

Variant FCC RF Test Report

APPLICANT : Motorola Solutions, Inc.

EQUIPMENT: Access Point, Radio Module 6

BRAND NAME : Motorola

MODEL NAME : AP-6

FCC ID : UZ7AP6

STANDARD : FCC Part 15 Subpart E

CLASSIFICATION : (NII) Unlicensed National Information Infrastructure TX

This is a variant report which is only valid together with the original test report. The product was received on Oct. 02, 2010 and completely tested on May 03, 2012. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures given in ANSI C63.4-2003 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:

Jones Tsai / Manager





SPORTON INTERNATIONAL INC.

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

Report Version : Rev. 05



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REVISION HISTORY

		ISSUED DATE
Rev. 01	This is a variant report by adding Band II (5250MHz ~ 5350MHz) and Band III (5470MHz ~ 5725MHz). All the test cases were performed on original report which can be referred to Sporton Report NO. FR092308B.	Mar. 27, 2012
Rev. 02	 Update report by adding the followings, Descriptions of Test Mode, Power Spectral Density and Conducted Output Power Measurement. Chain A+B data in Power Spectral Density Measurement. Applied Standards Test selection of antennas of Radiated emissions measurements. Measurement Definition of Chain A+B (A) and Chain A+B (B) in 26dB Measurement. 	Apr. 13, 2012
Rev. 03	 Update report by adding the followings, Descriptions of Maximum Conducted Output Power and Power Spectral Density. Test data of Maximum Conducted Output Power, Power Spectral Density and Frequency Stability Measurement. 	May 04, 2012
Rev. 04	Update report by revising page 4 typo format correction Report Section 0, 0, 0 to 3.4, 3.5, 3.6	May 14, 2012
Rev. 05	 Update report by adding the followings, Revising the duty factor table and test procedure in MIMO mode for chain A and B respectively. Revising the calculation for MIMO mode in order to add duty factor for Maximum Conducted Output Power and Power Spectral Density Measurement correctly. 	May 17, 2012
	Rev. 03	which can be referred to Sporton Report NO. FR092308B. Update report by adding the followings, 1. Descriptions of Test Mode, Power Spectral Density and Conducted Output Power Measurement. 2. Chain A+B data in Power Spectral Density Measurement. 3. Applied Standards 4. Test selection of antennas of Radiated emissions measurements. 5. Measurement Definition of Chain A+B (A) and Chain A+B (B) in 26dB Measurement. Update report by adding the followings, 1. Descriptions of Maximum Conducted Output Power and Power Spectral Density. 2. Test data of Maximum Conducted Output Power, Power Spectral Density and Frequency Stability Measurement. Rev. 04 Rev. 04 Rev. 04 Rev. 05 Update report by revising page 4 typo format correction Report Section 0, 0, 0 to 3.4, 3.5, 3.6 Update report by adding the followings, 1. Revising the duty factor table and test procedure in MIMO mode for chain A and B respectively. 2. Revising the calculation for MIMO mode in order to add duty factor for Maximum Conducted Output Power and Power Spectral Density

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SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.207	Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 15.50 dB at 0.198 MHz
3.5	15.407(b)	A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 1.01 dB at 5350.000 MHz
3.6	15.407(b)	A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.7	15.407(c)	A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.8	15.407(g)	A9.5	Frequency Stability	Within Operation Band	Pass	-
3.9	15.203 & 15.407(a)	A9.2	Antenna Requirement	N/A	Pass	-

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1 General Description

1.1 Applicant

Motorola Solutions, Inc.

One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.2 Manufacturer

Motorola Solutions, Inc.

One Motorola Plaza, Holtsville, NY 11742-1300 USA

1.3 Feature of Equipment Under Test

Product Feature & Specification						
Equipment	Access Point, Radio Module 6					
Brand Name	Motorola					
Model Name	AP-6					
FCC ID	UZ7AP6					
Ty/Py Fraguency Pango	5250 MHz ~ 5350 MHz					
Tx/Rx Frequency Range	5470 MHz ~ 5725 MHz					
	<5250 MHz ~ 5350 MHz>					
	802.11a : 23.86 dBm / 0.2432 W					
	802.11n (BW 20MHz) : 23.57 dBm / 0.2275 W					
Maximum Quitnut Bower to Antonno	802.11n (BW 40MHz) : 23.86 dBm / 0.2432 W					
Maximum Output Power to Antenna	<5470 MHz ~ 5725 MHz>					
	802.11a : 23.58 dBm / 0.2280 W					
	802.11n (BW 20MHz) : 23.93 dBm / 0.2472 W					
	802.11n (BW 40MHz) : 23.55 dBm / 0.2265 W					
HW Version	DVT					
SW Version	ART Rev 0.9 Build #16					
Type of Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)					
EUT Stage	Production Unit					

Remark: The above EUT's information was declared by manufacturer. Please refer to the specifications or user's manual for more detailed description.

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<Antenna Information>

				2.4GHz			
Туре	Model Number	Peak Gain	Cable Loss (external)	Cable Loss (internal)	Net Peak Gain	Note	
	ML-2452-APA2-01	3	0	1.3	1.7	Antenna 1	
	ML-2452-HPA5-036	2.9	0.8	1.3	0.8		
	ML-5299-APA1-01R		N.	/A			
Dipole	ML-5299-HPA1-01R		N/A				
Dipole	ML-2499-HPA3-01R	4.6	1.3	1.3	2		
	ML-2499-APA2-01R	2	0	1.3	0.7		
	ML-2452-APA2GA1-01	2	0	1.3	0.7		
Panel	ML-2452-PNA5-01R	4.50	0.31	1.3	2.89	Antenna 2	
	ML-2452-PTA3M3-036	5	0	1.3	3.7	Antenna 3	
Patch	ML-5299-PTA1-0R		N	/A			
	ML-2499-SD3-01R	4.8	1.3	1.3	2.2		
PIFA_MCN	MCN PIFA	2	0	0	2	Antenna 4	
PIFA_NCAP	NCAP PIFA	3	0	0	3	Antenna 5	

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		5GHz					
Туре	Model Number	Peak Gain	Cable Loss (external)	Cable Loss (internal)	Net Peak Gain	Note	
	ML-2452-APA2-01	5	0	1.5	<mark>3.5</mark>	Antenna 1	
	ML-2452-HPA5-036	4.9	1.1	1.5	2.3		
	ML-5299-APA1-01R	2	0	1.5	0.5		
Dipole	ML-5299-HPA1-01R	5	0.84	1.5	2.66		
Dipole	ML-2499-HPA3-01R						
	ML-2499-APA2-01R						
	ML-2452-APA2GA1-01	1	0	1.5	-0.5		
Panel	ML-2452-PNA5-01R	5.00	0.60	1.5	<mark>2.90</mark>	Antenna 2	
	ML-2452-PTA3M3-036	3	0	1.5	<mark>1.5</mark>	Antenna 3	
Patch	ML-5299-PTA1-0R	5	2	1.5	1.5		
	ML-2499-SD3-01R		N.	/A			
PIFA_MCN	MCN PIFA	4.5	0	0	<mark>4.5</mark>	Antenna 4	
PIFA_NCAP	NCAP PIFA	6	0	0	6	Antenna 5	

Note: The Dipole antenna Net Peak gain worse case is ML-2452-APA2-01 (Antenna 1). The Patch antenna Net Peak gain worse case is ML-2452-PTA3M3-036 (Antenna 3).

