

Report No.: FR370334AN

FCC Test Report

Equipment : 802.11 a/n/ac Module

Brand Name : Senao

Model No. : PCE4551AH

FCC ID : U2M-PCE4551AH

Standard : 47 CFR FCC Part 15.407

Operating Band : 5150 MHz - 5250 MHz

FCC Classification: NII

Applicant : Senao Networks, Inc.

Manufacturer 3F, No. 529, Chung Cheng Rd., Hsintien, Taipei, Taiwan

The product sample received on Jul. 03, 2013 and completely tested on Oct. 28, 2013. We, SPORTON, would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.10-2009 and shown compliance with the applicable technical standards.

The test results in this report apply exclusively to the tested model / sample. Without written approval of SPORTON INTERNATIONAL INC., the test report shall not be reproduced except in full.

Reviewed by:

Gary Chang / Manager



SPORTON INTERNATIONAL INC. Page No. : 1 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



Table of Contents

1	GENERAL DESCRIPTION	5
1.1	Information	5
1.2	Support Equipment	7
1.3	Testing Applied Standards	7
1.4	Testing Location Information	8
1.5	Measurement Uncertainty	8
2	TEST CONFIGURATION OF EUT	9
2.1	The Worst Case Modulation Configuration	9
2.2	The Worst Case Power Setting Parameter	9
2.3	The Worst Case Measurement Configuration	11
2.4	Test Setup Diagram	12
3	TRANSMITTER TEST RESULT	13
3.1	AC Power-line Conducted Emissions	13
3.2	Emission Bandwidth	20
3.3	RF Output Power	25
3.4	Peak Power Spectral Density	32
3.5	Peak Excursion	39
3.6	Transmitter Radiated Unwanted Emissions and Band Edge	43
3.7	Frequency Stability	106
4	TEST EQUIPMENT AND CALIBRATION DATA	108
APPI	ENDIX A. TEST PHOTOS	A1-A12

TEL: 886-3-3273456 FAX: 886-3-3270973 Report No.: FR370334AN



Summary of Test Result

Report No.: FR370334AN

		Conform	nance Test Specifications		
Report Clause	Ref. Std. Clause	Description	Measured	Limit	Result
1.1.2	15.203	Antenna Requirement	Antenna connector mechanism complied	FCC 15.203	Complied
3.1	15.207	AC Power-line [dBuV]: 0.202MHz Conducted Emissions 38.02 (Margin 15.52dB) - AV 51.66 (Margin 11.88dB) - QP		FCC 15.207	Complied
3.2	15.407(a)	Emission Bandwidth	Bandwidth [MHz] 20M:25.22 / 40M:48.35 / 80M: 97.39	Information only	Complied
3.3	15.407(a)	RF Output Power (Maximum Conducted Output Power)	Power [dBm] 5150-5250MHz:16.58	Power [dBm] 5150-5250MHz:17	Complied
3.4	15.407(a)	Peak Power Spectral Density	PPSD [dBm/MHz] 5150-5250MHz:2.04	PPSD [dBm/MHz] 5150-5250MHz:4	Complied
3.5	15.407(a)	Peak Excursion	10.68 dB	13 dB	Complied
3.6	15.407(b)	Transmitter Unwanted Emissions and Band Edge	Restricted Bands [dBuV/m at 3m]:5150.00MHz 52.98 (Margin 1.02dB) - AV	Non-Restricted Bands: ≤ -27dBm (68.3dBuV/m@3m) Restricted Bands: FCC 15.209	Complied
3.7	15.407(g)	Frequency Stability	2.7865 ppm	Signal shall remain in-band	Complied

SPORTON INTERNATIONAL INC. Page No. : 3 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Revision History

Report No.: FR370334AN

Report No.	Version	Description	Issued Date
FR370334AN	Rev. 01	Initial issue of report	Sep. 25, 2013
FR370334AN	Rev. 02	Modified output power by software setting	Nov. 05, 2013

SPORTON INTERNATIONAL INC. Page No. : 4 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



1 General Description

1.1 Information

1.1.1 RF General Information

	RF General Information							
Frequency Range (MHz)	IEEE Std. 802.11	Ch. Freq. (MHz)	Channel Number	Transmit Chains (N _{TX})	RF Output Power (dBm)	Co-location		
5150-5250	а	5180-5240	36-48 [4]	3	14.67	N/A		
5150-5250	n(HT20)	5180-5240	36-48 [4]	3	14.86	N/A		
5150-5250	n(HT40)	5190-5230	38-46 [2]	3	16.51	N/A		
5150-5250	ac(VHT20)	5180-5240	36-48 [4]	3	15.00	N/A		
5150-5250	ac(VHT40)	5190-5230	38-46 [2]	3	16.58	N/A		
5150-5250	ac(VHT80)	5210	42 [1]	3	16.41	N/A		

Report No.: FR370334AN

- Note 1: RF output power specifies that Maximum Conducted Output Power.
- Note 2: 802.11a/n uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM modulation.
- Note 3: 802.11ac uses a combination of OFDM-BPSK, QPSK, 16QAM, 64QAM, 256QAM modulation.
- Note 4: Co-location, Co-location is generally defined as simultaneously transmitting (co-transmitting) antennas within 20 cm of each other. (i.e., EUT has simultaneously co-transmitting that operating 2.4GHz and 5GHz.)

1.1.2 Antenna Information

		Antenna Category								
	Equ	Equipment placed on the market without antennas								
	Inte	gral antenna (antenna permanently attached)								
		Temporary RF connector provided								
		No temporary RF connector provided Transmit chains bypass antenna and soldered temporary RF connector provided for connected measurement. In case of conducted measurements the transmitter shall be connected to the measuring equipment via a suitable attenuator and correct for all losses in the RF path.								
\boxtimes	Exte	ernal antenna (dedicated antennas)								
		Single power level with corresponding antenna(s).								
	\boxtimes	Multiple power level and corresponding antenna(s).								
	\boxtimes	RF connector provided								
		☐ Unique antenna connector. (e.g., MMCX, U.FL, IPX, and RP-SMA, RP-N type)								
		Standard antenna connector. (e.g., SMA, N, BNC, and TNC type)								

SPORTON INTERNATIONAL INC. Page No. : 5 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



	Antenna General Information						
No. Ant. Cat. Ant. Type Connector Gain (dBi)							
1	External	Dipole	UFL	3			
2	External	Dipole	UFL	5.5			
3	Integral	PIFA	UFL	6			
4	Integral	PIFA	UFL	5.5			

Report No.: FR370334AN

Note:

- The antennas are professionally installed.
 Two PIFA antennas with the same power setting, 6dBi one with the highest gain was chosen for final

1.1.3 Type of EUT

	Identify EUT					
EUT Serial Number		N/A				
Pre	sentation of Equipment	☐ Production ; ☐ Prototype				
	Type of EUT					
	Stand-alone					
	Combined (EUT where the radio part is fully integrated within another device)					
	Combined Equipment - Brand Name / Model No.:					
\boxtimes	Plug-in radio					
	Other:					

SPORTON INTERNATIONAL INC. : 6 of 109 Page No. TEL: 886-3-3273456 Report Version : Rev. 02

1.1.4 Test Signal Duty Cycle

	Operated Mode for Worst Duty Cycle						
	Operated normally mode for worst duty cycle						
\boxtimes	Operated test mode for worst duty cycle						
	Test Signal Duty Cycle (x)	Power Duty Factor [dB] – (10 log 1/x)					
\boxtimes	98.26% - IEEE 802.11a	0.08					
\boxtimes	98.16% - IEEE 802.11ac (VHT20)	0.08					
\boxtimes	95.91% - IEEE 802.11ac (VHT40)	0.18					
\boxtimes	90.45% - IEEE 802.11ac (VHT80)	0.44					

Report No.: FR370334AN

1.1.5 EUT Operational Condition

Supply Voltage	☐ AC mains	□ DC	
Type of DC Source	☐ Internal DC supply	☐ External DC adapter	
Test Voltage (Host)			
Test Climatic	⊠ Tnom (20°C)		☐ Tmin (-30°C)

1.2 Support Equipment

	Support Equipment							
No.	No. Equipment Brand Name Model Name Serial No.							
1	Notebook	DELL	E5420	DoC				
2	Extender card	Senao	adapter	NA				
3	Carrier board	Senao	IAP6200AG-0 0.2 LFP	NA				

1.3 Testing Applied Standards

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

- 47 CFR FCC Part 15
- ANSI C63.10-2009
- FCC KDB 789033 v01r03
- FCC KDB 662911 v02
- FCC KDB 412172 v01

SPORTON INTERNATIONAL INC. Page No. : 7 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



1.4 Testing Location Information

	Testing Location						
\boxtimes	Sporton	ADD	:	No. 52, Hwa Ya	a 1st Rd., Kwei-Shan I	Hsiang, Tao Yuan Hsie	en, Taiwan, R.O.C.
	Lab	TEL	:	886-3-327-345	6 FAX : 886	6-3-318-0055	
ADD : No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Hsiang, Tao Yuan Hsein 333, Taiwan (R.O.C.)					Yuan Hsein 333,		
		TEL	:	886-3-271-866	6 FAX : 886	6-3-318-0155	
T	est Condition	n	Т	est Site No.	Test Engineer	Test Environment	Test Date
RF Conducted				TH01-HY	Mark Liao	22.1°C / 61%	Aug. 12, 2013 Oct. 28, 2013
*AC Conduction CO01-WS Skys Huang 23°C / 58% Aug. 13, 20°				Aug. 13, 2013			
*Ra	*Radiated Emission 03CH01-WS Aska Huang 25°C / 65% Jul. 27 ~ Oct. 28, 201					Jul. 27 ~ Oct. 28, 2013	
	Test site registered number [657002] with FCC. Test site registered number [10807A-1] with IC.						

Report No.: FR370334AN

1.5 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)

Measurement Uncertainty						
Test Item		Uncertainty	Limit			
AC power-line conducted emissions		±2.26 dB	N/A			
Emission bandwidth		±1.42 %	N/A			
RF output power, conducted	RF output power, conducted					
Power density, conducted	±0.81 dB	N/A				
All emissions, radiated	30 – 1000 MHz	±3.9 dB	N/A			
	Above 1GHz	±4.2 dB	N/A			
Temperature		±0.8 °C	N/A			
Humidity		±3 %	N/A			
DC and low frequency voltages	±3 %	N/A				
Time	±1.42 %	N/A				
Duty Cycle		±1.42 %	N/A			

SPORTON INTERNATIONAL INC. Page No. : 8 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

Note: * Sporton Lab subcontracts this test item to ICC lab (TAF: 2732).

ICC lab is a TAF accreditation test firm and also is an approved provider of Sporton lab.



2 Test Configuration of EUT

2.1 The Worst Case Modulation Configuration

Worst Modulation Used for Conformance Testing (5150-5250MHz)									
Modulation Mode	Transmit Chains (N _{TX})	Data Rate / MCS	Worst Data Rate / MCS						
11a	3	6-54Mbps	6 Mbps						
HT20	3	M0-23	M0						
HT40	3	M0-23	M0						
VHT20	3	M0-9	M0						
VHT40	3	M0-9	M0						
VHT80	3	M0-9	MO						

Report No.: FR370334AN

2.2 The Worst Case Power Setting Parameter

The Worst Case Power Setting Parameter (5150-5250 MHz band)								
Operating Mode	1 (Ar	1 (Ant. 1, 3dBi Dipole antenna)						
Test Software Version	art2,	Version: 4_	9_425					
		Test Frequency (MHz)						
Modulation Mode	N_{TX}	NCB: 20MHz			NCB:	40MHz	NCB: 80MHz	
		5180	5200	5240	5190	5230	5210	
11a,6-54Mbps	3	10.5	10	10				
HT20,M0-23	3	10.5	10.5	10.5				
HT40,M0-23	3				12.5	12.5	-	
VHT20,M0-9	3	10.5	10.5	10.5				
VHT40,M0-9	3				12.5	12.5		
VHT80,M0-9	3						12	

SPORTON INTERNATIONAL INC. : 9 of 109
TEL: 886-3-3273456 : Report Version : Rev. 02



The Worst Case Power Setting Parameter (5150-5250 MHz band)								
Operating Mode	2 (Ar	2 (Ant. 2, 5.5dBi Dipole antenna)						
Test Software Version	art2,	Version: 4_	9_425					
		Test Frequency (MHz)						
Modulation Mode	N_{TX}	NCB: 20MHz			NCB:	40MHz	NCB: 80MHz	
		5180	5200	5240	5190	5230	5210	
11a,6-54Mbps	3	7.5	7.5	7.5				
HT20,M0-23	3	7.5	7.5	7.5				
HT40,M0-23	3				11.5	11.5		
VHT20,M0-9	3	7.5	7.5	7.5				
VHT40,M0-9	3				11.5	11.5		
VHT80,M0-9	3						11.5	

Report No.: FR370334AN

The Worst Case Power Setting Parameter (5150-5250 MHz band)								
Operating Mode	3 (Ar	3 (Ant. 3, 6dBi PIFA antenna)						
Test Software Version	art2,	Version: 4_	9_425					
		Test Frequency (MHz)						
Modulation Mode	N _{TX}	NCB: 20MHz			NCB: 40MHz		NCB: 80MHz	
		5180	5200	5240	5190	5230	5210	
11a,6-54Mbps	3	7.5	7.5	7.5				
HT20,M0-23	3	7.5	7.5	7.5				
HT40,M0-23	3				11.5	11.5		
VHT20,M0-9	3	7.5	7.5	7.5				
VHT40,M0-9	3				11.5	11.5		
VHT80,M0-9	3						12	

SPORTON INTERNATIONAL INC. Page No. : 10 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



2.3 The Worst Case Measurement Configuration

The Worst Case Mode for Following Conformance Tests					
Tests Item AC power-line conducted emissions					
Condition	Condition AC power-line conducted measurement for line and neutral Test Voltage: 120Vac / 60Hz				
Operating Mode	Operating Mode Description				
1	DC Power & Radio link (WLAN), Ant 1				
2	DC Power & Radio link (WLAN), Ant 2				
3	DC Power & Radio link (WLAN), Ant 3				

Report No.: FR370334AN

The Worst Case Mode for Following Conformance Tests						
Tests Item RF Output Power						
Test Condition Conducted measurement at transmit chains						
Modulation Mode 11a, HT20, HT40, VHT20, VHT40, VHT80						
Operating Mode	Operating Mode Description					
1	DC Power & Radio link (WLAN), Ant 1					
2	DC Power & Radio link (WLAN), Ant 2					
3	DC Power & Radio link (WLAN), Ant 3					

The Worst Case Mode for Following Conformance Tests					
Tests Item	Peak Power Spectral Density, Emission Bandwidth, Peak Excursion				
Test Condition Conducted measurement at transmit chains					
Modulation Mode	11a, VHT20, VHT40, VHT80				
Operating Mode	Operating Mode Description				
1	DC Power & Radio link (WLAN), Ant 1				
2	DC Power & Radio link (WLAN), Ant 2				
3	DC Power & Radio link (WLAN), Ant 3				

Note:

802.11n/ac modulation modes consist of HT20, HT40, VHT20, VHT40 and VHT80. After pretested, VHT20, VHT40, and VHT80 were the worst cases and were selected for final test.

SPORTON INTERNATIONAL INC. Page No. : 11 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

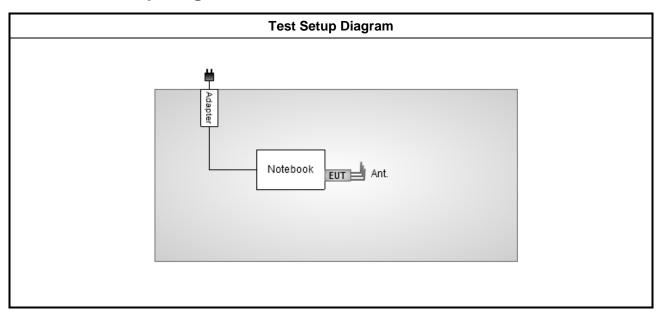
Th	e Worst Case Mode for Fo	ollowing Conformance Te	sts				
Tests Item		Transmitter Radiated Unwanted Emissions Transmitter Radiated Bandedge Emissions					
Test Condition	regardless of spatial multip	Radiated measurement f EUT consist of multiple antenna assembly (multiple antenna are used in EUT egardless of spatial multiplexing MIMO configuration), the radiated test should be performed with highest antenna gain of each antenna type.					
	☐ EUT will be placed in	BUT will be placed in fixed position.					
User Position		EUT will be placed in mobile position and operating multiple positions. EUT shall be performed two orthogonal planes. The worst planes is X.					
		EUT will be operating multiple positions. The antenna of EUT was pre-tested on the positioned of each 3 axis. The worst plane is X.					
Operating Mode < 1GHz		o link (WLAN), Ant 1					
		o link (WLAN), Ant 2					
	□ 3. DC Power & Radi	o link (WLAN), Ant 3					
Modulation Mode	11a, VHT20, VHT40, VHT8	30					
	X Plane	Y Plane	Z Plane				
Orthogonal Planes of EUT							
Note:	1	ı					

Report No.: FR370334AN

Note:

802.11n/ac modulation modes consist of HT20, HT40, VHT20, VHT40 and VHT80. After pretested, VHT20, VHT40, and VHT80 were the worst cases and were selected for final test.

2.4 Test Setup Diagram



SPORTON INTERNATIONAL INC. Page No. : 12 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



3 Transmitter Test Result

3.1 AC Power-line Conducted Emissions

3.1.1 AC Power-line Conducted Emissions Limit

AC Power-line Conducted Emissions Limit							
Frequency Emission (MHz)	Quasi-Peak	Average					
0.15-0.5	66 - 56 *	56 - 46 *					
0.5-5	56	46					
5-30	60	50					

Report No.: FR370334AN

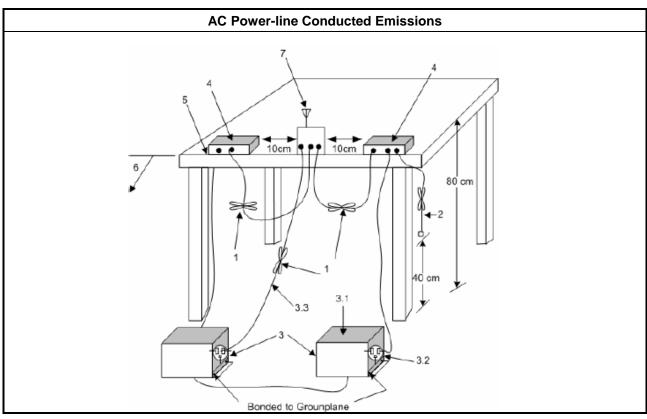
3.1.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.1.3 Test Procedures

	Test Method
\boxtimes	Refer as ANSI C63.10-2009, clause 6.2 for AC power-line conducted emissions.

