	-	77.93	32.39	9.49	33.58	101	26	Α	V
		5858.64	49.32	-28.98	78.3	40.89	32.51	9.54	33.62	101	26	Р	V
		5873.6	48.25	-25.75	74	39.8	32.53	9.54	33.62	101	26	Р	V
		5863.36	42.41	-11.59	54	33.98	32.51	9.54	33.62	101	26	Α	V

^{2.} All results are PASS against Peak and Average limit line.

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WIFI 802.11ac VHT80 (Harmonic @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V
		11550	47.24	-26.76	74	59.14	39.8	13.97	65.67	100	0	Р	Н
		17325	43.57	-30.43	74	49.5	41.25	17	64.18	100	0	Р	Н
802.11ac													Н
VHT80													Н
CH 155		11550	43.69	-30.31	74	55.59	39.8	13.97	65.67	100	0	Р	V
5775MHz		17325	43.59	-30.41	74	49.52	41.25	17	64.18	100	0	Р	V
													V
													V

Remark

No other spurious found.

2. All results are PASS against Peak and Average limit line.

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Emission below 1GHz

5GHz WIFI 802.11ac VHT80 (LF @ 3m)

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1+2		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V
		66.72	27.06	-12.94	40	52.87	4.94	1.04	31.79	100	245	Р	Н
		107.22	28	-15.5	43.5	47.42	11.08	1.28	31.78			Р	Н
		216.03	30.59	-15.41	46	52.68	7.9	1.79	31.78			Р	Н
		310.5	21.99	-24.01	46	38.24	13.4	2.11	31.76			Р	Н
		664.7	20.42	-25.58	46	30.49	18.95	3.02	32.04			Р	Н
		897.1	23.74	-22.26	46	31.53	20.1	3.55	31.44			Р	Н
													Н
													Н
													Н
													Н
5GHz													Н
802.11ac													Н
VHT80		43.5	32.5	-7.5	40	52.97	10.67	0.67	31.81	150	233	Р	V
LF		150.96	23.92	-19.58	43.5	44.28	9.96	1.46	31.78			Р	V
		197.13	26.01	-17.49	43.5	47.61	8.54	1.64	31.78			Р	V
		313.3	21.38	-24.62	46	37.61	13.43	2.11	31.77			Р	V
		743.8	22.16	-23.84	46	31.1	19.8	3.25	31.99			Р	V
		934.2	23.44	-22.56	46	30.59	20.33	3.68	31.16			Р	V
													V
													V
													V
													V
													V
													V

Remark

2. All results are PASS against limit line.

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Note symbol

*	Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency.
!	Test result is over limit line.
P/A	Peak or Average
H/V	Horizontal or Vertical

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A calculation example for radiated spurious emission is shown as below:

WIFI	Note	Frequency	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	Peak	Pol.
Ant.				Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Avg.	
1		(MHz)	(dBµV/m)	(dB)	(dBµV/m)	(dBµV)	(dB/m)	(dB)	(dB)	(cm)	(deg)	(P/A)	(H/V)
802.11b		2390	55.45	-18.55	74	54.51	32.22	4.58	35.86	103	308	Р	Н
CH 01													
2412MHz		2390	43.54	-10.46	54	42.6	32.22	4.58	35.86	103	308	Α	Н

1. Level($dB\mu V/m$) =

Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBµV) - Preamp Factor(dB)

2. Over Limit(dB) = Level(dB μ V/m) – Limit Line(dB μ V/m)

For Peak Limit @ 2390MHz:

- 1. Level(dBµV/m)
- = Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBµV) Preamp Factor(dB)
- $= 32.22(dB/m) + 4.58(dB) + 54.51(dB\mu V) 35.86 (dB)$
- $= 55.45 (dB\mu V/m)$
- 2. Over Limit(dB)
- = Level(dBµV/m) Limit Line(dBµV/m)
- $= 55.45(dB\mu V/m) 74(dB\mu V/m)$
- = -18.55(dB)

For Average Limit @ 2390MHz:

- 1. Level(dBµV/m)
- = Antenna Factor(dB/m) + Cable Loss(dB) + Read Level(dBµV) Preamp Factor(dB)
- $= 32.22(dB/m) + 4.58(dB) + 42.6(dB\mu V) 35.86 (dB)$
- $= 43.54 (dB\mu V/m)$
- 2. Over Limit(dB)
- = Level($dB\mu V/m$) Limit Line($dB\mu V/m$)
- $= 43.54(dB\mu V/m) 54(dB\mu V/m)$
- = -10.46(dB)

Both peak and average measured complies with the limit line, so test result is "PASS".

SPORTON INTERNATIONAL INC.

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