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1.4 Testing Site

Test Site	SPORTON INTERNATIONAL INC.				
	No. 52, Hwa Ya 1 st Rd., Hwa Ya Technology Park,				
Test Site Location	Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.				
	TEL: +886-3-3273456 / FAX: +886-3-3284978				
Toot Site No	Sporton	Site No.	FCC/IC Registration No.		
Test Site No.	CO05-HY	03CH05-HY	722060/4086B-1		

1.5 Applied Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D01 General UNII Test Procedures v01r01
- ANSI C63.4-2003
- IC RSS-210 Issued 8
- IC RSS-Gen Issue 3
- FCC KDB 662911 D01 Multiple Transmitter Output v01r01
- FCC KDB 662911 D02 MIMO with Cross-Polarized Antennas v01

Remark:

- 1. All test items were verified and recorded according to the standards and without any deviation during the test.
- 2. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

1.6 Ancillary Equipment List

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	DC Power Supply	GW	GPC-60300	N/A	N/A	Unshielded, 1.8 m
		ebook DELL	Vostro 1510	FCC DoC		AC I/P:
	Niedele e ele					Unshielded, 1.2 m
2.	2. Notebook					DC O/P:
						Shielded, 1.8 m

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2 Test Configuration of Equipment Under Test

2.1 Carrier Frequency Channel

802.11a Carrier Frequency Channel								
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)			
52	5260	60	5300	64	5320			
100	5500	116	5580	140	5700			

802.11n (BW 20MHz) Carrier Frequency Channel								
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)			
52	5260	60	5300	64	5320			
100	5500	116	5580	140	5700			

802.11n (BW 40MHz) Carrier Frequency Channel								
Channel	Freq. (MHz)	Channel	Freq. (MHz)	Channel	Freq. (MHz)			
54	5270	62	5310	102	5510			
110	5550	134	5670	-	-			

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2.2 Test Mode

The EUT supports a 2 X 2 MIMO configuration which respectively supports SISO (Chain A, Chain B), completely uncorrelated MIMO (Chain A+B) modes, and is enabled by voltage 3.3V / 4.5V.

Pre-scanned tests were performed to determine the final configuration from all possible combinations, and the worst-case data rates are determined to the investigations by measuring the maximum power and PPSD across all the data rates, bandwidths, modulations and spatial stream modes.

Thus all tests were made with following data rates:

802.11a mode, 20 MHz Channel Bandwidth, 6 Mb/s, OFDM Modulation

802.11n HT20 mode, 20 MHz Channel Bandwidth, 6.5 Mb/s, OFDM Modulation

802.11n HT40 mode, 40 MHz Channel Bandwidth, 13.5 Mb/s, OFDM Modulation

Based on the worst configuration (modulation, data rate) found above, and based on different voltage level and different supported antenna type and gain, the module RF power setting is set individually to meet FCC compliance limit.

Conductive measurements are performed at the highest RF power setting at 3.3V/4.5V individually, the setting for patch antenna at 4.5V, and the setting for PIFA_MCN antenna at 3.3V. Radiated emissions measurements are repeated for each antenna type and 3.3V/4.5V. Both antenna ports on the EUT are connected with a pair of antennas with equal antenna gains.

The details of test channels and bandwidth for RF conductive measurement and Radiated Spurious Emissions are listed next tables.

Ant.	Antenna type	Voltage	26dB EBW	Power	Spectral Density	Peak Excursion	Frequency Stability	99% Bandwidth	Radiated Spurious Emissions
1	Dipole	4.5 V	✓	✓					✓
1	Dipole	3.3 V	✓	✓					✓
2	Panel	4.5 V	✓	✓					✓
2	Panel	3.3 V	✓	✓					✓
3	Patch	4.5 V	✓	✓	✓	✓	✓	✓	✓
3	Patch	3.3 V	✓	✓					✓
4	PIFA_MCN	3.3 V	✓	✓	✓	✓	✓	✓	✓
5	PIFA_NCAP	4.5 V	✓	✓					✓
5	PIFA_NCAP	3.3 V	✓	✓					✓

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For RF conducted measurement, the following tables are showing the test modes (Test Channels & Bandwidth) as the worst cases and recorded in this report.

	Test Cases			
Test Item	802.11a/n (Modulation : OFDM)			
Conducted TCs	 ■ Mode 1: 802.11a_CH52_5260 MHz ■ Mode 2: 802.11a_CH60_5300 MHz ■ Mode 3: 802.11a_CH64_5320 MHz ■ Mode 4: 802.11a_CH100_5500 MHz ■ Mode 5: 802.11a_CH116_5580 MHz ■ Mode 6: 802.11a_CH140_5700 MHz ■ Mode 7: 802.11n_CH52_5260 MHz (BW 20M) ■ Mode 8: 802.11n_CH60_5300 MHz (BW 20M) ■ Mode 9: 802.11n_CH64_5320 MHz (BW 20M) ■ Mode 10: 802.11n_CH100_5500 MHz (BW 20M) ■ Mode 11: 802.11n_CH116_5580 MHz (BW 20M) ■ Mode 12: 802.11n_CH116_5580 MHz (BW 20M) ■ Mode 13: 802.11n_CH140_5700 MHz (BW 20M) ■ Mode 13: 802.11n_CH54_5270 MHz (BW 40M) ■ Mode 14: 802.11n_CH62_5310 MHz (BW 40M) ■ Mode 15: 802.11n_CH102_5510 MHz (BW 40M) ■ Mode 16: 802.11n_CH110_5550 MHz (BW 40M) ■ Mode 17: 802.11n_CH110_5550 MHz (BW 40M) 			
AC Conducted Emission	Mode 1: WLAN (5G) Link			

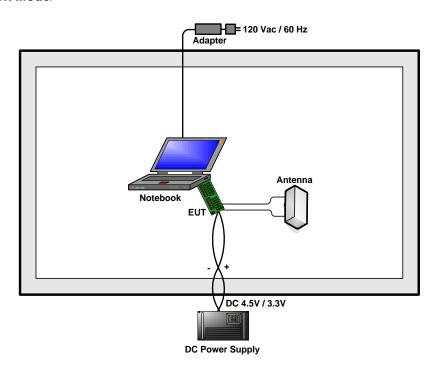
For Radiated Spurious Emissions, the EUT has been associated with antennas 1 \sim 5 pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conduction (150 kHz to 30 MHz), radiation (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). Each type antenna in highest gain (net gain) was chosen and tested for radiated spurious emissions including harmonics, and band edges. The Radiated Spurious Emissions Test Modes and results respectively refer to Appendix A to E.

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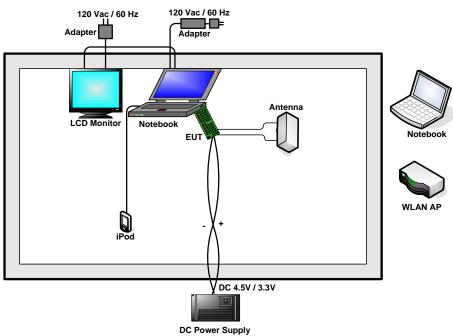


2.3 Connection Diagram of Test System

<WLAN Tx Mode>



<AC Conducted Emission Mode>



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2.4 RF Utility

The programmed RF Utility "ART" is installed in EUT to provide channel selection, power level, data rate and the application type. RF Utility can send transmitting signal for all testing. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

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Test Result 3

3.1 26dB & 99% Bandwidth Measurement

3.1.1 Limit of 26dB & 99% Bandwidth

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B). For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

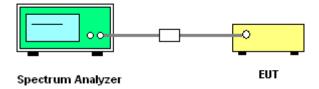
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

- 1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r01.
- 2. Set RBW = approximately 1% of the emission bandwidth.
- 3. Set the VBW > RBW.
- 4. Detector = Peak.
- 5. Trace mode = max hold
- 6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.