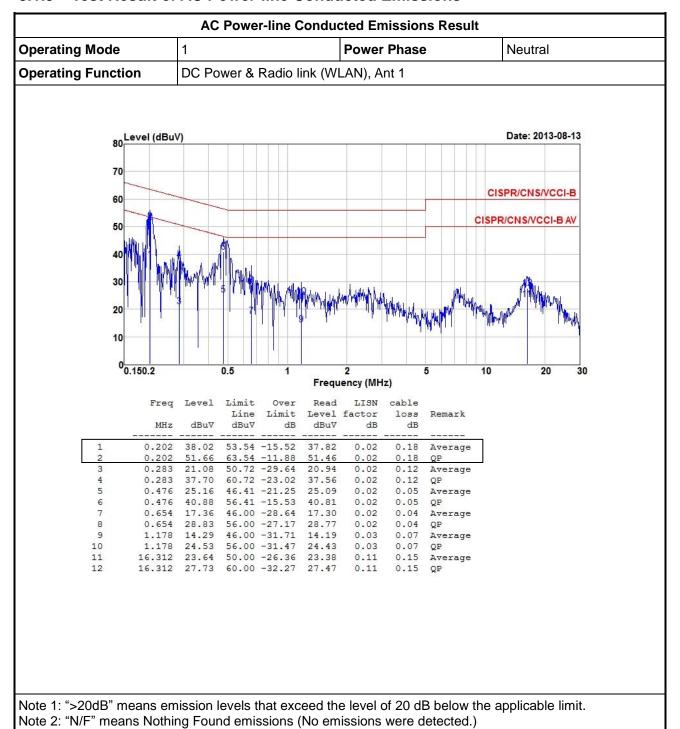
3.1.4 Test Setup



SPORTON INTERNATIONAL INC. Page No. : 13 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



3.1.5 Test Result of AC Power-line Conducted Emissions



Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 14 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

AC Power-line Conducted Emissions Result Operating Mode 1 **Power Phase** Line **Operating Function** DC Power & Radio link (WLAN), Ant 1 80 Level (dBuV) Date: 2013-08-13 70 CISPR/CNS/VCCI-B 60 CISPR/CNS/VCCI-B AV 50 40 30 20 10 0.150.2 0.5 10 20 30 Frequency (MHz) LISN cable Freq Level Limit Read Over Line Limit Level factor Remark loss MHz dBuV dBuV dB dBuV dB dB 0.201 29.18 53.58 -24.40 28.97 0.03 0.18 Average 63.58 -13.17 0.201 50.41 50.20 0.03 0.18 QP 0.292 23.42 50.46 -27.04 0.03 0.11 Average 0.292 39.13 60.46 -21.33 QP 0.469 28.31 46.54 -18.23 28.23 0.03 0.05 Average 0.469 42.08 56.54 -14.46 42.00 0.03 0.05 0.637 14.63 46.00 -31.37 14.56 0.03 0.04 Average 8 0.637 29.31 56.00 -26.69 29.24 0.03 0.04 9 2.190 15.09 46.00 -30.91 14.87 0.05 0.17 Average 2.190 23.05 56.00 -32.95 22.83 10 0.05 0.17 QP 11 17.199 22.13 50.00 -27.87 21.86 0.11 0.16 Average 17.199 27.87 60.00 -32.13 27.60 12 0.11 0.16 QP

Report No.: FR370334AN

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

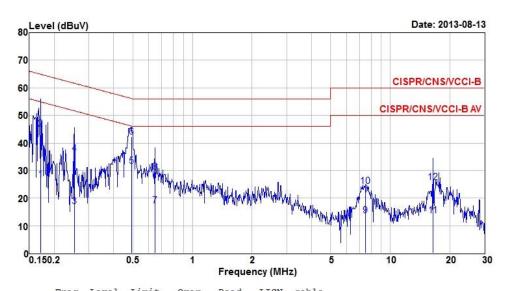
SPORTON INTERNATIONAL INC. Page No. : 15 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

AC Power-line Conducted Emissions Result

Operating Mode 2 Power Phase Neutral

Operating Function DC Power & Radio link (WLAN), Ant 2

Report No.: FR370334AN



	MHz	dBuV	Limit Line dBuV	Limit dB	Level dBuV	factor dB	loss dB	Remark
3								
1	0.171	26.67	E-100	-28.23	26.54	0.02	0.11	Average
2	0.171	45.04	64.90	-19.86	44.91	0.02	0.11	QP
3	0.253	16.89	51.64	-34.75	16.73	0.02	0.14	Average
4	0.253	36.10	61.64	-25.54	35.94	0.02	0.14	QP
5	0.491	31.55	46.14	-14.59	31.48	0.02	0.05	Average
6	0.491	42.33	56.14	-13.81	42.26	0.02	0.05	QP
7	0.647	17.16	46.00	-28.84	17.10	0.02	0.04	Average
8	0.647	29.58	56.00	-26.42	29.52	0.02	0.04	QP
9	7.486	13.78	50.00	-36.22	13.55	0.08	0.15	Average
10	7.486	24.33	60.00	-35.67	24.10	0.08	0.15	QP
11	16.486	13.59	50.00	-36.41	13.33	0.11	0.15	Average
12	16.486	25.73	60.00	-34.27	25.47	0.11	0.15	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

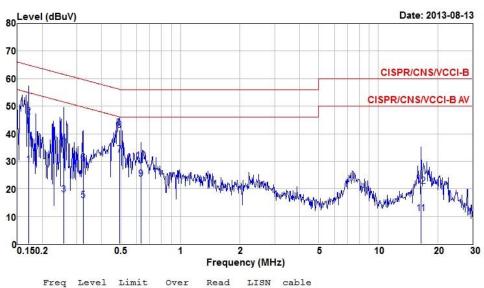
SPORTON INTERNATIONAL INC. Page No. : 16 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

AC Power-line Conducted Emissions Result

Operating Mode 2 Power Phase Line

Operating Function DC Power & Radio link (WLAN), Ant 2

Report No.: FR370334AN



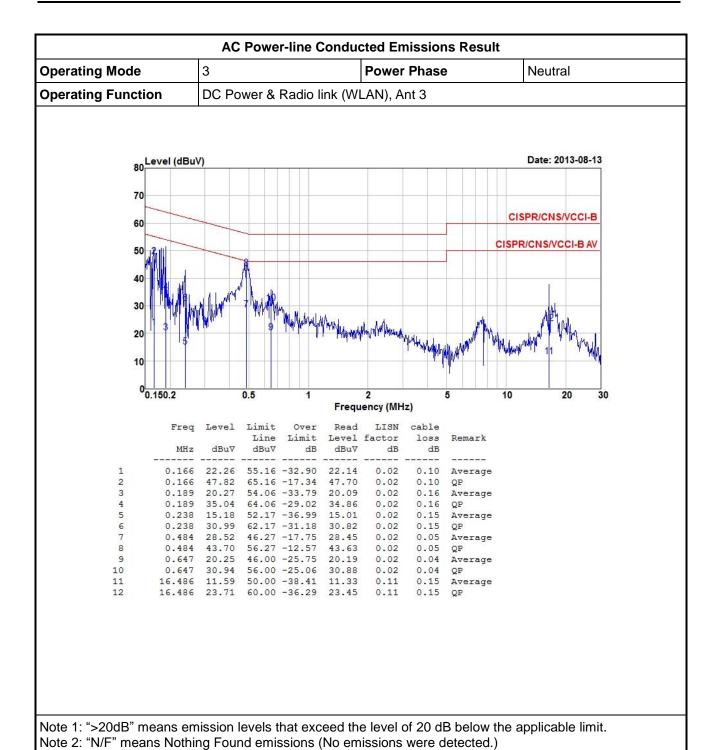
	Freq	Level	Limit	Over	Read	LISN	cable	
			Line	Limit	Level	factor	loss	Remark
	MHz	dBuV	dBuV	dB	dBuV	dB	dB	
1	0.171	28.78	54.90	-26.12	28.64	0.03	0.11	Average
2	0.171	46.22	64.90	-18.68	46.08	0.03	0.11	QP
3	0.258	18.00	51.51	-33.51	17.84	0.03	0.13	Average
4	0.258	36.57	61.51	-24.94	36.41	0.03	0.13	QP
5	0.322	15.80	49.66	-33.86	15.68	0.03	0.09	Average
6	0.322	29.60	59.66	-30.06	29.48	0.03	0.09	QP
7	0.491	32.23	46.14	-13.91	32.15	0.03	0.05	Average
8	0.491	41.41	56.14	-14.73	41.33	0.03	0.05	QP
9	0.634	23.66	46.00	-22.34	23.58	0.03	0.05	Average
10	0.634	30.29	56.00	-25.71	30.21	0.03	0.05	QP
11	16.486	10.99	50.00	-39.01	10.73	0.11	0.15	Average
12	16.486	21.08	60.00	-38.92	20.82	0.11	0.15	QP

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

SPORTON INTERNATIONAL INC. Page No. : 17 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

FCC Test Report No.: FR370334AN



SPORTON INTERNATIONAL INC. Page No. : 18 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

AC Power-line Conducted Emissions Result Operating Mode 3 **Power Phase** Line **Operating Function** DC Power & Radio link (WLAN), Ant 3 80 Level (dBuV) Date: 2013-08-13 70 CISPR/CNS/VCCI-B 60 CISPR/CNS/VCCI-B AV 50 30 20 10 0.150.2 0.5 Frequency (MHz) Freq Level Limit Over Read LISN cable Line Limit Level factor loss Remark MHz dBuV dBuV dB dBuV dB dB 0.169 23.77 55.03 -31.26 23.63 0.03 0.11 Average 0.169 47.84 65.03 -17.19 47.70 0.03 0.11 OP 54.28 -34.16 3 0.184 20.12 19.94 0.03 0.15 Average 0.184 64.28 -20.19 44.09 43.91 0.03 0.15 OP 0.247 16.32 51.86 -35.54 16.15 0.03 0.14 Average 0.247 36.67 61.86 -25.19 36.50 0.03 0.14 QP 0.479 27.90 46.36 -18.46 27.82 0.03 0.05 Average 0.479 43.24 56.36 -13.12 0.03 0.05 43.16 QP 0.644 16.77 46.00 -29.23 16.70 0.03 0.04 Average 0.644 30.59 56.00 -25.41 30.52 0.03 0.04 QP 16.486 13.80 50.00 -36.20 13.54 16.486 25.30 60.00 -34.70 25.04 Average

Report No.: FR370334AN

Note 1: ">20dB" means emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found emissions (No emissions were detected.)

SPORTON INTERNATIONAL INC. Page No. : 19 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.2 Emission Bandwidth

3.2.1 Emission Bandwidth (EBW) Limit

	Emission Bandwidth (EBW) Limit
UNI	I Devices
\boxtimes	For the $5.15-5.25$ GHz band, the maximum conducted output power shall not exceed the lesser of 50 mW or $4 \text{dBm} + 10 \log B$, where B is the 26dB emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
	For the $5.47-5.725$ GHz band, the maximum conducted output power shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz.
	For the 5.725-5.825 GHz band, the maximum conducted output power shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz
LE-	LAN Devices
\boxtimes	For the band 5.15-5.25 GHz, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.725-5.825 GHz band, the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.

Report No.: FR370334AN

3.2.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

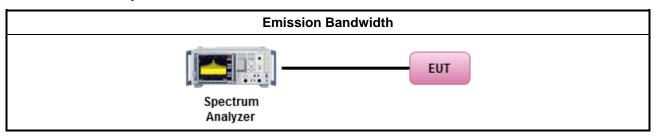
3.2.3 Test Procedures

			Test Method											
\boxtimes	For	the e	mission bandwidth shall be measured using one of the options below:											
	\boxtimes	Ref	er as FCC KDB 789033 v01r03, clause C for EBW and clause D for OBW measurement.											
		Refer as ANSI C63.10, clause 6.9.1 for occupied bandwidth testing.												
	\boxtimes	Refer as IC RSS-Gen, clause 4.6 for bandwidth testing.												
\boxtimes	For	cond	ucted measurement.											
		The	EUT supports single transmit chain and measurements performed on this transmit chain.											
		The	EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.											
	\boxtimes	The	EUT supports multiple transmit chains using options given below:											
			Option 1: Multiple transmit chains measurements need to be performed on one of the active transmit chains (antenna outputs). All measurement had be performed on transmit chains 1.											
			Option 2: Multiple transmit chains measurements need to be performed on each transmit chains individually (antenna outputs). All measurement had be performed on all transmit chains.											

SPORTON INTERNATIONAL INC. Page No. : 20 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



3.2.4 Test Setup



Report No.: FR370334AN

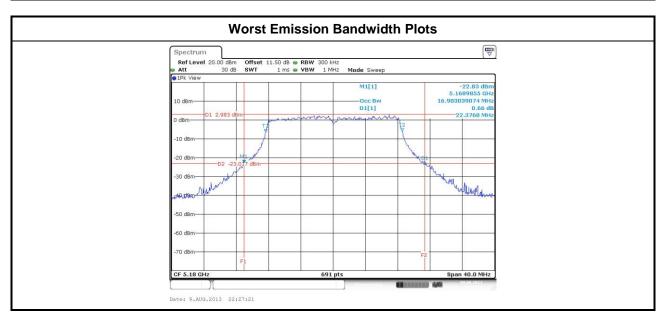
SPORTON INTERNATIONAL INC. Page No. : 21 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



3.2.5 Test Result of Emission Bandwidth

Operatin	g Mod	е	1										
		UNII Em	nission	ssion Bandwidth Result (5150-5250MHz band)									
Cond	ition			Emission Bandwidth (MHz)									
Modulation		Freq.	9	99% Ba	ndwidtl	h	2	6dB Ba	ndwidt	h	Powe	r Limit	
Mode	N _{TX}	(MHz)	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	99% BW	26dB BW	
11a	3	5180	17.02	16.90	16.85		23.07	22.38	23.36		16.27	17.00	
11a	3	5200	17.02	16.96	16.90		23.25	22.61	22.78		16.28	17.00	
11a	3	5240	17.08	16.90	16.90		23.19	22.55	23.01		16.28	17.00	
VHT20	3	5180	18.18	18.06	18.06		23.59	23.65	24.12		16.57	17.00	
VHT20	3	5200	18.18	18.06	18.12		24.00	23.59	25.22		16.57	17.00	
VHT20	3	5240	18.06	18.18	18.06		23.83	24.17	23.83		16.57	17.00	
VHT40	3	5190	37.40	37.28	37.40		47.19	46.84	46.49		17.00	17.00	
VHT40	3	5230	37.51	37.28	37.28		47.07	46.73	45.33		17.00	17.00	
VHT80	3	5210	75.95	76.18	76.18		97.39	93.91	97.16		17.00	17.00	
Res	ult						Com	plied					

Report No.: FR370334AN

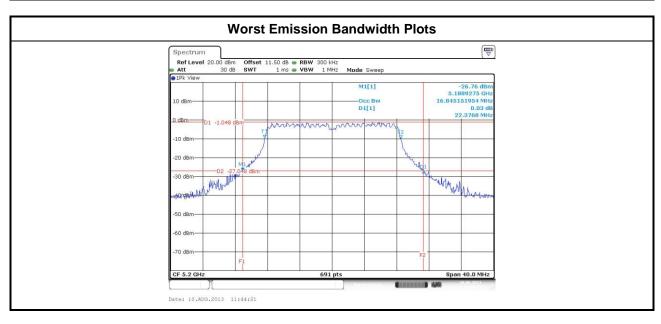


SPORTON INTERNATIONAL INC. Page No. : 22 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Operatino	g Mod	е	2									
		UNII Em	ission	ssion Bandwidth Result (5150-5250MHz band)								
Condi	Condition					Emiss	ion Bar	ndwidth	(MHz)			
Modulation		Freq.	9	99% Ba	ndwidtl	n	2	6dB Ba	ndwidt	h	Powe	r Limit
Mode	N _{TX}	(MHz)	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	99% BW	26dB BW
11a	3	5180	17.08	16.90	16.85		22.84	22.55	23.36		16.27	17.00
11a	3	5200	17.13	16.90	16.85		23.71	22.78	22.38		16.27	17.00
11a	3	5240	17.13	16.96	16.90		23.48	23.01	22.96		16.28	17.00
VHT20	3	5180	18.12	18.12	18.00		24.00	23.77	23.59		16.55	17.00
VHT20	3	5200	18.18	18.12	18.12		23.71	23.83	24.23		16.58	17.00
VHT20	3	5240	18.23	18.12	18.06		24.35	24.12	24.06		16.57	17.00
VHT40	3	5190	37.51	37.28	37.28		47.30	46.15	46.15		17.00	17.00
VHT40	3	5230	37.28	37.28	37.28		48.35	47.19	46.84		17.00	17.00
VHT80	3	5210	76.18	75.94	76.41		92.29	92.99	96.70		17.00	17.00
Resu	ılt						Com	plied				

Report No.: FR370334AN

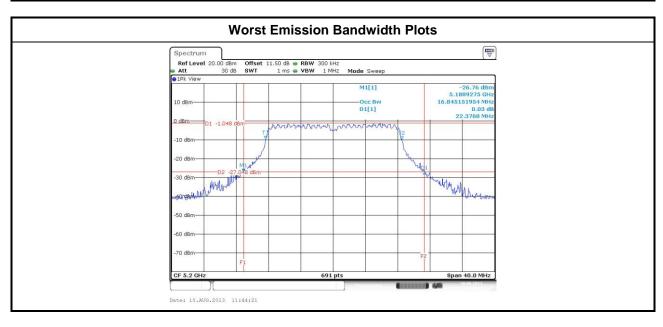


SPORTON INTERNATIONAL INC. Page No. : 23 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Operating	g Mod	е	3										
		UNII Em	ission	ssion Bandwidth Result (5150-5250MHz band)									
Condi	tion					Emiss	ion Bar	ndwidth	(MHz)				
Modulation		Freq.	9	99% Ba	ndwidtl	n	2	6dB Ba	ndwidt	h	Power	r Limit	
Mode	N _{TX}	(MHz)	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	Chain- Port 1	Chain- Port 2	Chain- Port 3	Chain- Port 4	99% BW	26dB BW	
11a	3	5180	17.08	16.90	16.85		22.84	22.55	23.36		16.27	17.00	
11a	3	5200	17.13	16.90	16.85		23.71	22.78	22.38		16.27	17.00	
11a	3	5240	17.13	16.96	16.90		23.48	23.01	22.96		16.28	17.00	
VHT20	3	5180	18.12	18.12	18.00		24.00	23.77	23.59		16.55	17.00	
VHT20	3	5200	18.18	18.12	18.12		23.71	23.83	24.23		16.58	17.00	
VHT20	3	5240	18.23	18.12	18.06		24.35	24.12	24.06		16.57	17.00	
VHT40	3	5190	37.51	37.28	37.28		47.30	46.15	46.15		17.00	17.00	
VHT40	3	5230	37.28	37.28	37.28		48.35	47.19	46.84		17.00	17.00	
VHT80	75.95	76.18	76.18		97.39	93.91	97.16		17.00	17.00			
Resi	ult						Com	plied					

Report No.: FR370334AN



SPORTON INTERNATIONAL INC. Page No. : 24 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.3 RF Output Power

3.3.1 RF Output Power Limit

	Maximum Conducted Output Power Limit
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 50 mW or 4 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 17 - (G_{TX} - 6)$.
	For the 5.25-5.35 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
	For the 5.47-5.725 GHz band, the maximum conducted output power (P_{Out}) shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If G_{TX} > 6 dBi, then P_{Out} = 24 – (G_{TX} – 6).
	For the 5.725-5.825 GHz band:
	Point-to-multipoint systems (P2M): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 6$ dBi, then $P_{Out} = 30 - (G_{TX} - 6)$.
	Point-to-point systems (P2P): the maximum conducted output power (P_{Out}) shall not exceed the lesser of 1 W or 17 dBm + 10 log B, where B is the 26 dB emission bandwidth in MHz. If $G_{TX} > 23$ dBi, then $P_{Out} = 30 - (G_{TX} - 23)$.
LE-	LAN Devices
	For the 5.15-5.25 GHz band, the maximum e.i.r.p. shall not exceed 200 mW or 10 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	For the 5.25-5.35 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or 17 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the maximum e.i.r.p. shall not exceed 1.0 W or $17 + 10 \log B$, dBm, whichever power is less. B is the 99% emission bandwidth in MHz
	For the 5.725-5.825 GHz band, the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	Point-to-multipoint systems (P2M): the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz.
	Point-to-point systems (P2P): the maximum e.i.r.p. shall not exceed 4.0 W or 23 + 10 log B, dBm, whichever power is less. B is the 99% emission bandwidth in MHz. If e.i.r.p. > 36 dBm, G _{TX} ≤ P _{Out}
	t = maximum conducted output power in dBm, = the maximum transmitting antenna directional gain in dBi.

Report No.: FR370334AN

3.3.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

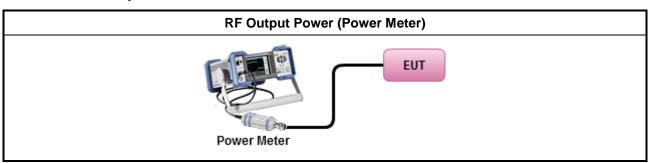
SPORTON INTERNATIONAL INC. Page No. : 25 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.3.3 Test Procedures

		Test Method
\boxtimes	Max	imum Conducted Output Power
		Refer as FCC KDB 789033 v01r03, clause E Method SA-1 (spectral trace averaging).
		Refer as FCC KDB 789033 v01r03, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
		Refer as FCC KDB 789033 v01r03, clause E Method SA-2 (spectral trace averaging).
		Refer as FCC KDB 789033 v01r03, clause E Method SA-2 Alt. (RMS detection with slow sweep speed) $$
	Wid	eband RF power meter and average over on/off periods with duty factor
	\boxtimes	Refer as FCC KDB 789033 v01r03, clause E Method PM-G (using a gated RF average power meter).
\boxtimes	For	conducted measurement.
		The EUT supports single transmit chain and measurements performed on this transmit chain.
		The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
		The EUT supports multiple transmit chains using options given below: Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
		If multiple transmit chains, EIRP calculation could be following as methods: $P_{total} = P_1 + P_2 + \ldots + P_n$ (calculated in linear unit [mW] and transfer to log unit [dBm]) $EIRP_{total} = P_{total} + DG$

Report No.: FR370334AN

3.3.4 Test Setup



SPORTON INTERNATIONAL INC. Page No. : 26 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



FCC Test Report No.: FR370334AN

3.3.5 Directional Gain for Power Measurement

Operating Mode		1											
	Directional Gain (DG) Result												
Transmit Chains No.		1	2	3	-								
Maximum G _{ANT} (dBi)		3	3	3	-								
Modulation Mode	DG (dBi)	N _{TX}	N _{ss}	STBC	Array Gain (dB)								
11a,6-54Mbps	3	3	1	-	-								
HT20,M0-23	3	3	1	-	-								
HT40,M0-23	3	3	1	-	-								
VHT20,M0-9	3	3	1	-	-								
VHT40,M0-9	3	3	1	-	-								
VHT80,M0-9	3	3	1	-	-								

Note 1: For CDD transmissions, directional gain is calculated as power measurements: Directional Gain (DG) = G_{ANT} + Array Gain, where Array Gain is as follows: Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \le 4$; Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX} ;

Operating Mode		2										
Directional Gain (DG) Result												
Transmit Chains No.		1	2	3	-							
Maximum G _{ANT} (dBi)		5.5	5.5	5.5	-							
Modulation Mode	DG (dBi)	N _{TX}	N _{ss}	STBC	Array Gain (dB)							
11a,6-54Mbps	5.5	3	1	-	-							
HT20,M0-23	5.5	3	1	-	-							
HT40,M0-23	5.5	3	1	-	-							
VHT20,M0-9	5.5	3	1	-	-							
VHT40,M0-9	5.5	3	1	-	-							
VHT80,M0-9	5.5	3	1	-	-							

Note 1: For CDD transmissions, directional gain is calculated as power measurements: Directional Gain (DG) = G_{ANT} + Array Gain, where Array Gain is as follows: Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \le 4$;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX};

SPORTON INTERNATIONAL INC. Page No. : 27 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Operating Mode		3											
	Directional Gain (DG) Result												
Transmit Chains No.	•	1	2	3	-								
Maximum G _{ANT} (dBi)		6	6	6	-								
Modulation Mode	DG (dBi)	N _{TX}	N _{ss}	STBC	Array Gain (dB)								
11a,6-54Mbps	6	3	1	-	-								
HT20,M0-23	6	3	1	-	-								
HT40,M0-23	6	3	1	-	-								
VHT20,M0-9	6	3	1	-	-								
VHT40,M0-9	6	3	1	-	-								
VHT80,M0-9	6	3	1	-	-								

Report No.: FR370334AN

Note 1: For CDD transmissions, directional gain is calculated as power measurements: Directional Gain (DG) = G_{ANT} + Array Gain, where Array Gain is as follows: Array Gain = 0 dB (i.e., no array gain) for $N_{TX} \le 4$; Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{TX} ;

SPORTON INTERNATIONAL INC. Page No. : 28 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



3.3.6 Test Result of Maximum Conducted Output Power

Operating	Mode)	1								
	М	aximum (Conduct	ted Out	out Pow	er (5150	-5250M	Hz band	1)		
Condi	tion		RF Output Power (dBm)								
Modulation Mode	N _{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Chain Port 3	Chain Port 4	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit
11a	3	5180	9.52	10.29	9.34		14.51	17.00	3.00	17.51	23.00
11a	3	5200	9.59	10.30	9.78		14.67	17.00	3.00	17.67	23.00
11a	3	5240	9.34	10.12	9.72		14.51	17.00	3.00	17.51	23.00
HT20	3	5180	9.65	10.60	9.65		14.76	17.00	3.00	17.76	23.00
HT20	3	5200	9.87	10.44	9.80		14.82	17.00	3.00	17.82	23.00
HT20	3	5240	9.76	10.46	10.01		14.86	17.00	3.00	17.86	23.00
HT40	3	5190	11.38	12.03	11.59		16.45	17.00	3.00	19.45	23.00
HT40	3	5230	11.41	12.00	11.78		16.51	17.00	3.00	19.51	23.00
VHT20	3	5180	9.88	10.68	9.75		14.89	17.00	3.00	17.89	23.00
VHT20	3	5200	9.95	10.69	10.01		15.00	17.00	3.00	18.00	23.00
VHT20	3	5240	9.88	10.61	9.98		14.94	17.00	3.00	17.94	23.00
VHT40	3	5190	11.42	12.06	11.66		16.49	17.00	3.00	19.49	23.00
VHT40	3	5230	11.46	12.08	11.86		16.58	17.00	3.00	19.58	23.00
VHT80	3	5210	11.48	11.89	11.52		16.41	17.00	3.00	19.41	23.00
Resu	ılt					C	Complie	d			

Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 29 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Operatino	g Mode	9	2										
	М	aximum	Conduct	Conducted Output Power (5150-5250MHz band)									
Condi	tion		RF Output Power (dBm)										
Modulation Mode	N _{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Chain Port 3	Chain Port 4	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit		
11a	3	5180	6.82	7.40	6.45		11.68	17.00	5.50	17.18	23.00		
11a	3	5200	6.81	7.41	6.94		11.83	17.00	5.50	17.33	23.00		
11a	3	5240	6.68	7.34	6.72		11.70	17.00	5.50	17.20	23.00		
HT20	3	5180	6.68	7.26	6.59		11.62	17.00	5.50	17.12	23.00		
HT20	3	5200	6.78	7.39	6.84		11.78	17.00	5.50	17.28	23.00		
HT20	3	5240	6.62	7.30	6.61		11.63	17.00	5.50	17.13	23.00		
HT40	3	5190	10.32	10.93	10.42		15.34	17.00	5.50	20.84	23.00		
HT40	3	5230	10.26	10.86	10.58		15.34	17.00	5.50	20.84	23.00		
VHT20	3	5180	6.73	7.30	6.62		11.66	17.00	5.50	17.16	23.00		
VHT20	3	5200	6.85	7.46	6.92		11.86	17.00	5.50	17.36	23.00		
VHT20	3	5240	6.62	7.32	6.67		11.65	17.00	5.50	17.15	23.00		
VHT40	3	5190	10.35	11.01	10.52		15.41	17.00	5.50	20.91	23.00		
VHT40	3	5230	10.34	11.03	10.62		15.44	17.00	5.50	20.94	23.00		
VHT80	3	5210	10.65	11.23	11.18		15.80	17.00	5.50	21.30	23.00		
Resu	ılt					C	omplie	d					

Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 30 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Operating Mode			3									
	М	aximum	Conducted Output Power (5150-5250MHz band)									
Condi	tion			RF Output Power (dBm)								
Modulation Mode	N _{TX}	Freq. (MHz)	Chain Port 1	Chain Port 2	Chain Port 3	Chain Port 4	Sum Chain	Power Limit	DG (dBi)	EIRP Power	EIRP Limit	
11a	3	5180	6.82	7.40	6.45		11.68	17.00	6.00	17.68	23.00	
11a	3	5200	6.81	7.41	6.94		11.83	17.00	6.00	17.83	23.00	
11a	3	5240	6.68	7.34	6.72		11.70	17.00	6.00	17.70	23.00	
HT20	3	5180	6.68	7.26	6.59		11.62	17.00	6.00	17.62	23.00	
HT20	3	5200	6.78	7.39	6.84		11.78	17.00	6.00	17.78	23.00	
HT20	3	5240	6.62	7.30	6.61		11.63	17.00	6.00	17.63	23.00	
HT40	3	5190	10.32	10.93	10.42		15.34	17.00	6.00	21.34	23.00	
HT40	3	5230	10.26	10.86	10.58		15.34	17.00	6.00	21.34	23.00	
VHT20	3	5180	6.73	7.30	6.62		11.66	17.00	6.00	17.66	23.00	
VHT20	3	5200	6.85	7.46	6.92		11.86	17.00	6.00	17.86	23.00	
VHT20	3	5240	6.62	7.32	6.67		11.65	17.00	6.00	17.65	23.00	
VHT40	3	5190	10.35	11.01	10.52		15.41	17.00	6.00	21.41	23.00	
VHT40	3	5230	10.34	11.03	10.62		15.44	17.00	6.00	21.44	23.00	
VHT80	3	5210	11.48	11.89	11.52		16.41	17.00	6.00	22.41	23.00	
Result			Complied									

Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 31 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.4 Peak Power Spectral Density

3.4.1 Peak Power Spectral Density Limit

	Peak Power Spectral Density Limit
UNI	I Devices
\boxtimes	For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) \leq 4 dBm/MHz. If $G_{TX} >$ 6 dBi, then PPSD = 4 - ($G_{TX} -$ 6).
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} >$ 6 dBi, then PPSD= 11 – ($G_{TX} -$ 6).
	For the 5.47-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 11 – ($G_{TX} - 6$).
	For the 5.725-5.825 GHz band:
	Point-to-multipoint systems (P2M): the peak power spectral density (PPSD) \leq 17 dBm/MHz. If $G_{TX} > 6$ dBi, then PPSD= 17 – ($G_{TX} - 6$).
	Point-to-point systems (P2P): the peak power spectral density (PPSD) \leq 17 dBm/MHz. If $G_{TX} > 23$ dBi, then PPSD = 17 – ($G_{TX} - 23$).
LE-	LAN Devices
\boxtimes	For the 5.15-5.25 GHz band, the peak power spectral density (PPSD) \leq 4 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) \leq 10 dBm/MHz.
	For the 5.25-5.35 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) \leq 17 dBm/MHz.
	For the 5.47-5.6 GHz band and 5.65-5.725 GHz band, the peak power spectral density (PPSD) \leq 11 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) \leq 17 dBm/MHz.
	For the 5.725-5.825 GHz band, the peak power spectral density (PPSD) \leq 17 dBm/MHz and the e.i.r.p. peak power spectral density (PPSD) \leq 23 dBm/MHz.
pow	SD = peak power spectral density that he same method as used to determine the conducted output ver shall be used to determine the power spectral density. And power spectral density in dBm/MHz = the maximum transmitting antenna directional gain in dBi.

Report No.: FR370334AN

3.4.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

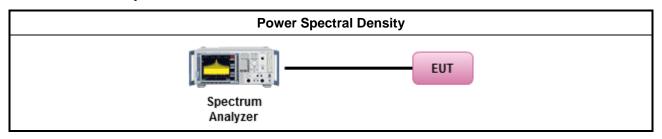
SPORTON INTERNATIONAL INC. Page No. : 32 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.4.3 Test Procedures

		Test Method
\boxtimes	outp func	c power spectral density procedures that the same method as used to determine the conducted ut power shall be used to determine the peak power spectral density and use the peak search tion on the spectrum analyzer to find the peak of the spectrum. For the peak power spectral density be measured using below options:
		Refer as FCC KDB 789033 v01r03, F)5) power spectral density can be measured using resolution bandwidths $<$ 1 MHz provided that the results are integrated over 1 MHz bandwidth
	\boxtimes	Refer as FCC KDB 789033 v01r03, clause E Method SA-1 (spectral trace averaging). For 11a / HT20
		Refer as FCC KDB 789033 v01r03, clause E Method SA-1 Alt. (RMS detection with slow sweep speed)
		Refer as FCC KDB 789033 v01r03, clause E Method SA-2 (spectral trace averaging).
		Refer as FCC KDB 789033 v01r03, clause E Method SA-2 Alt. (RMS detection with slow sweep speed) For HT40 / 11ac VHT80 mode
	Гои	
\boxtimes	FOL	conducted measurement.
	\sqsubseteq	The EUT supports single transmit chain and measurements performed on this transmit chain.
	Ш	The EUT supports diversity transmitting and the results on transmit chain port 1 is the worst case.
	\boxtimes	The EUT supports multiple transmit chains using options given below:
		Option 1: Measure and sum the spectra across the outputs. Refer as FCC KDB 662911, In-band power measurements. Using the measure-and-sum approach, measured all transmit ports individually. Sum the power (in linear power units e.g., mW) of all ports for each individual sample and save them.
		Option 2: Measure and add 10 log(N) dB, where N is the number of transmit chains. Refer as FCC KDB 662911, In-band power spectral density (PSD). Performed at each transmit chains and each transmit chains shall be compared with the limit have been reduced with 10 log(N). Or each transmit chains shall be add 10 log(N) to compared with the limit.
	\boxtimes	If multiple transmit chains, EIRP PPSD calculation could be following as methods: $ PPSD_{total} = PPSD_1 + PPSD_2 + \ldots + PPSD_n \\ (calculated in linear unit [mW] and transfer to log unit [dBm]) \\ EIRP_{total} = PPSD_{total} + DG $
	\boxtimes	Each individually PPSD plots refer as test report clause 3.3.5 with each individually PPSD plots.

Report No.: FR370334AN

3.4.4 Test Setup



SPORTON INTERNATIONAL INC. Page No. : 33 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



3.4.5 Directional Gain for Power Spectral Density Measurement

Operating Mode	1						
	Dire	ectional Gain (D	G) Result				
Transmit Chains No.	1	1	2	3	-		
Maximum G _{ANT} (dBi)	Maximum G _{ANT} (dBi)			3	-		
Modulation Mode	DG (dBi)	N _{TX}	N _{ss}	STBC	Array Gain (dB)		
11a,6-54Mbps	7.77	3	1	-	4.77		
HT20,M0-23	7.77	3	1	-	4.77		
HT40,M0-23	7.77	3	1	-	4.77		
VHT20,M0-9	7.77	3	1	-	4.77		
VHT40,M0-9	7.77	3	1	-	4.77		
VHT80,M0-9	7.77	3	1	-	4.77		
e 1: Directional Gain = G _{ANT} + Array Gain, Array gain = 10log(N _{AT} /N _{SS})dB							

Report No.: FR370334AN

Operating Mode	2								
Directional Gain (DG) Result									
Transmit Chains No.		1	2	3	-				
Maximum G _{ANT} (dBi)		5.5	5.5	5.5	-				
Modulation Mode DG (dBi)		N _{TX}	N _{SS}	STBC	Array Gain (dB)				
11a,6-54Mbps	10.27	3	1	-	4.77				
HT20,M0-23	10.27	3	1	-	4.77				
HT40,M0-23	10.27	3	1	-	4.77				
VHT20,M0-9	10.27	3	1	-	4.77				
VHT40,M0-9	10.27	3	1	-	4.77				
VHT80,M0-9 10.27		3	1	-	4.77				
Note 1: Directional Gain = G _{ANT} + Array Gain, Array gain = 10log(N _{AT} /N _{SS})dB									

SPORTON INTERNATIONAL INC. Page No. : 34 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



Operating Mode	3					
	Dire	ectional Gain (D	G) Result			
Transmit Chains No.		1	2	3	-	
Maximum G _{ANT} (dBi)	Maximum G _{ANT} (dBi)			6	-	
Modulation Mode	DG (dBi)	N _{TX}	N _{ss}	STBC	Array Gain (dB)	
11a,6-54Mbps	10.77	3	1	-	4.77	
HT20,M0-23	10.77	3	1	-	4.77	
HT40,M0-23	10.77	3	1	-	4.77	
VHT20,M0-9	10.77	3	1	-	4.77	
VHT40,M0-9	10.77	3	1	-	4.77	
VHT80,M0-9	10.77	3	1	-	4.77	

Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 35 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



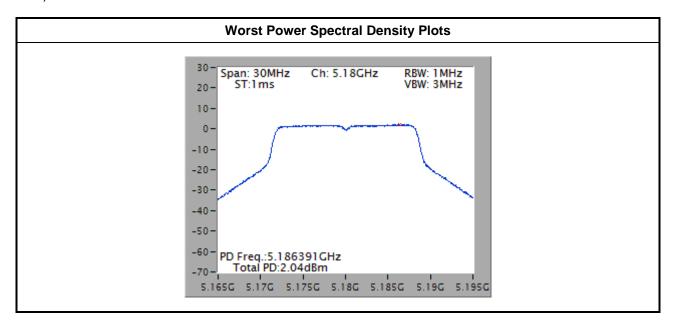
3.4.6 Test Result of Peak Power Spectral Density