3.1.4 Test Setup



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3.1.5 Test Result of 26dB Bandwidth

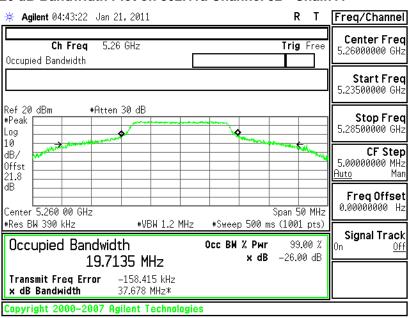
<Antenna 1 for 4.5V>

Test Mode :	Mode 1~6	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

	Frequency	802.11a 26dB Bandwidth (MHz)				
Channel	(MHz)	SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B (A)	Chain A+B (B)	
52	5260	37.678	41.848	25.195	24.955	N/A
60	5300	38.249	40.625	32.321	31.421	N/A
64	5320	29.756	39.426	24.751	24.178	N/A
100	5500	24.063	23.661	24.294	22.908	N/A
116	5580	41.563	38.643	36.509	29.136	N/A
140	5700	23.424	24.145	24.264	23.334	N/A

Note: The Chain A+B (A) means that the result was measured at Chain A and well terminated by 50 ohm load at Chain B under MIMO mode. It is same concept for Chain A + B (B), measured at Chain B, and well terminated at Chain A under MIMO condition. N/A: Not Applicable, and reporting only.

26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A

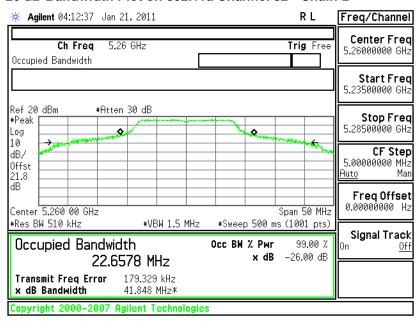


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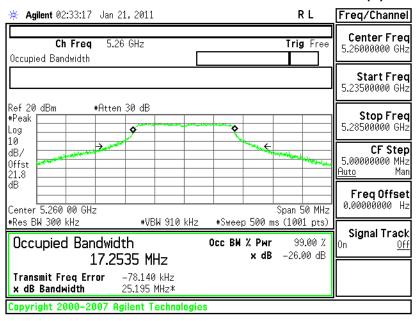
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain B



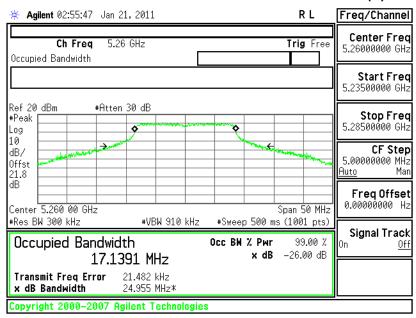
26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(A)



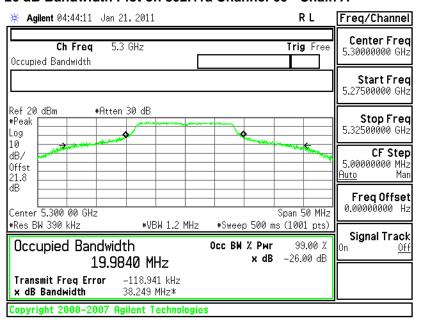
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(B)



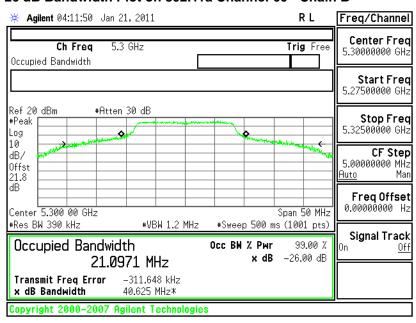
26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A



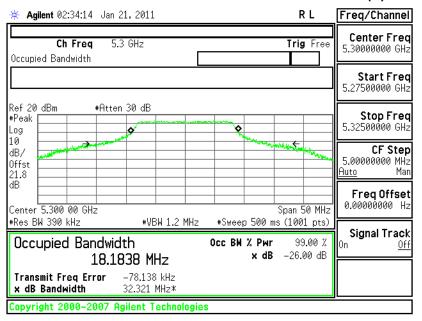
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(A)

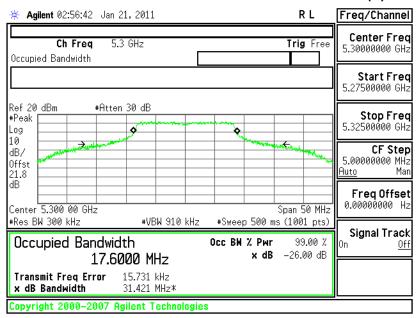


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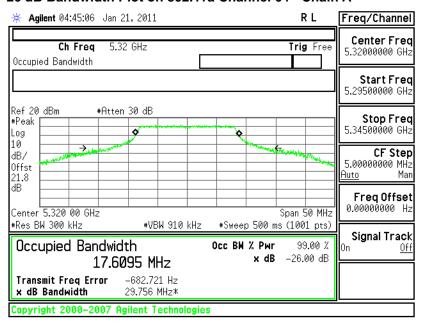
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(B)



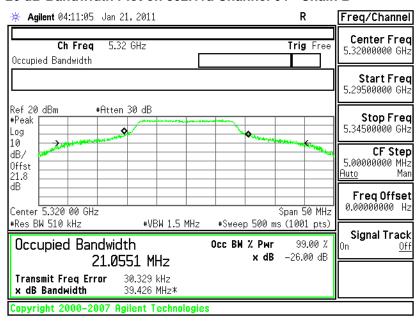
26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A



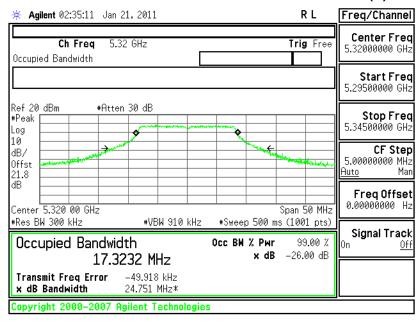
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(A)

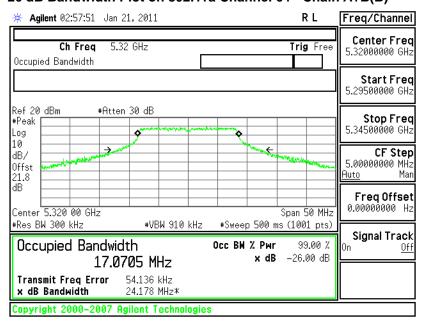


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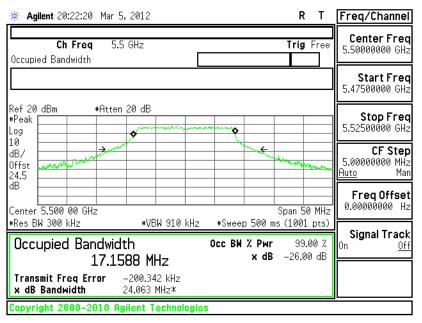
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 20 of 812
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(B)