Operatin	g Mode	9	1								
	Peak Power Spectral Density Result (5150-5250MHz band)										
Cond	ition		Peak Power Spectral Density (dBm/MHz)								
Modulation Mode	N _{TX}	Freq. (MHz)	Sum Chain	PSD Limit	DG (dBi)	EIRP PSD	EIRP Limit				
11a	3	5180	2.04	2.23	7.77	9.81	10.00				
11a	3	5200	1.68	2.23	7.77	9.45	10.00				
11a	3	5240	1.71	2.23	7.77	9.48	10.00				
VHT20	3	5180	1.58	2.23	7.77	9.35	10.00				
VHT20	3	5200	1.66	2.23	7.77	9.43	10.00				
VHT20	3	5240	1.91	2.23	7.77	9.68	10.00				
VHT40	3	5190	0.37	2.23	7.77	8.14	10.00				
VHT40	3	5230	0.35	2.23	7.77	8.12	10.00				
VHT80	3	5210	-3.56	2.23	7.77	4.21	10.00				
Res	ult		Complied								

Report No.: FR370334AN

Note 1: PSD = sum each transmit chains by bin-to-bin PSD

Note 2: Directional gain = 3 + 10 * log(3/1) = 7.77 dBi > 6dBi, limit shall be reduced to 4 dBm - (7.77 dBi - 6dBi) = 2.23 dBm

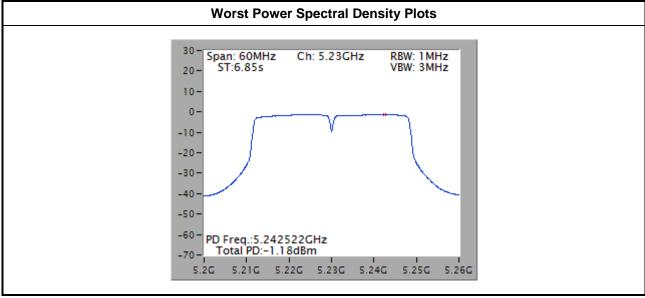


SPORTON INTERNATIONAL INC. Page No. : 36 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

Operatin	g Mod	Э	2							
	Pe	eak Powe	r Spectral Density Result (5150-5250MHz band)							
Cond	ition			Peak Power S	Spectral Densi	ity (dBm/MHz)				
Modulation Mode	N _{TX}	Freq. (MHz)	Sum Chain	PSD Limit	DG (dBi)	EIRP PSD	EIRP Limit			
11a	3	5180	-1.07	-0.27	10.27	9.20	10.00			
11a	3	5200	-1.09	-0.27	10.27	9.18	10.00			
11a	3	5240	-1.18	-0.27	10.27	9.09	10.00			
VHT20	3	5180	-1.50	-0.27	10.27	8.77	10.00			
VHT20	3	5200	-1.49	-0.27	10.27	8.78	10.00			
VHT20	3	5240	-1.33	-0.27	10.27	8.94	10.00			
VHT40	3	5190	-1.15	-0.27	10.27	9.12	10.00			
VHT40	3	5230	-1.00	-0.27	10.27	9.27	10.00			
VHT80	3	5210	-3.96	-0.27	10.27	6.31	10.00			
Result			Complied							

Note 1: PSD = sum each transmit chains by bin-to-bin PSD

Note 2: Directional gain = 5.5 + 10 * log(3/1) = 10.27 dBi > 6dBi, limit shall be reduced to 4 dBm - (10.27 dBi - 6dBi) = -0.27 dBm



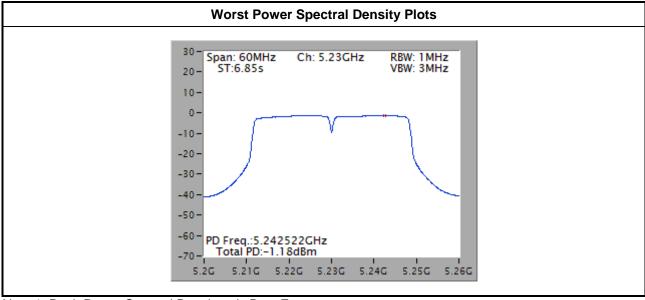
Note 1: Peak Power Spectral Density w/o Duty Factor.

SPORTON INTERNATIONAL INC. Page No. : 37 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

Operating	Operating Mode			3						
	Pe	eak Powe	r Spectral Der	nsity Result (5	150-5250MHz	band)				
Condi	tion		Peak Power Spectral Density (dBm/MHz)							
Modulation Mode	N _{TX}	Freq. (MHz)	Sum Chain	PSD Limit	DG (dBi)	EIRP PSD	EIRP Limit			
11a	3	5180	-1.07	-0.77	10.77	9.70	10.00			
11a	3	5200	-1.09	-0.77	10.77	9.68	10.00			
11a	3	5240	-1.18	-0.77	10.77	9.59	10.00			
VHT20	3	5180	-1.50	-0.77	10.77	9.27	10.00			
VHT20	3	5200	-1.49	-0.77	10.77	9.28	10.00			
VHT20	3	5240	-1.33	-0.77	10.77	9.44	10.00			
VHT40	3	5190	-1.15	-0.77	10.77	9.62	10.00			
VHT40	3	5230	-1.00	-0.77	10.77	9.77	10.00			
VHT80	3	5210	-3.56	-0.77	10.77	7.21	10.00			
Res	ult		Complied							

Note 1: PSD = sum each transmit chains by bin-to-bin PSD

Note 2: Directional gain = 6 + 10 * log(3/1) = 10.77 dBi > 6dBi, limit shall be reduced to 4 dBm - (10.77 dBi - 6dBi) = -0.77 dBm



Note 1: Peak Power Spectral Density w/o Duty Factor.

SPORTON INTERNATIONAL INC. Page No. : 38 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.5 Peak Excursion

3.5.1 Peak Excursion Limit

Peak Excursion Limit UNII Devices □ Peak excursion ≤ 13 dB. The ratio of the maximum of the peak-max-hold spectrum to the maximum of the average spectrum for continuous transmission does not exceed 13 dB. (Earlier procedures that required computing the ratio of the two spectra at each frequency across the emission bandwidth can lead to unintended failures at band edges and will no longer be required.) LE-LAN Devices □ N/A

Report No.: FR370334AN

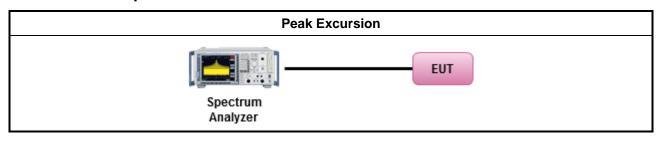
3.5.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.5.3 Test Procedures

	Test Method								
\boxtimes	Refer as FCC KDB 789033 v01r03, clause G peak excursion method.								
\boxtimes	Testing each modulation mode on a single channel is sufficient to demonstrate compliance with the peak excursion requirement								
\boxtimes	For	conducted measurement.							
	\boxtimes	Testing a single output port is sufficient to demonstrate compliance with the peak excursion.							
		Test result plots refer as test report clause 3.3.5 with peak excursion ratio of the maximum of the peak-max-hold spectrum to the maximum of the average spectrum.							

3.5.4 Test Setup

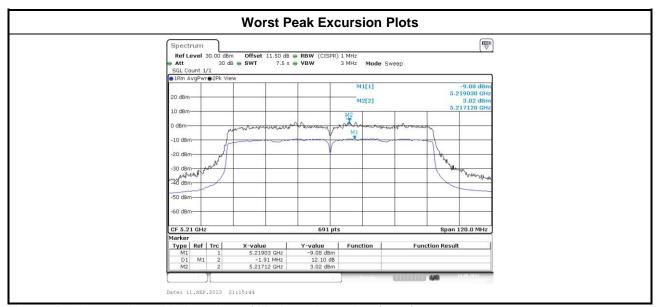


SPORTON INTERNATIONAL INC. Page No. : 39 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.5.5 Test Result of Peak Excursion

Operatin	g Mod	е	1							
			UNII P	eak Excurs	ion Result					
Cond	ition		Peak Excursion (dB)							
Modulation Mode	N _{TX}	Freq. (MHz)	BPSK	BPSK QPSK 16QAM 64QAM 256QAM Limit						
11a	3	5200	7.70	8.72	9.38	9.34	-	13.0		
VHT20	3	5200	7.87	8.75	9.01	9.37	9.14	13.0		
VHT40	3	5230	9.01	9.28	9.09	8.87	8.67	13.0		
VHT80	3	5210	9.17	9.17 10.16 10.68 8.90 8.98 13.0						
Res	ult				Com	plied				

Report No.: FR370334AN



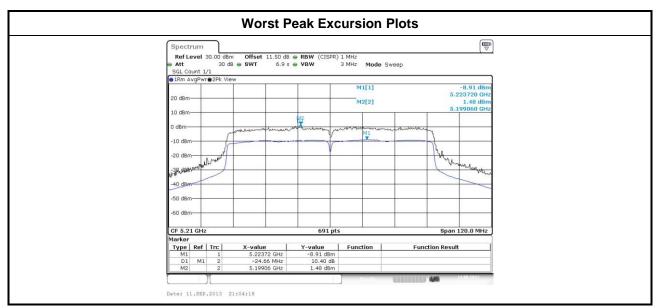
Note 1: Peak excursion = Mark2 value – (Mark 1 value + duty factor)

SPORTON INTERNATIONAL INC. Page No. : 40 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

Operatin	g Mod	le	2											
	UNII Peak Excursion Result													
Condi	tion			Peak Excursion (dB)										
Modulation Mode	N _{TX}	Freq. (MHz)	BPSK	BPSK QPSK 16QAM 64QAM 256QAM Limit										
11a	3	5200	7.65	8.95	8.87	8.99	-	13.0						
VHT20	3	5200	7.62	8.65	9.09	9.16	9.38	13.0						
VHT40	3	5230	7.96	8.05	8.34	8.87	8.53	13.0						
VHT80	3	5210	9.96	9.96 9.65 9.77 8.29 8.43 13.0										
Res	ult				Com	plied		Complied						

: 41 of 109

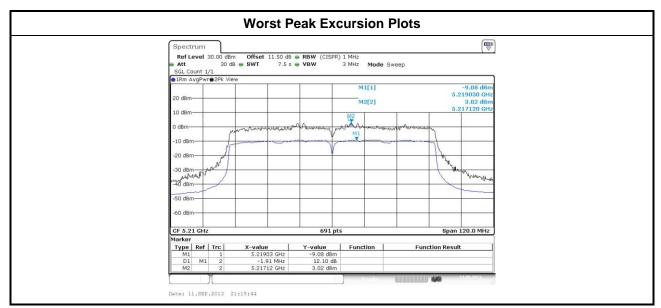
: Rev. 02



Note 1: Peak excursion = Mark2 value – (Mark 1 value + duty factor)

SPORTON INTERNATIONAL INC. Page No.
TEL: 886-3-3273456 Report Version

Operatin	g Mod	le	3								
UNII Peak Excursion Result											
Cond	ition		Peak Excursion (dB)								
Modulation Mode	N _{TX}	Freq. (MHz)	BPSK	BPSK QPSK 16QAM 64QAM 256QAM I							
11a	3	5200	7.65	8.95	8.87	8.99	-	13.0			
VHT20	3	5200	7.62	8.65	9.09	9.16	9.38	13.0			
VHT40	3	5230	7.96	8.05	8.34	8.87	8.53	13.0			
VHT80	3	5210	9.17	9.17 10.16 10.68 8.90 8.98 13.0							
Res	ult				Com	plied					



Note 1: Peak excursion = Mark2 value – (Mark 1 value + duty factor)

SPORTON INTERNATIONAL INC. Page No. : 42 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



3.6 Transmitter Radiated Unwanted Emissions and Band Edge

3.6.1 Transmitter Radiated Unwanted Emissions and Band Edge Limit

Unwanted emissions below 1 GHz and restricted band emissions above 1GHz limit										
Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)							
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300							
0.490~1.705	24000/F(kHz)	33.8 - 23	30							
1.705~30.0	30	29	30							
30~88	100	40	3							
88~216	150	43.5	3							
216~960	200	46	3							
Above 960	500	54	3							

Report No.: FR370334AN

Note 1: Test distance for frequencies at or above 30 MHz, measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

Note 2: Test distance for frequencies at below 30 MHz, measurements may be performed at a distance closer than the EUT limit distance; however, an attempt should be made to avoid making measurements in the near field. When performing measurements below 30 MHz at a closer distance than the limit distance, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two or more distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). The test report shall specify the extrapolation method used to determine compliance of the EUT.

Un-restricted band emissions above 1GHz Limit							
Operating Band	Limit						
5.15 - 5.25 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]						
5.25 - 5.35 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]						
5.47 - 5.725 GHz	e.i.r.p27 dBm [68.2 dBuV/m@3m]						
5.725 - 5.825 GHz	5.715 5.725 GHz: e.i.r.p17 dBm [78.2 dBuV/m@3m] 5.825 5.835 GHz: e.i.r.p17 dBm [78.2 dBuV/m@3m] Other un-restricted band: e.i.r.p27 dBm [68.2 dBuV/m@3m]						

Note 1: Measurements may be performed at a distance other than the limit distance provided they are not performed in the near field and the emissions to be measured can be detected by the measurement equipment. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear distance for field-strength measurements, inverse of linear distance-squared for power-density measurements).

3.6.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

SPORTON INTERNATIONAL INC. Page No. : 43 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



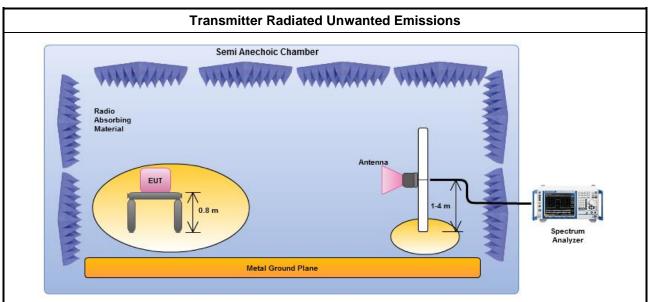
3.6.3 Test Procedures

		Test Method
	performance in the education of the educ	surements may be performed at a distance other than the limit distance provided they are not ormed in the near field and the emissions to be measured can be detected by the measurement pment. Measurements shall not be performed at a distance greater than 30 m for frequencies we 30 MHz, unless it can be further demonstrated that measurements at a distance of 30 m or less impractical. When performing measurements at a distance other than that specified, the results shall attrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse of linear ance for field-strength measurements, inverse of linear distance-squared for power-density surements).
		Measurements in the frequency range 5 GHz - 10GHz are typically made at a closer distance 3m, because the instrumentation noise floor is typically close to the radiated emission limit.
		Measurements in the frequency range 10 GHz - 18GHz are typically made at a closer distance 1m, because the instrumentation noise floor is typically close to the radiated emission limit.
		Measurements in the frequency range above 18 GHz - 40GHz are typically made at a closer distance 0.5m, because the instrumentation noise floor is typically close to the radiated emission limit.
\boxtimes	The	average emission levels shall be measured in [duty cycle ≥ 98 or duty factor].
\boxtimes	For	the transmitter unwanted emissions shall be measured using following options below:
	\boxtimes	Refer as FCC KDB 789033 v01r03, clause H)2) for unwanted emissions into non-restricted bands.
	\boxtimes	Refer as FCC KDB 789033 v01r03, clause H)1) for unwanted emissions into restricted bands.
		Refer as FCC KDB 789033 v01r03, H)6) Method AD (Trace Averaging).
		Refer as FCC KDB 789033 v01r03, H)6) Method VB (Reduced VBW).
		Refer as ANSI C63.10, clause 4.2.3.2.3 (Reduced VBW). VBW ≥ 1/T, where T is pulse time.
		Refer as ANSI C63.10, clause 4.2.3.2.4 average value of pulsed emissions.
		Refer as FCC KDB 789033 v01r03, clause H)5) measurement procedure peak limit.
		Refer as ANSI C63.10, clause 4.2.3.2.2 measurement procedure peak limit.
\boxtimes	For	radiated measurement.
	\boxtimes	Refer as ANSI C63.10, clause 6.4 for radiated emissions from below 30 MHz.
	\boxtimes	Refer as ANSI C63.10, clause 6.5 for radiated emissions from 30 MHz to 1000 MHz.
	\boxtimes	Refer as ANSI C63.10, clause 6.6 for radiated emissions from above 1 GHz.
_	_	Test Method
Ш	For	conducted and cabinet radiation measurement, refer as FCC KDB 789033 v01r03, clause H)3).
		For conducted unwanted emissions into non-restricted bands (relative emission limits). Devices with multiple transmit chains: Refer as FCC KDB 662911, when testing out-of-band and spurious emissions against relative emission limits, tests may be performed on each output individually without summing or adding 10 log(N) if the measurements are made relative to the in-band emissions on the individual outputs.
		For conducted unwanted emissions into restricted bands (absolute emission limits). Devices with multiple transmit chains using options given below: (1) Measure and sum the spectra across the outputs or (2) Measure and add 10 log(N) dB

Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 44 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.6.4 Test Setup



Report No.: FR370334AN

Magnetic field tests shall be performed in the frequency range of 9 kHz to 30 MHz using a calibrated loop antenna. Electric field tests shall be performed in the frequency range of 30 MHz to 1000 MHz using a calibrated bi-log antenna and the frequency range of 1 GHz to 40 GHz using a calibrated horn antenna.

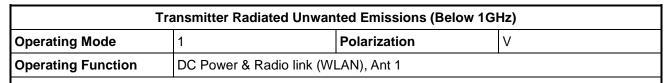
Note: The test distance is 3m.

3.6.5 Transmitter Radiated Unwanted Emissions (Below 30MHz)

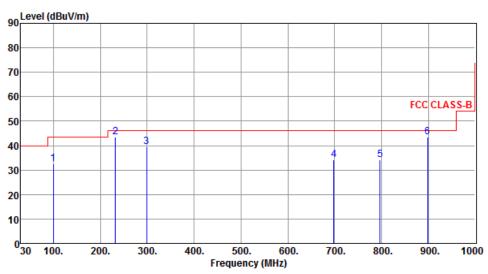
All amplitude of spurious emissions that are attenuated by more than 20 dB below the permissible value has no need to be reported.