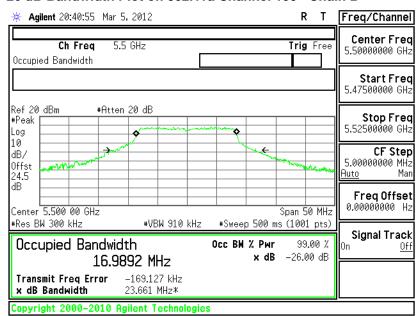
26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A



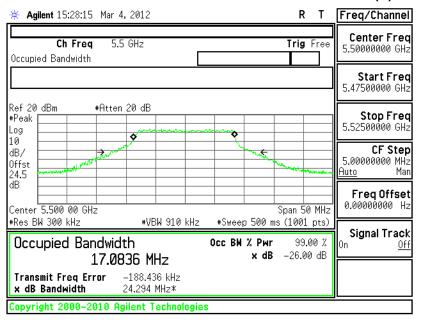
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 21 of 812
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(A)

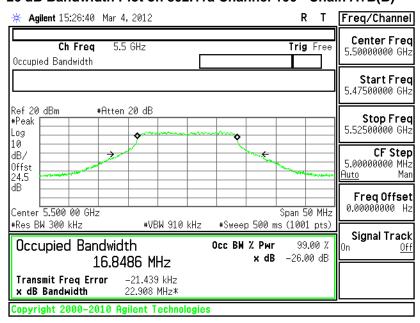


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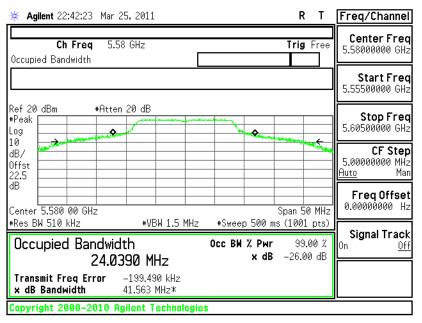
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 22 of 812
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(B)



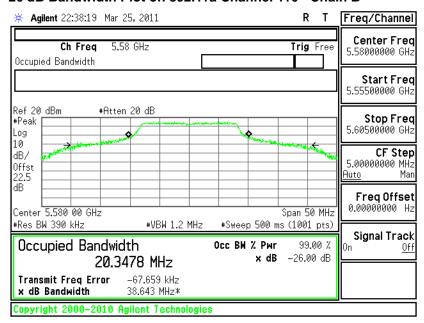
26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A



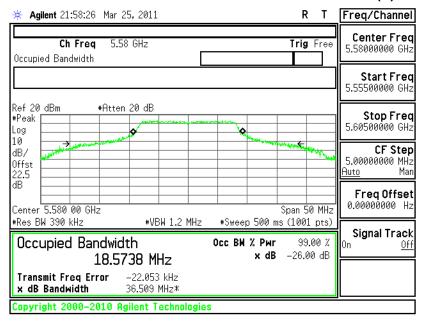
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 23 of 812
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(A)

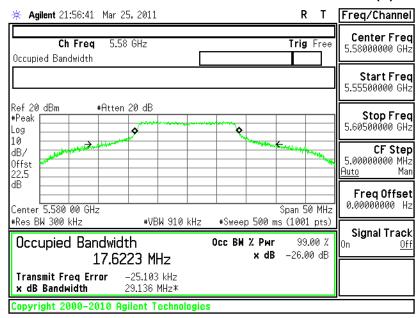


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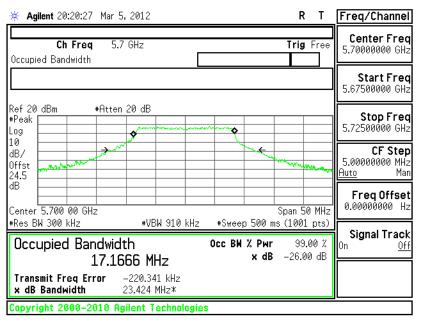
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 24 of 812
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A

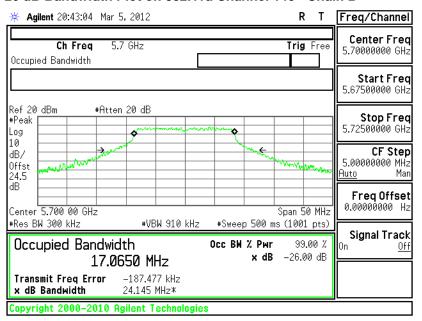


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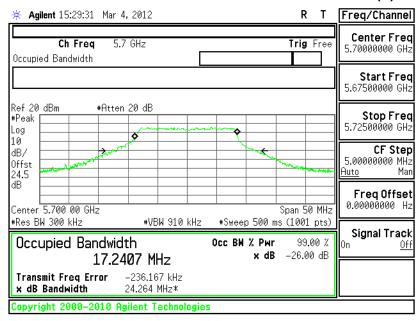
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 25 of 812
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26 dB Bandwidth Plot on 802.11a Channel 140 - Chain B



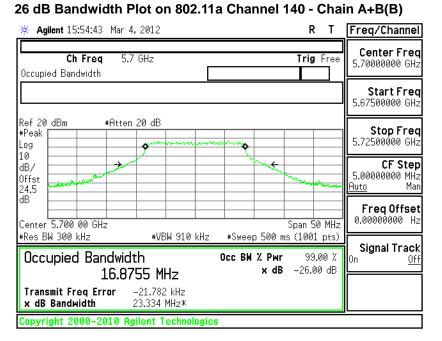
26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(A)



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 26 of 812
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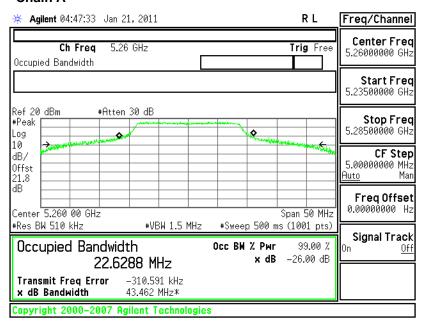
FCC RF Test Report

Test Mode :	Mode 7~12	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency	802.11n (BW 20MHz) 26dB Bandwidth (MHz)				
	(MHz)	SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
52	5260	43.462	45.072	25.273	25.941	N/A
60	5300	28.787	45.339	35.310	35.151	N/A
64	5320	34.004	28.670	26.292	26.354	N/A
100	5500	25.013	24.928	23.610	24.323	N/A
116	5580	45.983	43.708	26.102	28.367	N/A
140	5700	24.770	24.704	23.532	24.395	N/A

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain A



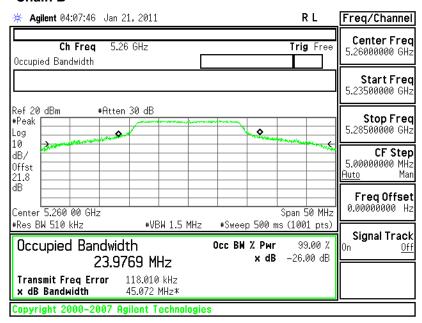
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 28 of 812
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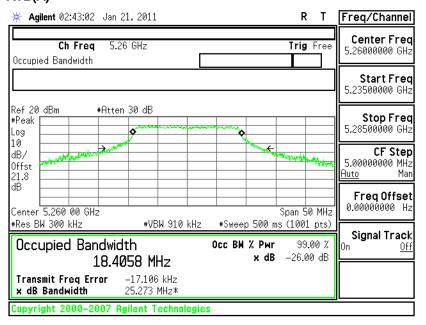