SPORTON INTERNATIONAL INC. Page No. : 45 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.6.6 Transmitter Radiated Unwanted Emissions (Below 1GHz)



Report No.: FR370334AN



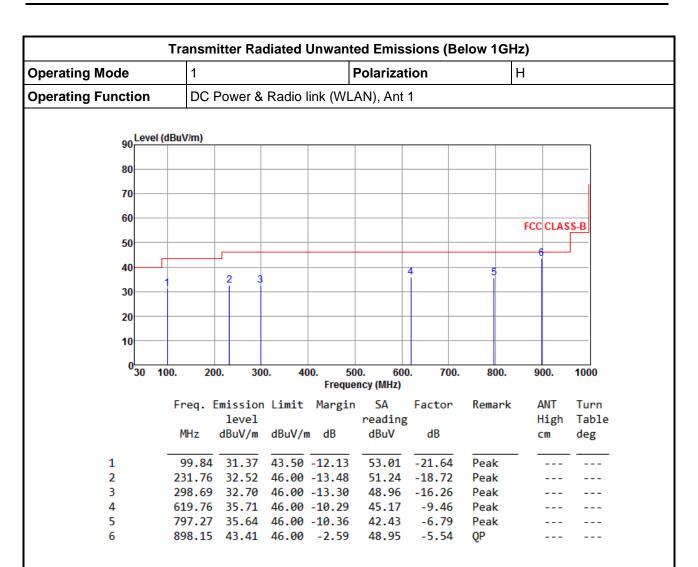
	Freq. MHz	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	99.84	32.55	43.50	-10.95	54.19	-21.64	Peak		
2			46.00			-18.72	QP		
3	298.69	39.39	46.00	-6.61	55.65	-16.26	Peak		
4	698.33	34.08	46.00	-11.92	42.35	-8.27	Peak		
5	797.27	34.35	46.00	-11.65	41.14	-6.79	Peak		
6	898.15	43.50	46.00	-2.50	49.04	-5.54	QP		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

SPORTON INTERNATIONAL INC. Page No. : 46 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

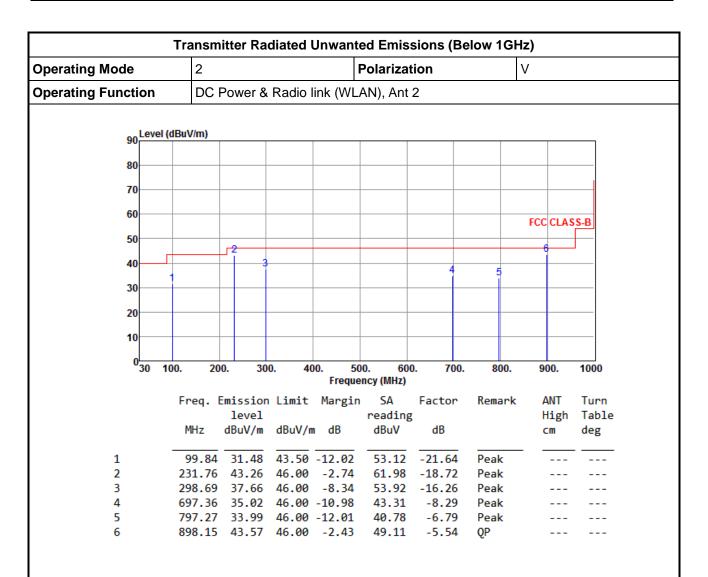


Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

SPORTON INTERNATIONAL INC. Page No. : 47 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



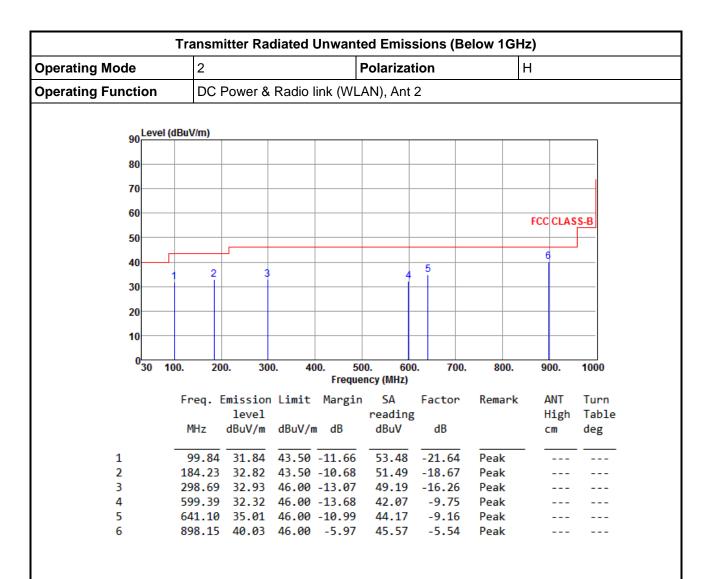
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

SPORTON INTERNATIONAL INC. Page No. : 48 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

FCC Test Report Report No.: FR370334AN

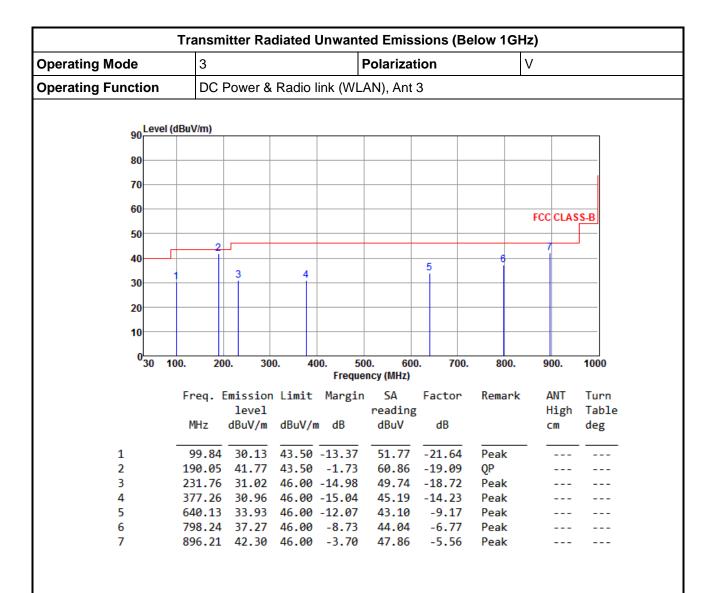


Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

SPORTON INTERNATIONAL INC. Page No. : 49 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

SPORTON INTERNATIONAL INC. Page No. : 50 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

FCC Test Report

98.87

190.05

499.48

641.10

797.27

1

2

3

4

5

6

29.46

33.42

29.52

34.66

898.15 34.76 46.00 -11.24

43.50 -14.04

43.50 -10.08

46.00 -16.48

46.00 -11.34

33.06 46.00 -12.94

Transmitter Radiated Unwanted Emissions (Below 1GHz) Н **Operating Mode Polarization Operating Function** DC Power & Radio link (WLAN), Ant 3 90 Level (dBuV/m) 80 70 60 FCC CLASS-B 50 40 30 20 10 100. 200. 300. 400. 500. 600. 700. 800. 900. 1000 Frequency (MHz) Freq. Emission Limit Margin SA Factor ANT Turn Remark reading High Table level dBuV MHz dBuV/m dBuV/m dB dΒ deg cm

-21.77

-19.09

-11.69

-9.16

-6.79

-5.54

Peak

Peak

Peak

Peak

Peak

Peak

51.23

52.51

41.21

43.82

39.85

40.30

Report No.: FR370334AN

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

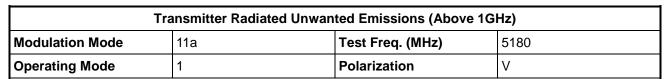
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

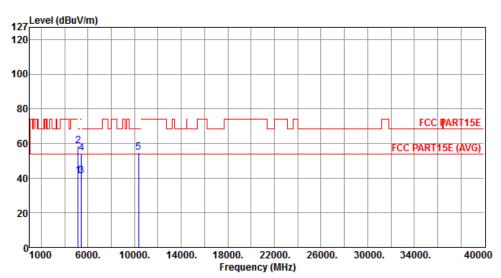
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

SPORTON INTERNATIONAL INC. Page No. : 51 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

FCC Test Report No.: FR370334AN

3.6.7 Transmitter Radiated Unwanted Emissions (Above 1GHz) for 11a





	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	41.37	54.00	-12.63	36.43	4.94	Average		
2	5150.00	58.35	74.00	-15.65	53.41	4.94	Peak		
3	5427.00	41.29	54.00	-12.71	36.15	5.14	Average		
4	5427.00	54.33	74.00	-19.67	49.19	5.14	Peak		
5	10360.00	54.96	68.30	-13.34	40.25	14.71	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 52 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

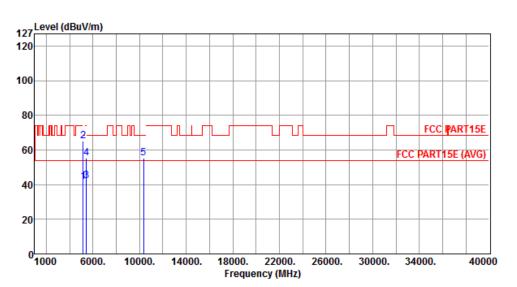
FCC Test Report

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode 11a Test Freq. (MHz) 5180

Operating Mode 1 Polarization H

Report No.: FR370334AN



	Freq. I	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	41.67	54.00	-12.33	36.73	4.94	Average		
2	5150.00	65.18	74.00	-8.82	60.24	4.94	Peak		
3	5427.00	42.09	54.00	-11.91	36.95	5.14	Average		
4	5427.00	55.09	74.00	-18.91	49.95	5.14	Peak		
5	10360.00	55.29	68.30 -	-13.01	40.58	14.71	Peak		

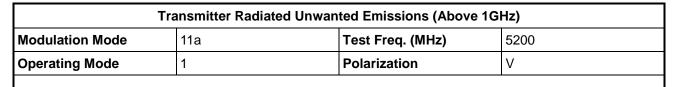
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

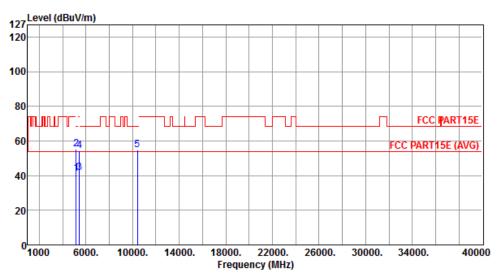
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 53 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	41.17	54.00	-12.83	36.23	4.94	Average		
2	5150.00	55.15	74.00	-18.85	50.21	4.94	Peak		
3	5427.00	41.52	54.00	-12.48	36.38	5.14	Average		
4	5427.00	54.52	74.00	-19.48	49.38	5.14	Peak		
5	10400.00	54.97	68.30	-13.33	40.22	14.75	Peak		

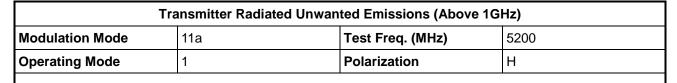
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

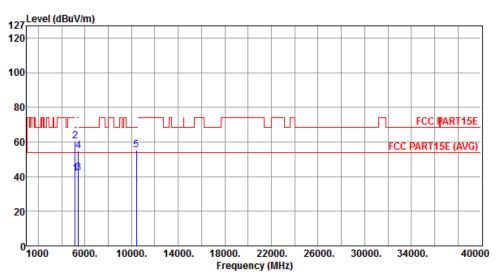
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 54 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. MHz	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	41.78	54.00	-12.22	36.84	4.94	Average		
2	5150.00	60.41	74.00	-13.59	55.47	4.94	Peak		
3	5427.00	41.98	54.00	-12.02	36.84	5.14	Average		
4	5427.00	54.73	74.00	-19.27	49.59	5.14	Peak		
5	10400.00	55.14	68.30	-13.16	40.39	14.75	Peak		

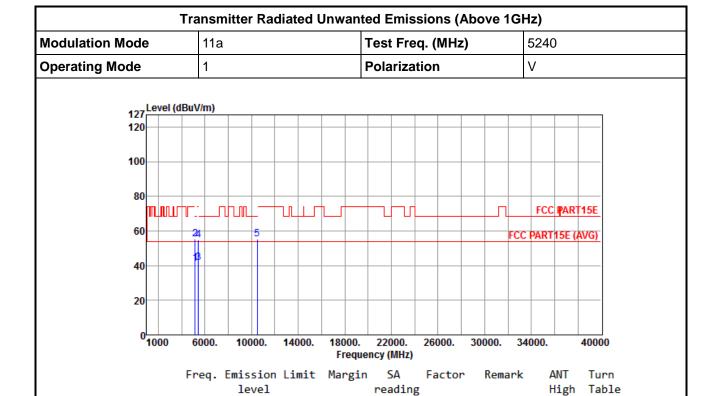
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 55 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



	MHZ	dBuV/m	aBuV/m aB	aBuv	ав		cm	aeg
1	5150.00	41.21	54.00 -12.79	36.27	4.94	Average		
2	5150.00	55.23	74.00 -18.77	50.29	4.94	Peak		
3	5427.00	41.59	54.00 -12.41	36.45	5.14	Average		
4	5427.00	54.62	74.00 -19.38	49.48	5.14	Peak		
5	10480.00	55.10	68.30 -13.20	40.26	14.84	Peak		

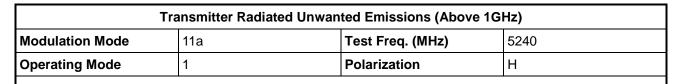
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

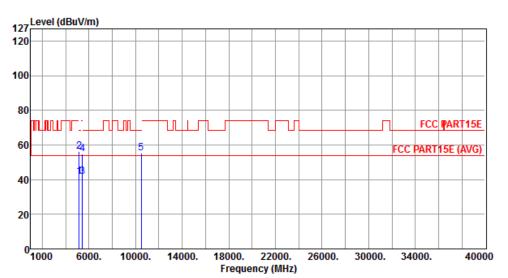
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 56 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. 6	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	41.75	54.00	-12.25	36.81	4.94	Average		
2		56.19			51.25	4.94	Peak		
3	5427.00	41.81	54.00	-12.19	36.67	5.14	Average		
4	5427.00	55.02	74.00	-18.98	49.88	5.14	Peak		
5	10480.00	55.35	68.30	-12.95	40.51	14.84	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

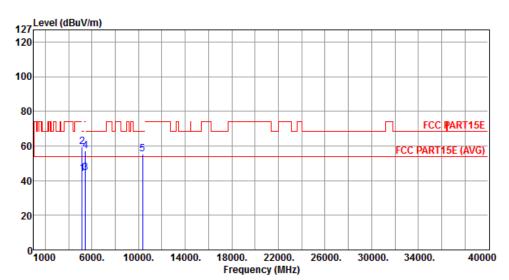
SPORTON INTERNATIONAL INC. Page No. : 57 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode 11a Test Freq. (MHz) 5180

Operating Mode 2 Polarization V

Report No.: FR370334AN



	Freq. 6 MHz	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	43.87	54.00	-10.13	38.93	4.94	Average		
2		59.60			54.66	4.94	Peak		
3	5427.00	44.43	54.00	-9.57	39.29	5.14	Average		
4	5427.00	57.20	74.00	-16.80	52.06	5.14	Peak		
5	10360.00	55.12	68.30	-13.18	40.41	14.71	Peak		

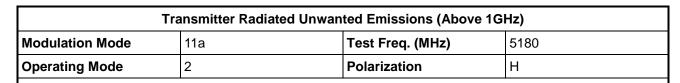
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

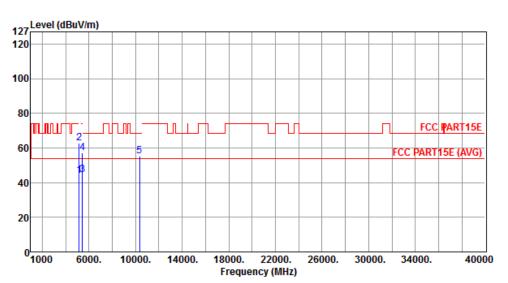
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 58 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	44.02	54.00	-9.98	39.08	4.94	Average		
2	5150.00	62.70	74.00	-11.30	57.76	4.94	Peak		
3	5427.00	44.54	54.00	-9.46	39.40	5.14	Average		
4	5427.00	57.29	74.00	-16.71	52.15	5.14	Peak		
5	10360.00	55.23	68.30	-13.07	40.52	14.71	Peak		

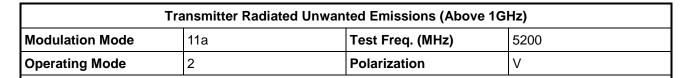
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

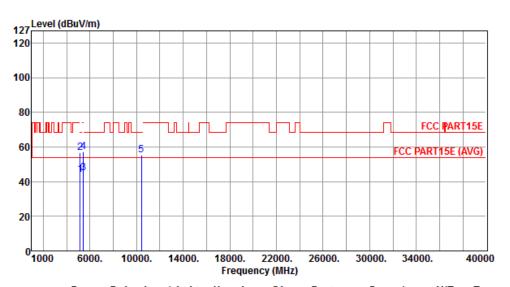
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 59 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	44.26	54.00	-9.74	39.32	4.94	Average		
2	5150.00	56.48	74.00	-17.52	51.54	4.94	Peak		
3	5427.00	44.76	54.00	-9.24	39.62	5.14	Average		
4	5427.00	57.41	74.00	-16.59	52.27	5.14	Peak		
5	10400.00	55.17	68.30	-13.13	40.42	14.75	Peak		

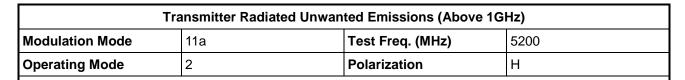
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

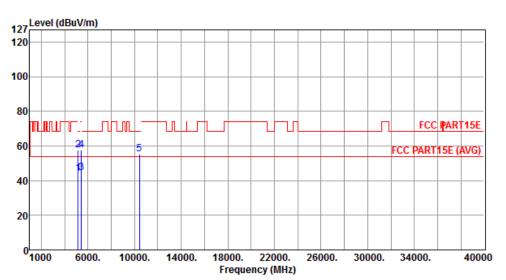
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 60 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. 6 MHz	mission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	43.96	54.00	-10.04	39.02	4.94	Average		
2		57.85			52.91	4.94	Peak		
3	5427.00	44.48	54.00	-9.52	39.34	5.14	Average		
4	5427.00	57.81	74.00	-16.19	52.67	5.14	Peak		
5	10400.00	55.28	68.30	-13.02	40.53	14.75	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 61 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

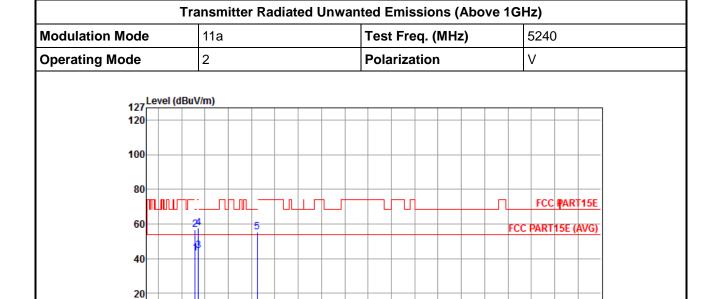
⁰1000

6000.

10000.

14000.

Report No.: FR370334AN



	Freq. 6	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	43.11	54.00	-10.89	38.17	4.94	Average		
2	5150.00	56.89	74.00	-17.11	51.95	4.94	Peak		
3	5427.00	44.54	54.00	-9.46	39.40	5.14	Average		
4	5427.00	57.53	74.00	-16.47	52.39	5.14	Peak		
5	10480.00	55.17	68.30	-13.13	40.33	14.84	Peak		

Frequency (MHz)

22000.

26000.

30000.

34000.

40000

18000.