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(A)



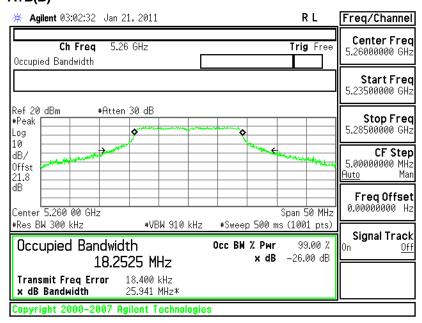
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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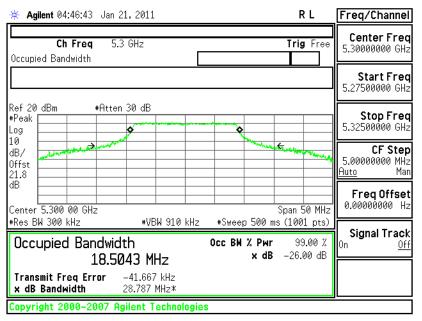


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

- Chain A



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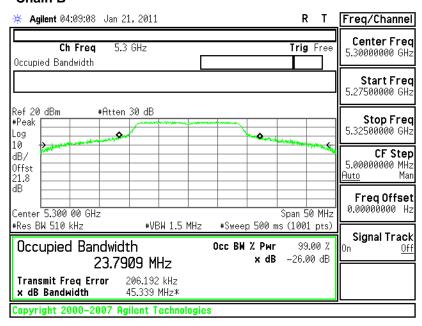
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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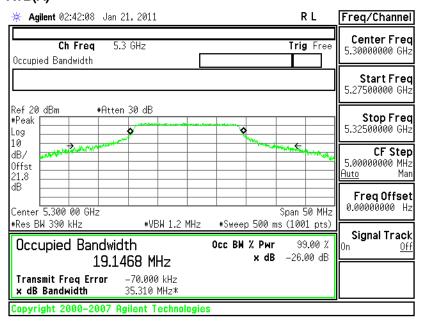


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60 - Chain A+B(A)

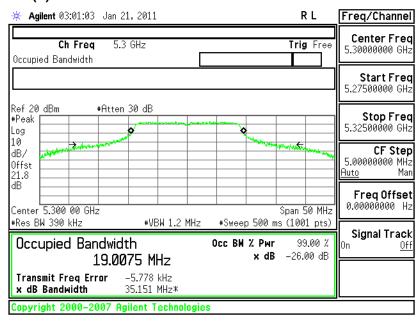


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 31 of 812
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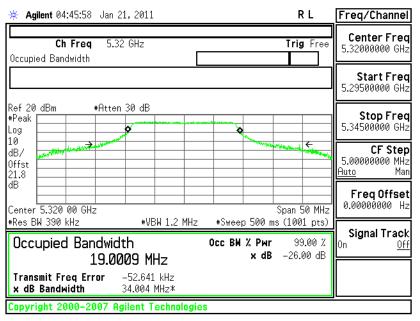


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

- Chain A



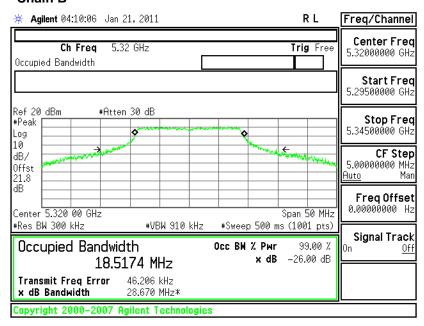
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 32 of 812
Report Issued Date : May 17, 2012
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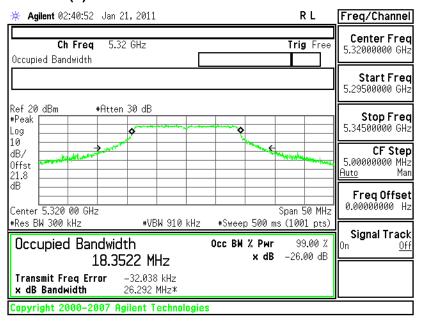


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64 - of Chain A+B(A)

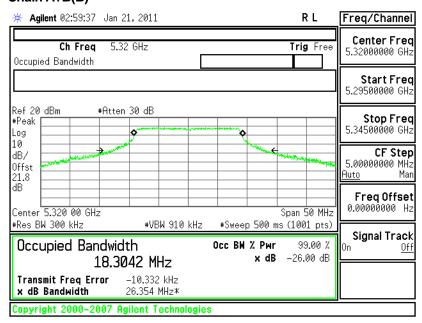


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 33 of 812
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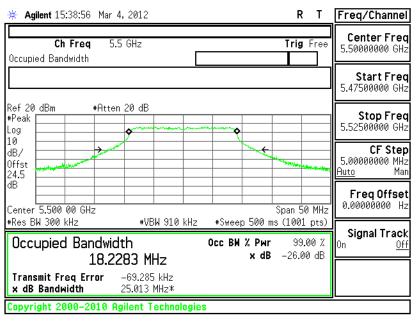


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64 - of Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

- Chain A



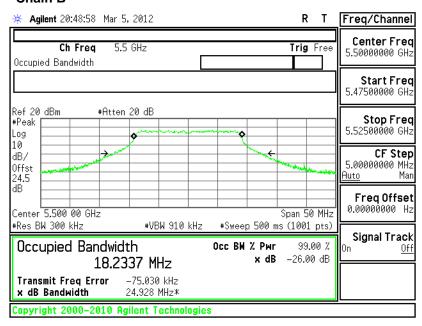
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 34 of 812
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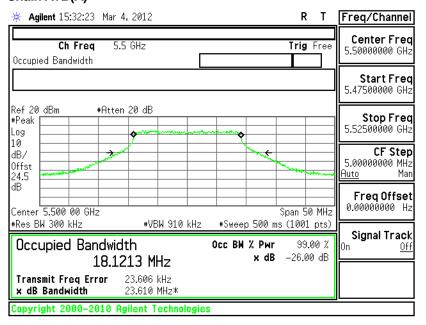


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100 - Chain A+B(A)

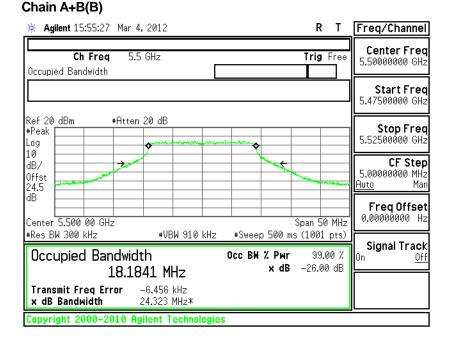


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 35 of 812
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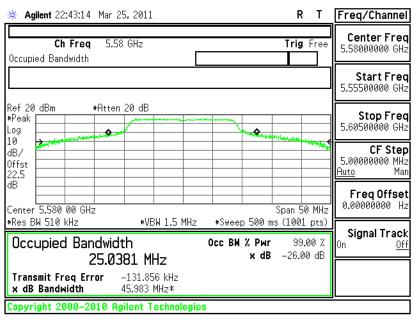