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

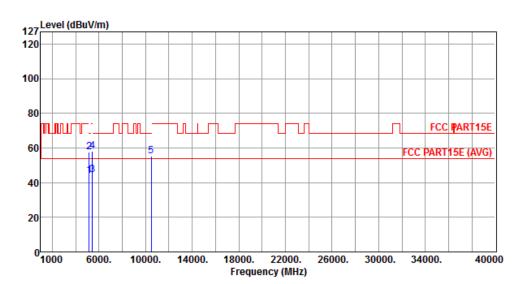
SPORTON INTERNATIONAL INC. Page No. : 62 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode 11a Test Freq. (MHz) 5240

Operating Mode 2 Polarization H

Report No.: FR370334AN



	Freq.	level	Limit	Margin	reading		Kemark	ANI High	Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	43.85	54.00	-10.15	38.91	4.94	Average		
2	5150.00	57.45	74.00 -	-16.55	52.51	4.94	Peak		
3	5427.00	44.63	54.00	-9.37	39.49	5.14	Average		
4	5427.00	58.23	74.00 -	-15.77	53.09	5.14	Peak		
5	10480.00	55.40	68 30 -	-12 90	40 56	14 84	Peak		

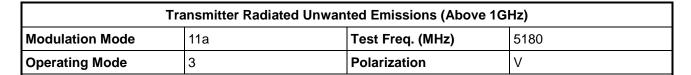
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

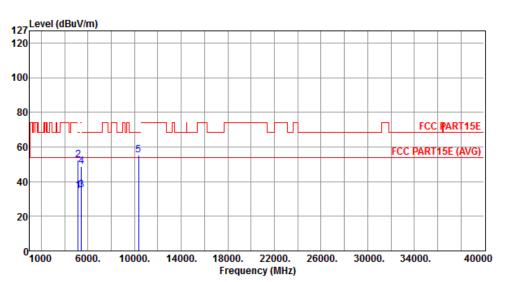
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 63 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	34.77	54.00	-19.23	29.83	4.94	Average		
2	5150.00	52.57	74.00	-21.43	47.63	4.94	Peak		
3	5427.00	35.12	54.00	-18.88	29.98	5.14	Average		
4	5427.00	48.96	74.00	-25.04	43.82	5.14	Peak		
5	10360.00	55.22	68.30	-13.08	40.51	14.71	Peak		

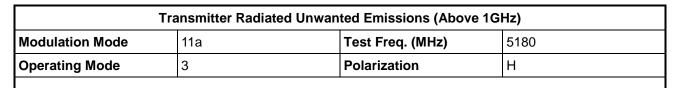
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

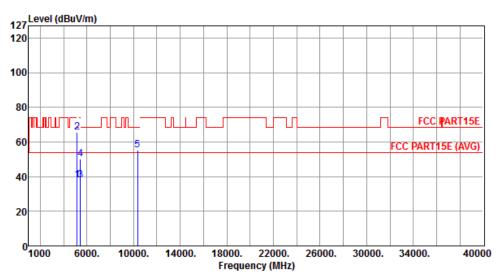
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 64 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	37.93	54.00	-16.07	32.99	4.94	Average		
2	5150.00	65.61	74.00	-8.39	60.67	4.94	Peak		
3	5427.00	37.78	54.00	-16.22	32.64	5.14	Average		
4	5427.00	50.32	74.00	-23.68	45.18	5.14	Peak		
5	10360.00	55.39	68.30	-12.91	40.68	14.71	Peak		

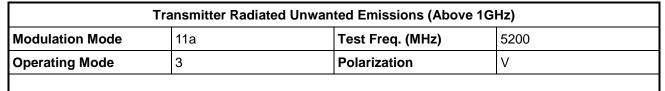
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

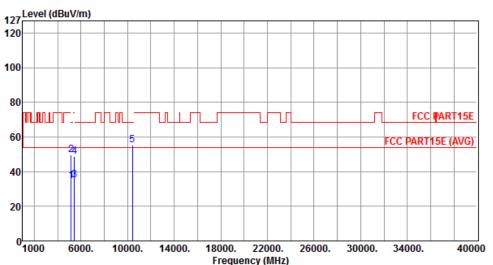
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 65 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	34.90	54.00	-19.10	29.96	4.94	Average		
2	5150.00	49.76	74.00	-24.24	44.82	4.94	Peak		
3	5427.00	35.29	54.00	-18.71	30.15	5.14	Average		
4	5427.00	48.90	74.00	-25.10	43.76	5.14	Peak		
5	10400.00	55.13	68.30	-13.17	40.38	14.75	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 66 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

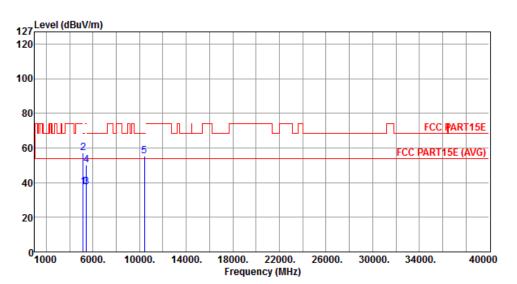
FCC Test Report

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode 11a Test Freq. (MHz) 5200

Operating Mode 3 Polarization H

Report No.: FR370334AN



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	37.47	54.00	-16.53	32.53	4.94	Average		
2	5150.00	57.32	74.00	-16.68	52.38	4.94	Peak		
3	5427.00	37.53	54.00	-16.47	32.39	5.14	Average		
4	5427.00	50.21	74.00	-23.79	45.07	5.14	Peak		
5	10400.00	55.27	68.30	-13.03	40.52	14.75	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

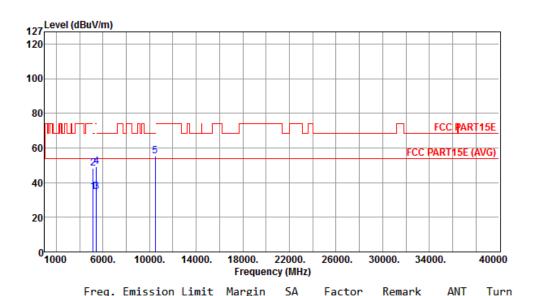
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 67 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

Transmitter Radiated Unwanted Emissions (Above 1GHz) Test Freq. (MHz) **Modulation Mode** 11a 5240 3 ٧ **Operating Mode Polarization**

Report No.: FR370334AN



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	34.91	54.00	-19.09	29.97	4.94	Average		
2	5150.00	48.49	74.00	-25.51	43.55	4.94	Peak		
3	5427.00	34.77	54.00	-19.23	29.63	5.14	Average		
4	5427.00	49.35	74.00	-24.65	44.21	5.14	Peak		
5	10480.00	55.10	68.30	-13.20	40.26	14.84	Peak		

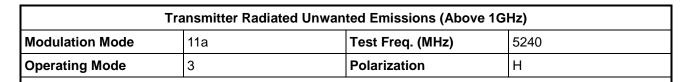
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

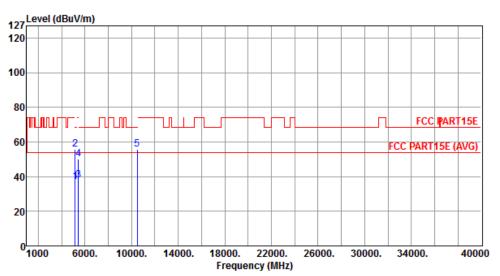
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 68 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





		Emission level dBuV/m	Limit dBuV/m		SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	37.19	54.00	-16.81	32.25	4.94	Average		
2	5150.00	55.59	74.00	-18.41	50.65	4.94	Peak		
3	5427.00	38.01	54.00	-15.99	32.87	5.14	Average		
4	5427.00	50.17	74.00	-23.83	45.03	5.14	Peak		
5	10480.00	55.63	68.30	-12.67	40.79	14.84	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

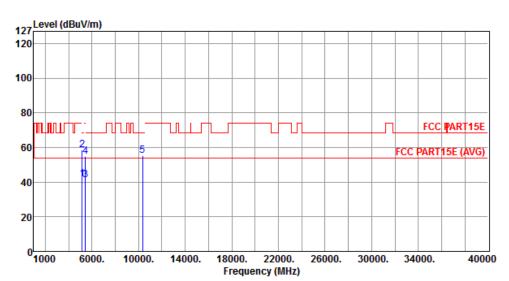
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 69 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

3.6.8 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT20

Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	VHT20	Test Freq. (MHz)	5180						
Operating Mode	1	Polarization	V						

Report No.: FR370334AN



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	41.52	54.00	-12.48	36.58	4.94	Average		
2	5150.00	58.41	74.00	-15.59	53.47	4.94	Peak		
3	5427.00	41.38	54.00	-12.62	36.24	5.14	Average		
4	5427.00	54.62	74.00	-19.38	49.48	5.14	Peak		
5	10360.00	55.10	68.30	-13.20	40.39	14.71	Peak		

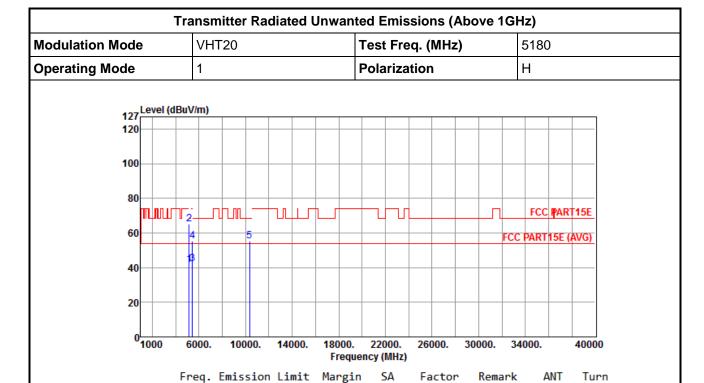
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 70 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



		TeveT		reading		High		
	MHz	dBuV/m	dBuV/m dB	dBuV	dB		cm	deg
1	5150.00	41.82	54.00 -12.18	36.88	4.94	Average		
2	5150.00	65.27	74.00 -8.73	60.33	4.94	Peak		
3	5427.00	42.32	54.00 -11.68	37.18	5.14	Average		
4	5427.00	55.35	74.00 -18.65	50.21	5.14	Peak		
5	10360.00	55.42	68.30 -12.88	40.71	14.71	Peak		

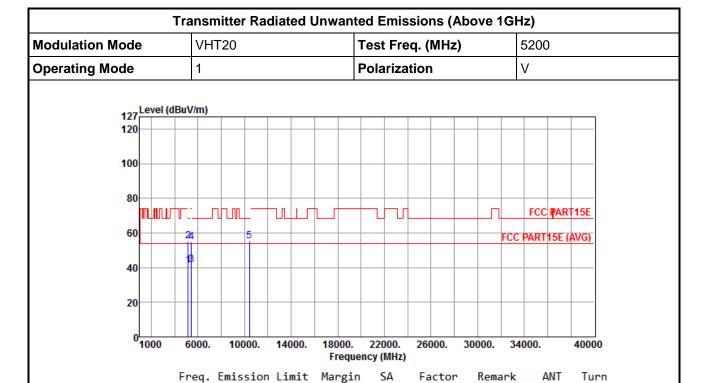
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 71 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



	level			reading				Table
	MHz	dBuV/m	dBuV/m dB	dBuV	dB		cm	deg
1	5150.00	41.26	54.00 -12.74	36.32	4.94	Average		
2	5150.00	55.26	74.00 -18.74	50.32	4.94	Peak		
3	5427.00	41.66	54.00 -12.34	36.52	5.14	Average		
4	5427.00	54.63	74.00 -19.37	49.49	5.14	Peak		
5	10400.00	55.30	68.30 -13.00	40.55	14.75	Peak		

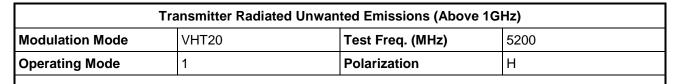
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

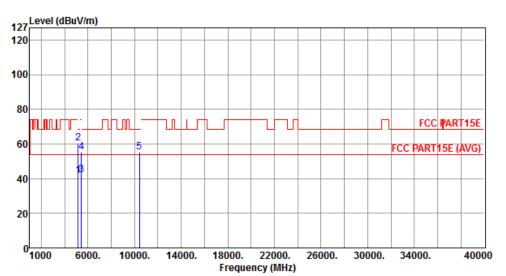
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 72 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. MHz	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	41.88	54.00	-12.12	36.94	4.94	Average		
2	5150.00	60.57	74.00	-13.43	55.63	4.94	Peak		
3	5427.00	42.25	54.00	-11.75	37.11	5.14	Average		
4	5427.00	55.37	74.00	-18.63	50.23	5.14	Peak		
5	10400.00	55.22	68.30	-13.08	40.47	14.75	Peak		

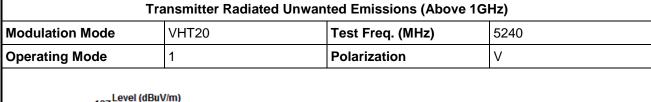
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

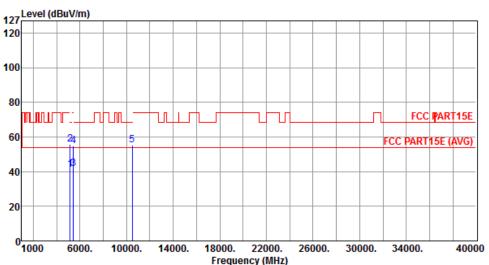
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 73 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission	Limit	Margin		Factor	Remark	ANT	Turn
		level			reading			High	Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	41.44	54.00	-12.56	36.50	4.94	Average		
2	5150.00	55.68	74.00	-18.32	50.74	4.94	Peak		
3	5427.00	41.62	54.00	-12.38	36.48	5.14	Average		
4	5427.00	54.73	74.00	-19.27	49.59	5.14	Peak		
5	10480.00	55.28	68.30	-13.02	40.44	14.84	Peak		

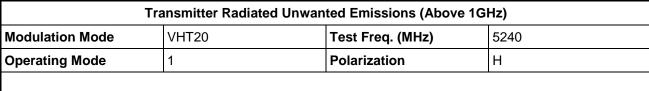
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

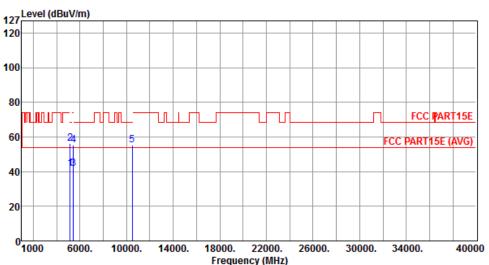
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 74 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission	Limit	Margin		Factor	Remark	ANT	Turn
		level			reading			High	Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	41.65	54.00	-12.35	36.71	4.94	Average		
2	5150.00	56.27	74.00	-17.73	51.33	4.94	Peak		
3	5427.00	41.88	54.00	-12.12	36.74	5.14	Average		
4	5427.00	55.27	74.00	-18.73	50.13	5.14	Peak		
5	10480.00	55.20	68.30	-13.10	40.36	14.84	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

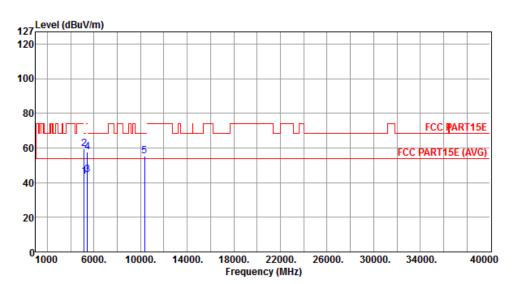
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 75 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	VHT20	Test Freq. (MHz)	5180						
Operating Mode 2 Polarization V									



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	43.51	54.00	-10.49	38.57	4.94	Average		
2	5150.00	59.47	74.00	-14.53	54.53	4.94	Peak		
3	5427.00	44.55	54.00	-9.45	39.41	5.14	Average		
4	5427.00	57.49	74.00	-16.51	52.35	5.14	Peak		
5	10360.00	55.26	68.30	-13.04	40.55	14.71	Peak		

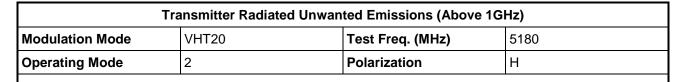
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

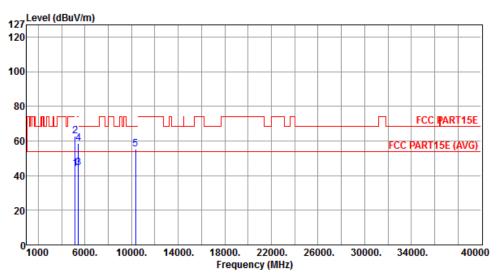
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 76 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. E	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	44.21	54.00	-9.79	39.27	4.94	Average		
2	5150.00	62.79	74.00	-11.21	57.85	4.94	Peak		
3	5427.00	44.59	54.00	-9.41	39.45	5.14	Average		
4	5427.00	58.78	74.00	-15.22	53.64	5.14	Peak		
5	10360.00	55.32	68.30	-12.98	40.61	14.71	Peak		

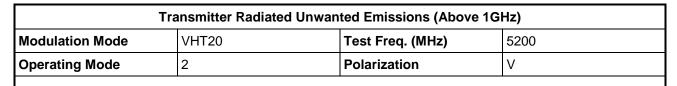
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

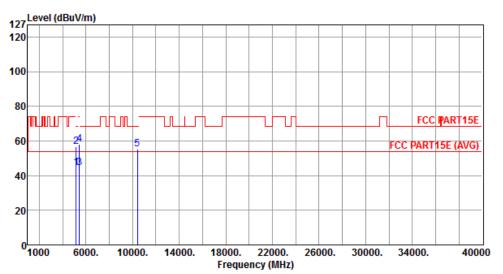
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 77 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. MHz	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	44.35	54.00	-9.65	39.41	4.94	Average		
2	5150.00	56.71	74.00	-17.29	51.77	4.94	Peak		
3	5427.00	44.71	54.00	-9.29	39.57	5.14	Average		
4	5427.00	58.25	74.00	-15.75	53.11	5.14	Peak		
5	10400.00	55.48	68.30	-12.82	40.73	14.75	Peak		

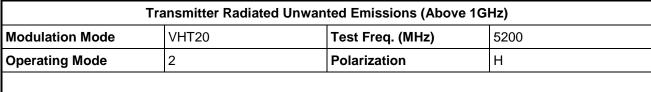
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

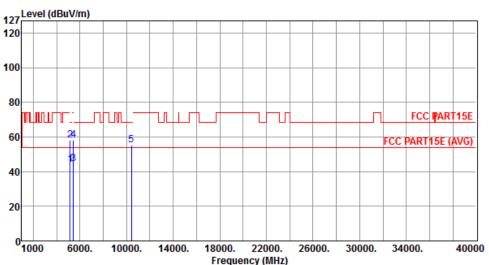
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 78 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	43.85	54.00	-10.15	38.91	4.94	Average		
2	5150.00	57.94	74.00	-16.06	53.00	4.94	Peak		
3	5427.00	44.58	54.00	-9.42	39.44	5.14	Average		
4	5427.00	58.11	74.00	-15.89	52.97	5.14	Peak		
5	10400.00	55.43	68.30	-12.87	40.68	14.75	Peak		