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100 -



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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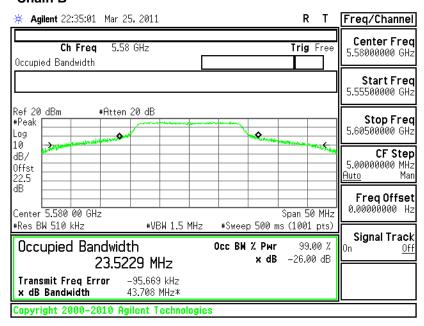
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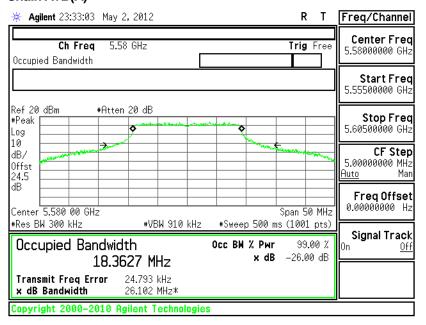


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116

- Chain B



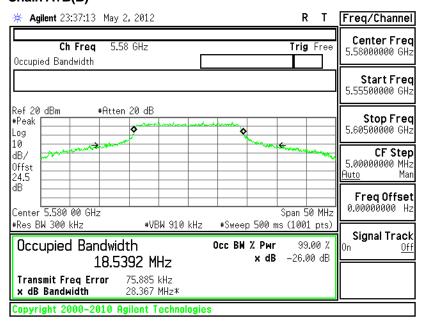
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116 - Chain A+B(A)



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 37 of 812
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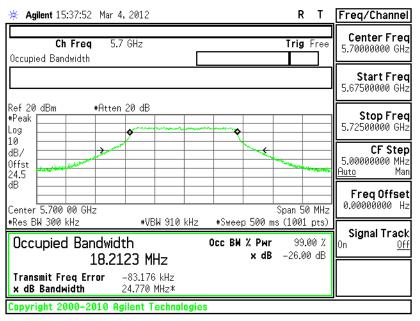


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116 -Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

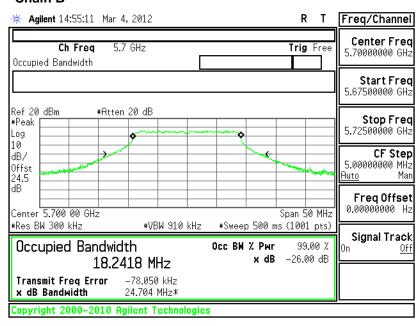
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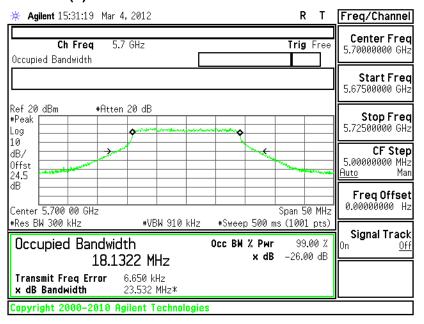
ort Report No. : FR092308-08

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140 - Chain A+B(A)

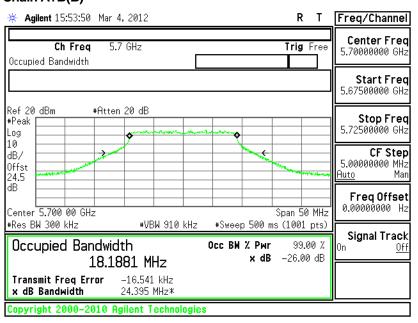


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26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140 - Chain A+B(B)



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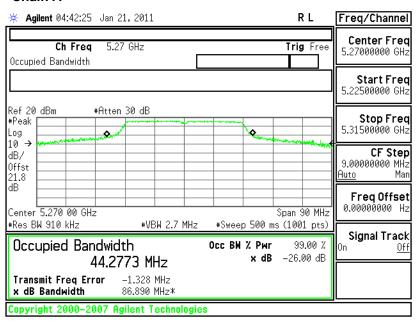
FCC RF Test Report

Test Mode :	Mode 13~17	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency (MHz)		Pass/Fail			
		SISO		MIMO (2Tx)		Pass/Fall
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
54	5270	86.890	89.061	69.949	63.219	N/A
62	5310	52.091	53.863	52.687	51.495	N/A
102	5510	51.544	51.983	47.882	48.194	N/A
110	5550	75.430	69.673	72.304	71.738	N/A
134	5670	49.888	65.086	47.697	48.653	N/A

26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54

- Chain A

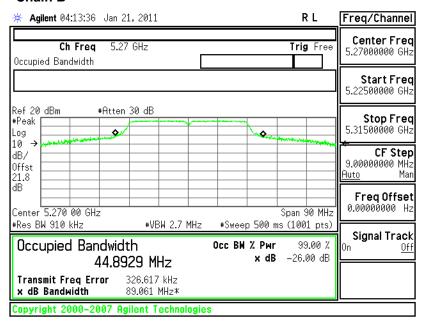


TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 41 of 812
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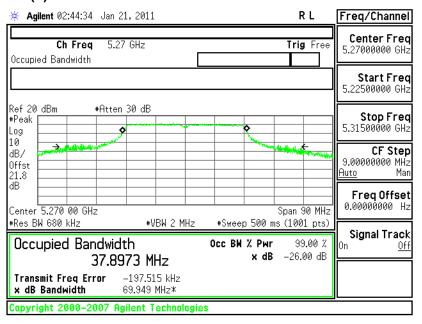


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54 - Chain A+B(A)

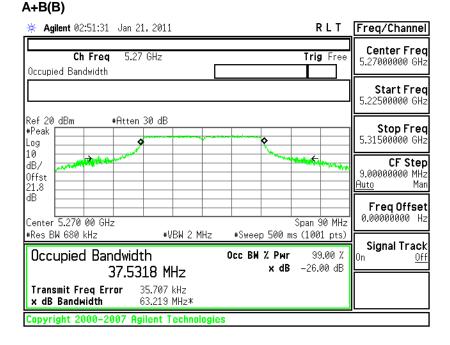


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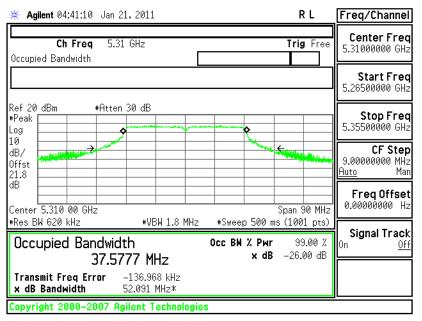


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54 - Chain



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62

- Chain A



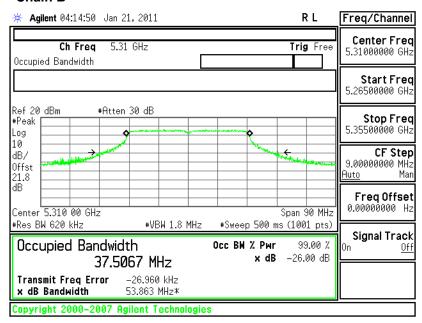
SPORTON INTERNATIONAL INC.

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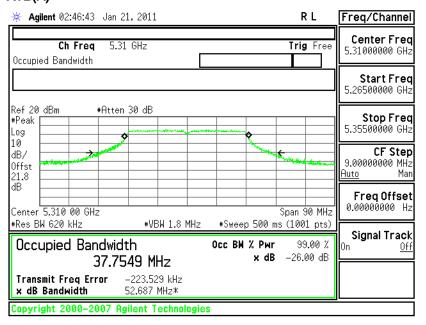


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62 - Chain A+B(A)

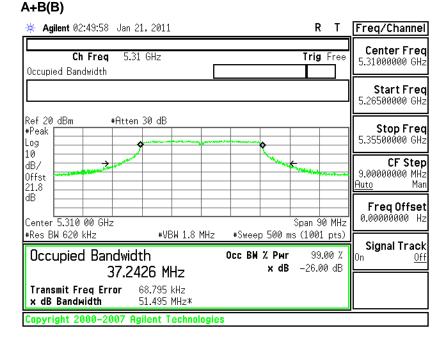


SPORTON INTERNATIONAL INC.