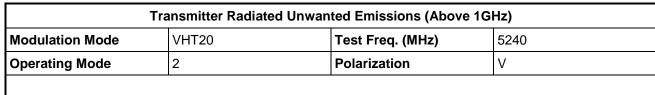
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

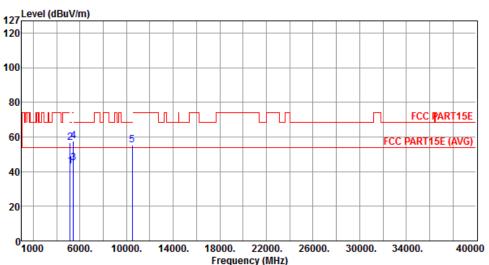
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 79 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission	Limit	Margin			Remark	ANT	Turn
	MHz	level dBuV/m	dBuV/m	dB	reading dBuV	dB		High cm	Table deg
1	5150.00	43.26	54 00	10 74	38.32	4.94	Average		
2		56.92			51.98	4.94	Peak		
3	5427.00	44.80	54.00	-9.20	39.66	5.14	Average		
4	5427.00	57.71	74.00	-16.29	52.57	5.14	Peak		
5	10480.00	55.43	68.30	-12.87	40.59	14.84	Peak		

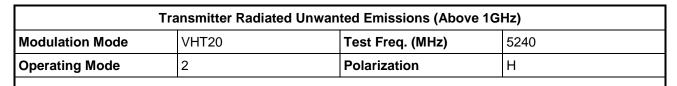
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

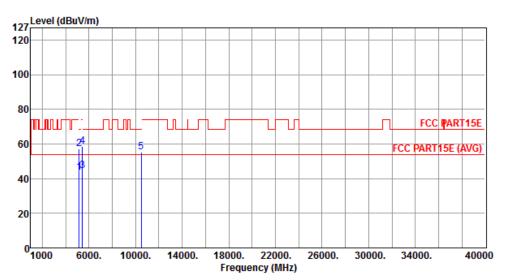
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 80 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	43.56	54.00	-10.44	38.62	4.94	Average		
2	5150.00	57.34	74.00	-16.66	52.40	4.94	Peak		
3	5427.00	44.64	54.00	-9.36	39.50	5.14	Average		
4	5427.00	58.58	74.00	-15.42	53.44	5.14	Peak		
5	10480.00	55.31	68.30	-12.99	40.47	14.84	Peak		

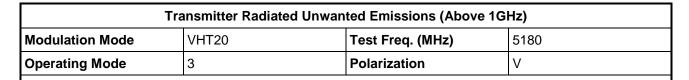
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

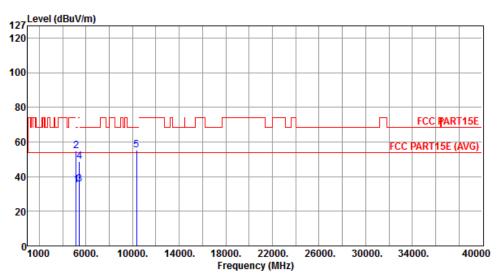
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 81 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. MHz	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	35.09	54.00	-18.91	30.15	4.94	Average		
2	5150.00	54.84	74.00	-19.16	49.90	4.94	Peak		
3	5427.00	35.68	54.00	-18.32	30.54	5.14	Average		
4	5427.00	48.72	74.00	-25.28	43.58	5.14	Peak		
5	10360.00	55.14	68.30	-13.16	40.43	14.71	Peak		

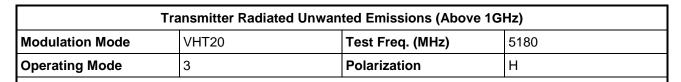
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

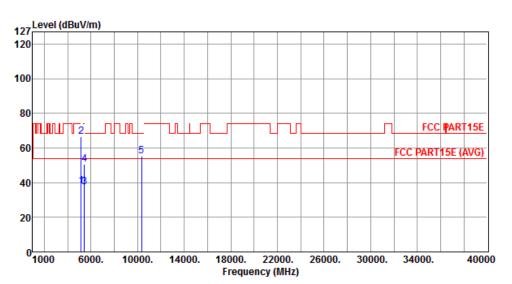
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 82 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	37.88	54.00	-16.12	32.94	4.94	Average		
2	5150.00	66.42	74.00	-7.58	61.48	4.94	Peak		
3	5427.00	37.59	54.00	-16.41	32.45	5.14	Average		
4	5427.00	50.51	74.00	-23.49	45.37	5.14	Peak		
5	10360.00	55.20	68.30	-13.10	40.49	14.71	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

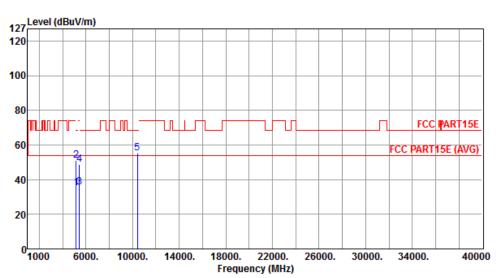
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 83 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

Transmitter Radiated Unwanted Emissions (Above 1GHz)	

Modulation ModeVHT20Test Freq. (MHz)5200Operating Mode3PolarizationV



	Freq. 6 MHz	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	34.99	54.00	-19.01	30.05	4.94	Average		
2	5150.00	50.87	74.00	-23.13	45.93	4.94	Peak		
3	5427.00	35.42	54.00	-18.58	30.28	5.14	Average		
4	5427.00	48.56	74.00	-25.44	43.42	5.14	Peak		
5	10400.00	55.31	68.30	-12.99	40.56	14.75	Peak		

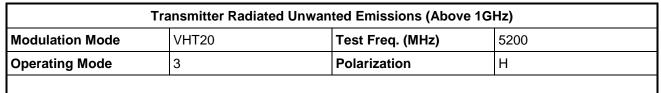
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

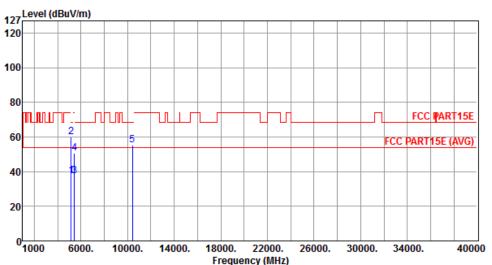
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 84 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. MHz	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	37.50	54.00	-16.50	32.56	4.94	Average		
2	5150.00	60.06	74.00	-13.94	55.12	4.94	Peak		
3	5427.00	37.33	54.00	-16.67	32.19	5.14	Average		
4	5427.00	50.75	74.00	-23.25	45.61	5.14	Peak		
5	10400.00	55.51	68.30	-12.79	40.76	14.75	Peak		

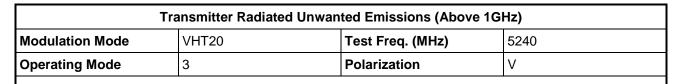
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

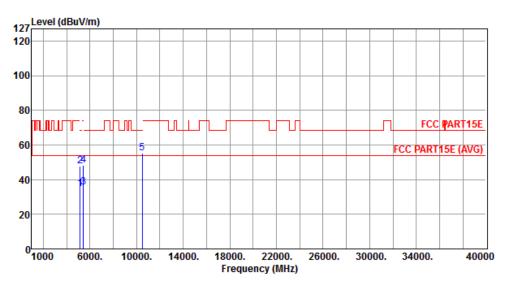
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 85 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	34.68	54.00	-19.32	29.74	4.94	Average		
2	5150.00	47.76	74.00	-26.24	42.82	4.94	Peak		
3	5427.00	35.40	54.00	-18.60	30.26	5.14	Average		
4	5427.00	48.37	74.00	-25.63	43.23	5.14	Peak		
5	10480.00	55.18	68.30	-13.12	40.34	14.84	Peak		

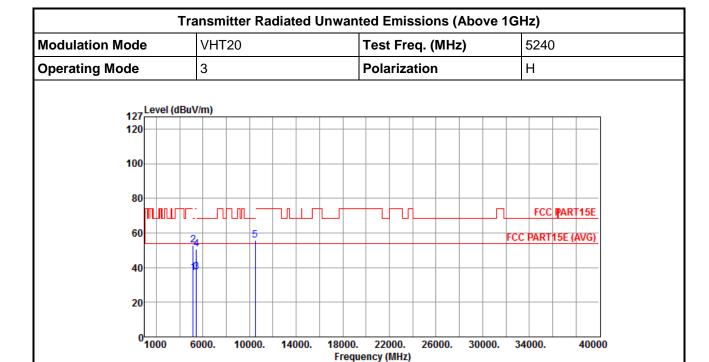
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 86 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	36.96	54.00	-17.04	32.02	4.94	Average		
2	5150.00	53.05	74.00	-20.95	48.11	4.94	Peak		
3	5427.00	37.33	54.00	-16.67	32.19	5.14	Average		
4	5427.00	50.42	74.00	-23.58	45.28	5.14	Peak		
5	10480.00	55.56	68.30	-12.74	40.72	14.84	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

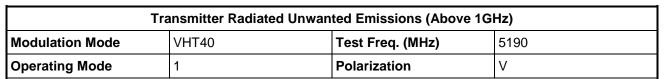
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

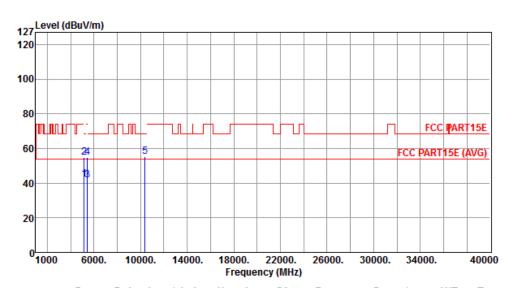
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 87 of 109
TEL: 886-3-3273456 Report Version : Rev. 02

3.6.9 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT40



Report No.: FR370334AN



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	42.15	54.00	-11.85	37.21	4.94	Average		
2	5150.00	54.84	74.00	-19.16	49.90	4.94	Peak		
3	5427.00	41.65	54.00	-12.35	36.51	5.14	Average		
4	5427.00	54.96	74.00	-19.04	49.82	5.14	Peak		
5	10380.00	55.43	68.30	-12.87	40.70	14.73	Peak		

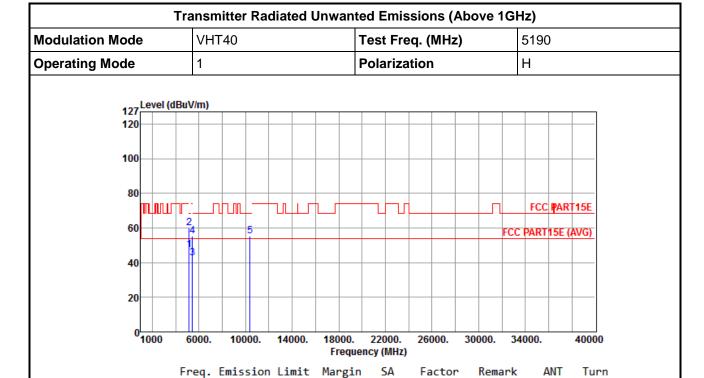
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 88 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



		TeveT		reading			High	Table
	MHz	dBuV/m	dBuV/m dB	dBuV	dB		cm	deg
1	5150.00	47.14	54.00 -6.86	42.20	4.94	Average		
2	5150.00	60.18	74.00 -13.82	55.24	4.94	Peak		
3	5427.00	42.61	54.00 -11.39	37.47	5.14	Average		
4	5427.00	55.24	74.00 -18.76	50.10	5.14	Peak		
5	10380.00	55.39	68.30 -12.91	40.66	14.73	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 89 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

20

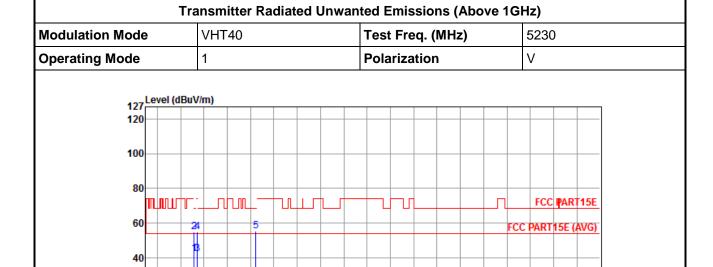
⁰1000

6000.

10000.

14000.

Report No.: FR370334AN



	·	Emission level			reading		Remark		Turn Table
	MHz	dBuV/m	dBuV/m	dВ	dBuV	dB		CM	deg
1	5150.00	42.33	54.00	-11.67	37.39	4.94	Average		
2	5150.00	54.91	74.00	-19.09	49.97	4.94	Peak		
3	5427.00	41.96	54.00	-12.04	36.82	5.14	Average		
4	5427.00	54.85	74.00	-19.15	49.71	5.14	Peak		
5	10460.00	55.38	68.30	-12.92	40.56	14.82	Peak		

Frequency (MHz)

22000.

26000.

30000.

34000.

40000

18000.

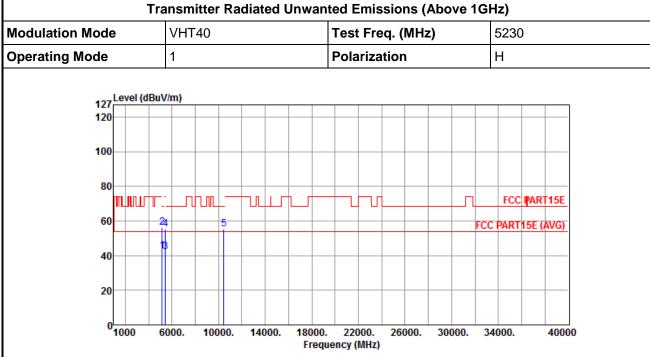
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 90 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	42.46	54.00	-11.54	37.52	4.94	Average		
2	5150.00	56.30	74.00	-17.70	51.36	4.94	Peak		
3	5427.00	42.36	54.00	-11.64	37.22	5.14	Average		
4	5427.00	55.12	74.00	-18.88	49.98	5.14	Peak		
5	10460.00	55.19	68.30	-13.11	40.37	14.82	Peak		

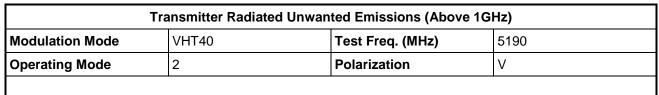
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

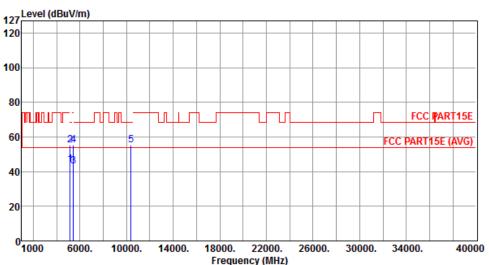
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 91 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission	Limit	Margin		Factor	Remark	ANT	Turn
		level			reading			High	Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	44.24	54.00	-9.76	39.30	4.94	Average		
2	5150.00	55.46	74.00	-18.54	50.52	4.94	Peak		
3	5427.00	42.95	54.00	-11.05	37.81	5.14	Average		
4	5427.00	55.52	74.00	-18.48	50.38	5.14	Peak		
5	10380.00	55.08	68.30	-13.22	40.35	14.73	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

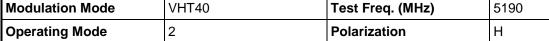
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

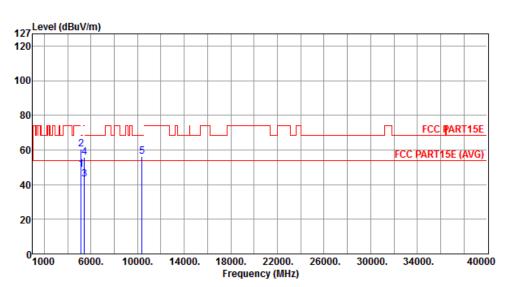
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 92 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

Tra	nsmitter Radiated Unwan	ted Emissions (Above 1G	Hz)





	Freq.	Emission	Limit	Margin			Remark	ANT	Turn
	MHz	level dBuV/m	dBuV/m	dB	reading dBuV	dB		High cm	Table deg
1	5150.00	48.56	54.00	-5.44	43.62	4.94	Average		
2	5150.00	60.45	74.00	-13.55	55.51	4.94	Peak		
3	5427.00	43.23	54.00	-10.77	38.09	5.14	Average		
4	5427.00	55.90	74.00	-18.10	50.76	5.14	Peak		
5	10380.00	56.06	68.30	-12.24	41.33	14.73	Peak		

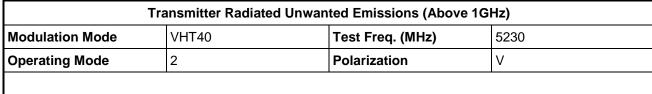
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

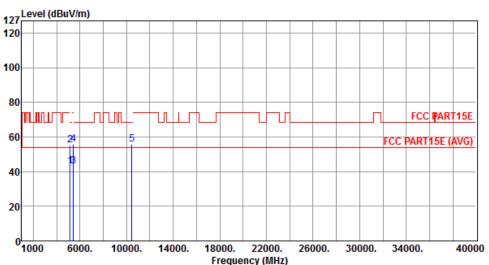
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 93 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	43.34	54.00	-10.66	38.40	4.94	Average		
2	5150.00	55.47	74.00	-18.53	50.53	4.94	Peak		
3	5427.00	43.35	54.00	-10.65	38.21	5.14	Average		
4	5427.00	55.73	74.00	-18.27	50.59	5.14	Peak		
5	10460.00	55.81	68.30	-12.49	40.99	14.82	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 94 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

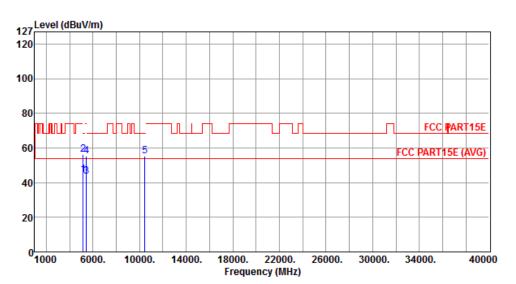
FCC Test Report

Transmitter Radiated Unwanted Emissions (Above 1GHz)

Modulation Mode VHT40 Test Freq. (MHz) 5230

Operating Mode 2 Polarization H

Report No.: FR370334AN



	Freq.	Emission	Limit	Margin			Remark	ANT	Turn
	MHz	level dBuV/m	dBuV/m	dB	reading dBuV	dB		High cm	Table deg
1	5150.00	44.75	54.00	-9.25	39.81	4.94	Average		
2	5150.00	56.20	74.00	-17.80	51.26	4.94	Peak		
3	5427.00	43.40	54.00	-10.60	38.26	5.14	Average		
4	5427.00	55.52	74.00	-18.48	50.38	5.14	Peak		
5	10460.00	55.43	68.30	-12.87	40.61	14.82	Peak		