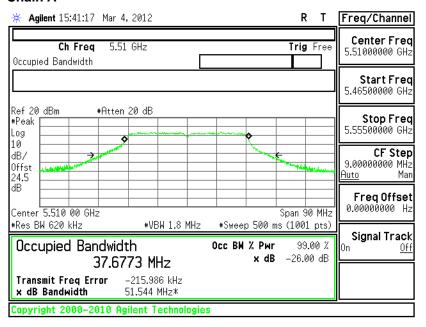
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 44 of 812
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62 - Chain



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A

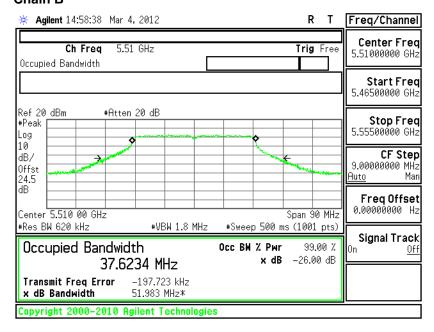


SPORTON INTERNATIONAL INC.

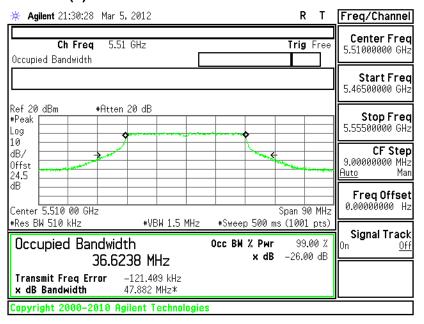
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 45 of 812
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A+B(A)



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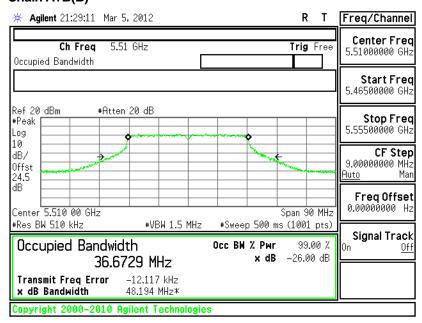
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 46 of 812
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Report No.: FR092308-08

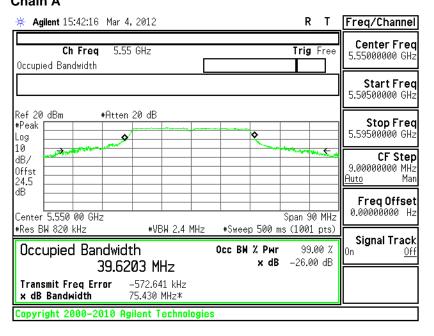
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 -Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -Chain A



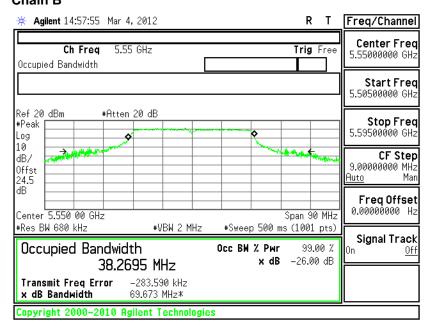
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

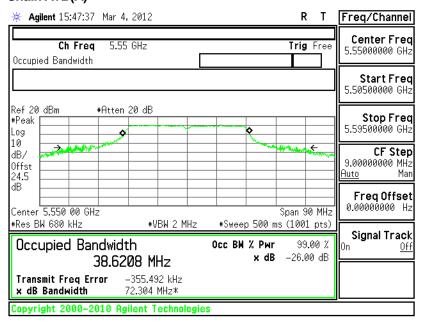
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -Chain A+B(A)



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

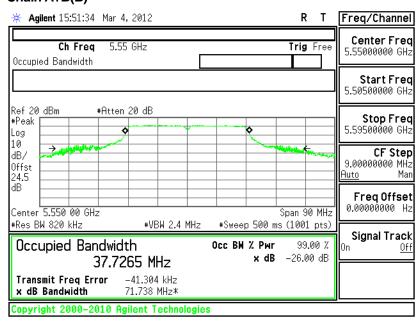
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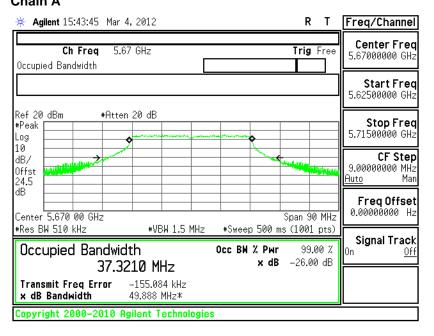
Report Version : Rev. 05



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 - Chain A



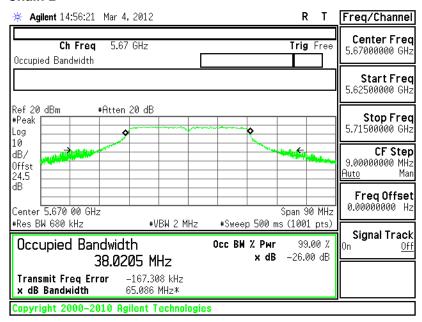
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 49 of 812
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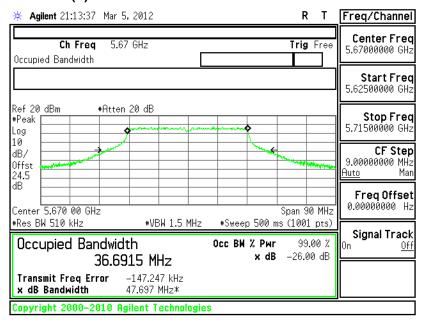


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 -





26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 - Chain A+B(A)

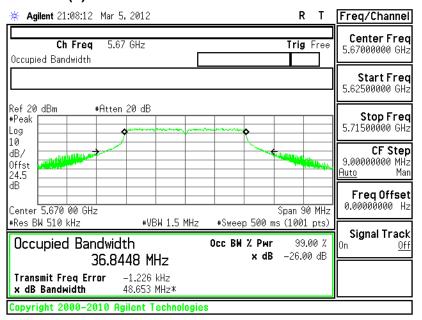


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 50 of 812
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 - Chain A+B(B)



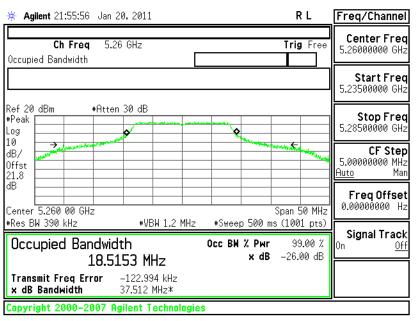
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 51 of 812
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<Antenna 1 for 3.3V>

Test Mode :	Mode 1~6	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)				
Channel		SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B (A)	Chain A+B (B)	
52	5260	37.512	35.629	32.617	26.552	N/A
60	5300	34.425	33.880	38.965	35.934	N/A
64	5320	35.597	36.060	25.586	24.699	N/A
100	5500	24.036	23.741	23.883	23.309	N/A
116	5580	44.025	38.012	43.720	37.629	N/A
140	5700	23.926	24.353	24.584	23.474	N/A