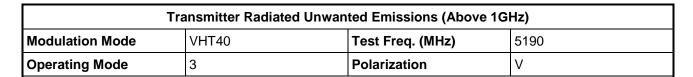
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

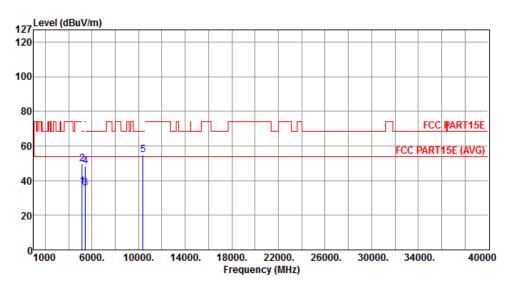
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 95 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	36.46	54.00	-17.54	31.52	4.94	Average		
2	5150.00	49.46	74.00	-24.54	44.52	4.94	Peak		
3	5427.00	35.83	54.00	-18.17	30.69	5.14	Average		
4	5427.00	48.28	74.00	-25.72	43.14	5.14	Peak		
5	10380.00	54.77	68.30	-13.53	40.04	14.73	Peak		

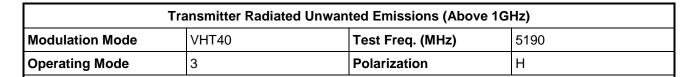
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

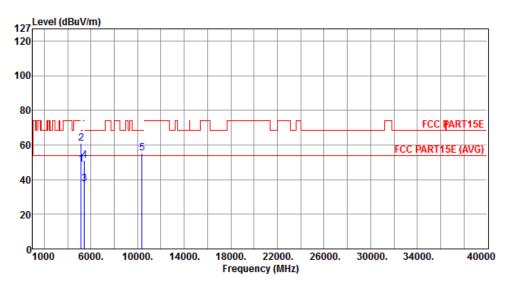
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 96 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	48.91	54.00	-5.09	43.97	4.94	Average		
2	5150.00	60.97	74.00	-13.03	56.03	4.94	Peak		
3	5427.00	37.62	54.00	-16.38	32.48	5.14	Average		
4	5427.00	51.19	74.00	-22.81	46.05	5.14	Peak		
5	10380.00	55.47	68.30	-12.83	40.74	14.73	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

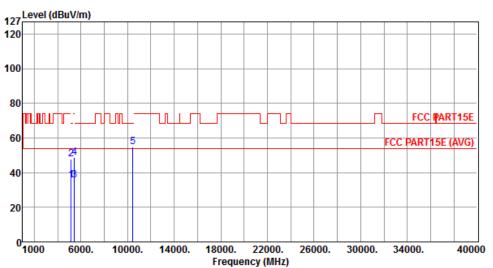
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 97 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

Transmitter Radiated Unwanted Emissions (Above 1GHz)									
Modulation Mode	VHT40	Test Freq. (MHz)	5230						
Operating Mode	3	Polarization	V						



	Freq.	Emission	Limit	Margin			Remark	ANT	Turn
		level			reading			High	Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	35.40	54.00	-18.60	30.46	4.94	Average		
2	5150.00	47.71	74.00	-26.29	42.77	4.94	Peak		
3	5427.00	35.42	54.00	-18.58	30.28	5.14	Average		
4	5427.00	48.66	74.00	-25.34	43.52	5.14	Peak		
5	10460.00	54.94	68.30	-13.36	40.12	14.82	Peak		

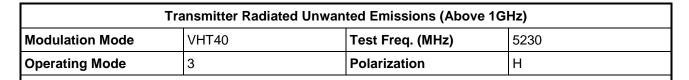
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

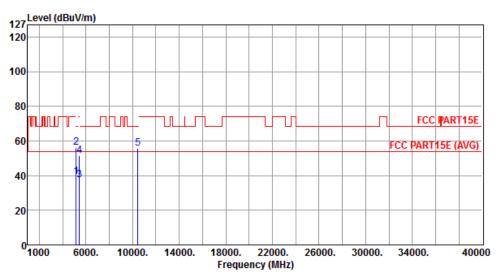
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. : 98 of 109
TEL: 886-3-3273456 : Report Version : Rev. 02





	Freq. 6 MHz	Emission level dBuV/m		Ū	SA reading dBuV		Remark	ANT High cm	Turn Table deg
1	5150.00	39.18	54.00	-14.82	34.24	4.94	Average		
2	5150.00	56.15	74.00	-17.85	51.21	4.94	Peak		
3	5427.00	37.53	54.00	-16.47	32.39	5.14	Average		
4	5427.00	51.42	74.00	-22.58	46.28	5.14	Peak		
5	10460.00	55.75	68.30	-12.55	40.93	14.82	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

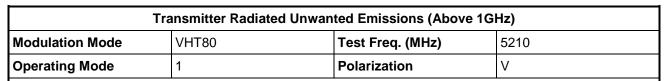
Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

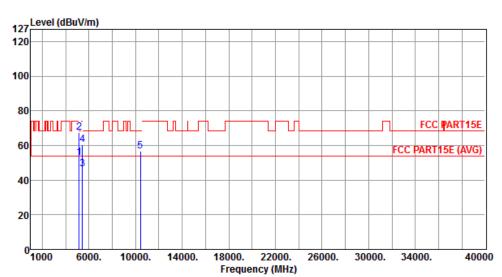
Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 99 of 109 TEL: 886-3-3273456 Report Version : Rev. 02

FCC Test Report No.: FR370334AN

3.6.10 Transmitter Radiated Unwanted Emissions (Above 1GHz) for VHT80





	Freq.	Emission level	Limit	Margin	SA reading	Factor	Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	52.95	54.00	-1.05	48.01	4.94	Average		
2	5150.00	67.42	74.00	-6.58	62.48	4.94	Peak		
3	5427.00	46.38	54.00	-7.62	41.24	5.14	Average		
4	5427.00	60.25	74.00	-13.75	55.11	5.14	Peak		
5	10420.00	56.59	68.30	-11.71	41.82	14.77	Peak		

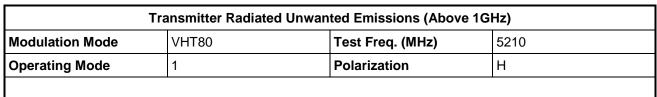
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

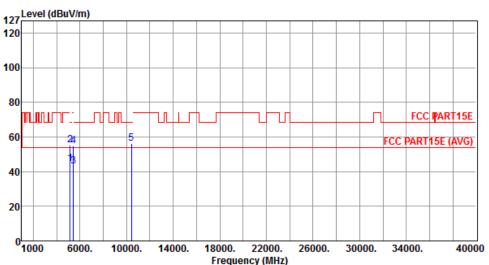
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 100 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	44.38	54.00	-9.62	39.44	4.94	Average		
2	5150.00	55.18	74.00	-18.82	50.24	4.94	Peak		
3	5427.00	43.12	54.00	-10.88	37.98	5.14	Average		
4	5427.00	54.78	74.00	-19.22	49.64	5.14	Peak		
5	10420.00	56.29	68.30	-12.01	41.52	14.77	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 101 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



FCC Test Report

20

⁰1000

6000.

10000.

14000.

Transmitter Radiated Unwanted Emissions (Above 1GHz) 5210 **Modulation Mode** VHT80 Test Freq. (MHz) ٧ 2 **Operating Mode Polarization** 127 Level (dBuV/m) 120 100 80 FCC PART15E سلال 60 FCC PART15E (AVG) 40

18000.

Freq.	Emission	Limit	Margin	SA	Factor	Remark	ANT	Turn
	level			reading			High	Table
MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg

26000.

30000.

34000.

40000

22000.

Frequency (MHz)

Report No.: FR370334AN

1	5150.00	52.98	54.00 -	1.02	48.04	4.94	Average	 	
2	5150.00	67.58	74.00 -	6.42	62.64	4.94	Peak	 	
3	5427.00	46.18	54.00 -	7.82	41.04	5.14	Average	 	
4	5427.00	59.82	74.00 -1	14.18	54.68	5.14	Peak	 	
5	10420.00	56.72	68.30 -1	1.58	41.95	14.77	Peak	 	

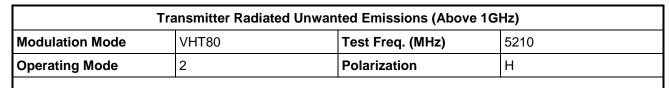
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

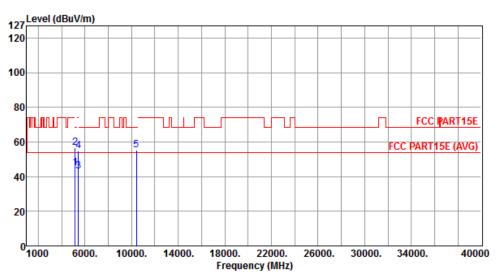
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 102 of 109
TEL: 886-3-3273456 Report Version : Rev. 02





	Freq. MHz	Emission level dBuV/m	Limit dBuV/m		SA reading dBuV	Factor dB	Remark	ANT High cm	Turn Table deg
1	5150.00	44.96	54.00	-9.04	40.02	4.94	Average		
2	5150.00	56.92	74.00	-17.08	51.98	4.94	Peak		
3	5427.00	43.28	54.00	-10.72	38.14	5.14	Average		
4	5427.00	54.81	74.00	-19.19	49.67	5.14	Peak		
5	10420.00	55.31	68.30	-12.99	40.54	14.77	Peak		

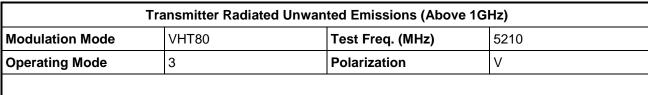
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

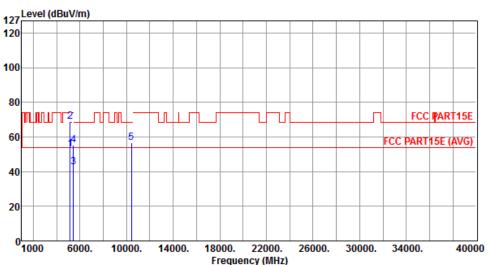
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 103 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	52.90	54.00	-1.10	47.96	4.94	Average		
2	5150.00	69.09	74.00	-4.91	64.15	4.94	Peak		
3	5427.00	42.80	54.00	-11.20	37.66	5.14	Average		
4	5427.00	55.30	74.00	-18.70	50.16	5.14	Peak		
5	10420.00	56.74	68.30	-11.56	41.97	14.77	Peak		

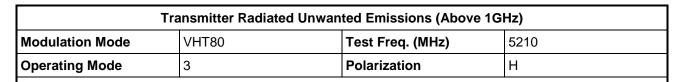
Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

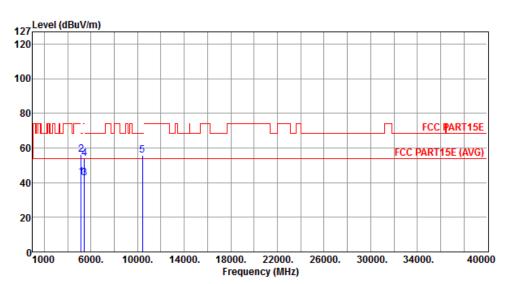
Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 104 of 109 TEL: 886-3-3273456 Report Version : Rev. 02





	Freq.	Emission level	Limit	Margin	SA reading		Remark	ANT High	Turn Table
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB		cm	deg
1	5150.00	43.18	54.00	-10.82	38.24	4.94	Average		
2	5150.00	56.10	74.00	-17.90	51.16	4.94	Peak		
3	5427.00	42.58	54.00	-11.42	37.44	5.14	Average		
4	5427.00	54.11	74.00	-19.89	48.97	5.14	Peak		
5	10420.00	55.99	68.30	-12.31	41.22	14.77	Peak		

Note 1: ">20dB" means spurious emission levels that exceed the level of 20 dB below the applicable limit.

Note 2: "N/F" means Nothing Found spurious emissions (No spurious emissions were detected.)

Note 3: Measurement receive antenna polarization: H (Horizontal), V (Vertical)

Note 4: For restricted bands, the peak measurement is fully sufficient, as the max field strength as measured with the Peak-Detector meets the AV-Limit so that the AV level does not need to be reported in addition.

SPORTON INTERNATIONAL INC. Page No. : 105 of 109 TEL: 886-3-3273456 Report Version : Rev. 02



3.7 Frequency Stability

3.7.1 Frequency Stability Limit

	Frequency Stability Limit
UN	III Devices
\boxtimes	In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.
LE-	-LAN Devices
\boxtimes	N/A
IEE	EE Std. 802.11n-2009
\boxtimes	The transmitter center frequency tolerance shall be \pm 20 ppm maximum for the 5 GHz band and \pm 25 ppm maximum for the 2.4 GHz band.

Report No.: FR370334AN

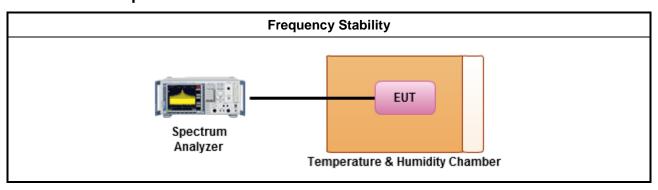
3.7.2 Measuring Instruments

Refer a test equipment and calibration data table in this test report.

3.7.3 Test Procedures

	Test Method
\boxtimes	Refer as ANSI C63.10, clause 6.8 for frequency stability tests
	Frequency stability with respect to ambient temperature
	Frequency stability when varying supply voltage
\boxtimes	For conducted measurement.
	For conducted measurements on devices with multiple transmit chains: Measurements need only to be performed on one of the active transmit chains (antenna outputs)
	For radiated measurement. The equipment to be measured and the test antenna shall be oriented to obtain the maximum emitted power level.

3.7.4 Test Setup



SPORTON INTERNATIONAL INC. Page No. : 106 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



FCC Test Report Report No.: FR370334AN

3.7.5 Test Result of Frequency Stability

Frequency Stability Result							
Мо	de	Frequency Stability (ppm)					
Condition	Freq. (MHz)	Test Frequency (MHz)	Frequency Stability (ppm)				
T _{20°C} Vmax	5200	5200.01333	2.5635				
T _{20°C} Vmin	5200	5200.01382	2.6577				
T _{55°C} Vnom	5200	5200.00805	1.5481				
T _{50°C} Vnom	5200	5200.01127	2.1673				
T _{40°C} Vnom	5200	5200.00673	1.2942				
T _{30°C} Vnom	5200	5200.01304	2.5077				
T _{20°C} Vnom	5200	5200.00430	0.8269				
T _{10°C} Vnom	5200	5200.01203	2.3135				
T _{0°C} Vnom	5200	5200.01433	2.7558				
T _{-10°C} Vnom	5200	5200.01338	2.5731				
T _{-20°C} Vnom	5200	5200.01022	1.9654				
T _{-30°C} Vnom	5200	5200.01449	2.7865				
Limit (ppm)		20				
Res	ult	Con	nplied				

Note 1: Measure at 85 % [Vmin] and 115 % [Vmax] of the nominal voltage [Vnom]. Note 2: The nominal voltage refer test report clause 1.1.5 for EUT operational condition.

SPORTON INTERNATIONAL INC. : 107 of 109 Page No. Report Version TEL: 886-3-3273456 : Rev. 02



4 Test Equipment and Calibration Data

Test Item	Conducted Emission								
Test Site	Conduction room 1 / (CO01-WS)								
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until				
EMC Receiver	R&S	ESCS 30	100169	Oct. 02, 2012	Oct. 01, 2013				
LISN	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-667	Dec. 04, 2012	Dec. 03, 2013				
LISN (Support Unit)	SCHWARZBECK MESS-ELEKTRONIK	Schwarzbeck 8127	8127-666	Dec. 04, 2012	Dec. 03, 2013				
RF Cable-CON	Woken	CFD200-NL	CFD200-NL-001	Dec. 25, 2012	Dec. 24, 2013				
50 ohm terminal	NA	50	01	Apr. 22, 2013	Apr. 21, 2014				
50 ohm terminal	NA	50	02	Apr. 22, 2013	Apr. 21, 2014				
50 ohm terminal	NA	50	03	Apr. 22, 2013	Apr. 21, 2014				
50 ohm terminal (Support Unit)	NA	50	04	Apr. 22, 2013	Apr. 21, 2014				

Report No.: FR370334AN

Test Item	Radiated Emission above 1GHz						
Test Site	966 chamber1 / (03CH01-WS)						
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until		
3m semi-anechoic chamber	CHAMPRO	SAC-03	03CH01-WS	Jan. 04, 2013	Jan. 03, 2014		
Spectrum Analyzer	R&S	FSV40	101498	Jan. 24, 2013	Jan. 23, 2014		
Receiver	R&S	ESR3	101658	Jan. 28, 2013	Jan. 27, 2014		
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jan. 11, 2013	Jan. 10, 2014		
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Feb. 18, 2013	Feb. 17, 2014		
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Jan. 14, 2013	Jan. 13, 2014		
Amplifier	Burgeon	BPA-530	100219	Nov. 28, 2012	Nov. 27, 2013		
Amplifier	Agilent	83017A	MY39501308	Dec. 18, 2012	Dec. 17, 2013		
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Dec. 25, 2012	Dec. 24, 2013		
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Dec. 25, 2012	Dec. 24, 2013		
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16139/4	Dec. 25, 2012	Dec. 24, 2013		
RF Cable-R03m	Woken	CFD400NL-LW	CFD400NL-001	Dec. 25, 2012	Dec. 24, 2013		
RF Cable-R10m	Woken	CFD400NL-LW	CFD400NL-002	Dec. 25, 2012	Dec. 24, 2013		
control	EM Electronics	EM1000	60612	N/A	N/A		
Note: Calibration Inter	val of instruments listed	l above is one year.					

Loop Antenna	R&S	HFH2-Z2	100330	Nov. 15, 2012	Nov. 14, 2014		
Amplifier	MITEQ	AMF-6F-260400	9121372	Apr. 19, 2013	Apr. 18, 2015		
Note: Calibration Interval of instruments listed above is two year.							

SPORTON INTERNATIONAL INC. Page No. : 108 of 109
TEL: 886-3-3273456 Report Version : Rev. 02



FCC Test Report

Test Item	RF Conducted							
Test Site	TH01-HY							
Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Calibration Until			
Spectrum Analyzer	R&S	FSV 40	101063	Feb. 18, 2013	Feb. 17, 2014			
Spectrum Analyzer	R&S	FSP 40	100305	Mar. 20, 2013	Mar. 19, 2014			
Temp. and Humidity Chamber	Giant Force	GTH-225-20-SP-SD	MAA1112-007	Nov. 21, 2012	Nov. 20, 2013			
Signal Generator	R&S	SMB100A	175727	Jan. 14, 2013	Jan. 14, 2014			
Power Sensor	Anritsu	MA2411B	0917017	Feb. 02, 2013	Feb. 01, 2014			
Power Meter	Anritsu	ML2495A	0949003	Feb. 02, 2013	Feb. 01, 2014			

Report No.: FR370334AN

SPORTON INTERNATIONAL INC. Page No. : 109 of 109
TEL: 886-3-3273456 Report Version : Rev. 02