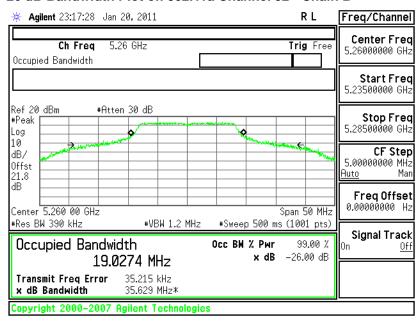
26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A



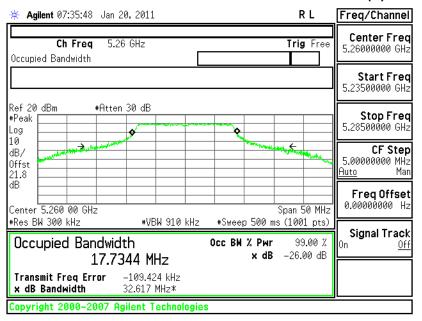
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 52 of 812
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(A)

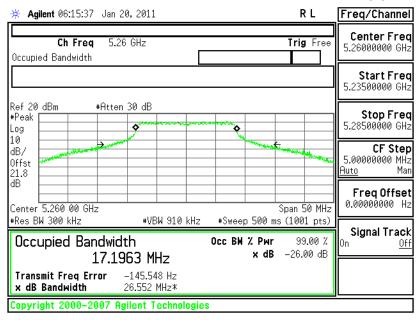


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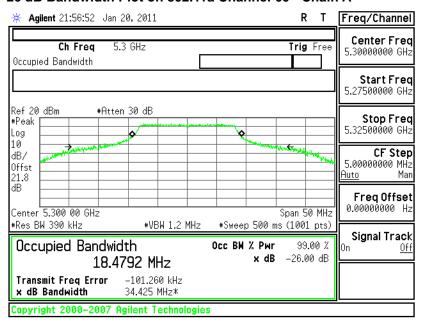
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 53 of 812
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A

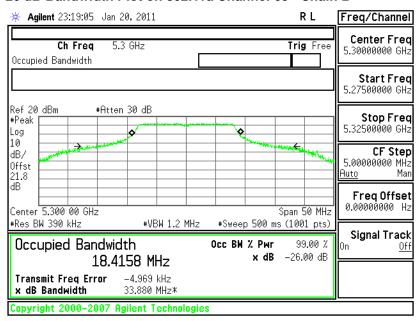


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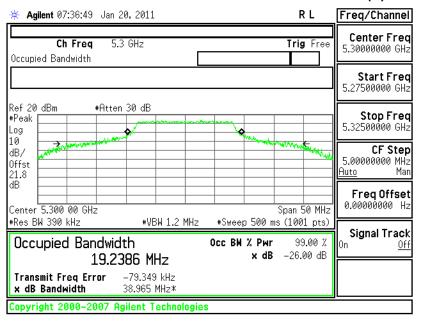
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 54 of 812
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(A)

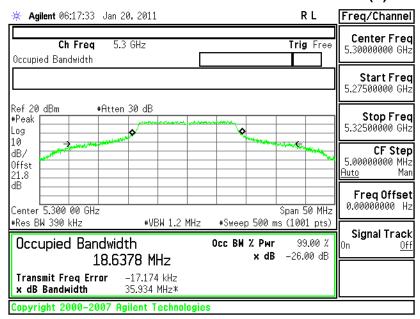


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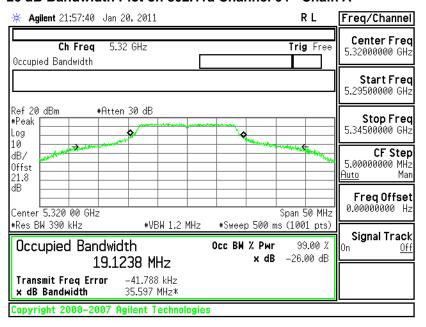
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 55 of 812
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A

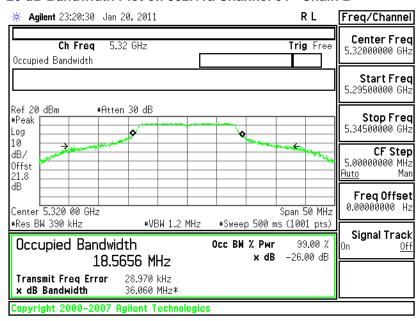


SPORTON INTERNATIONAL INC.

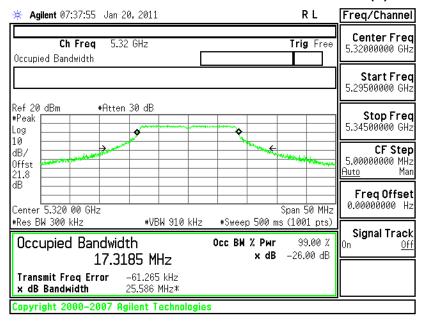
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 56 of 812
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(A)

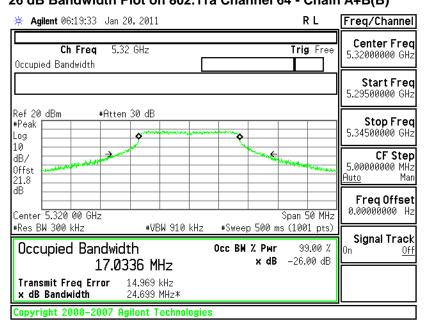


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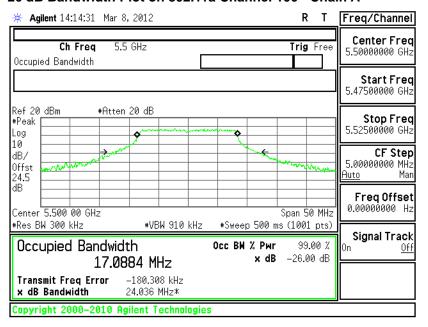
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 57 of 812
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(B)



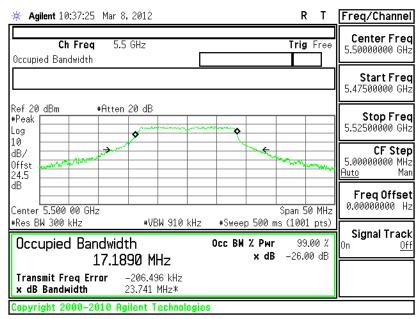
26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A



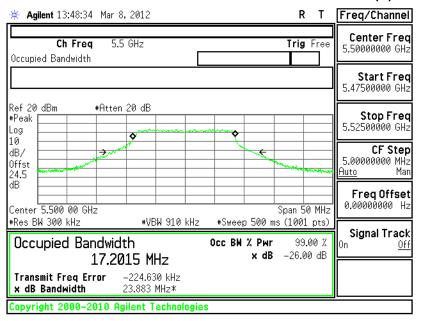
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 58 of 812
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(A)



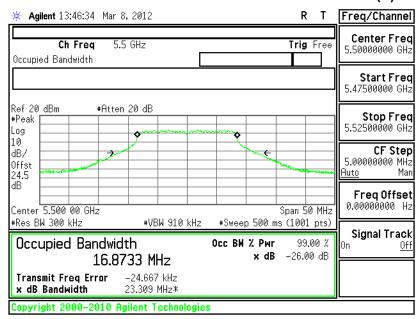
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

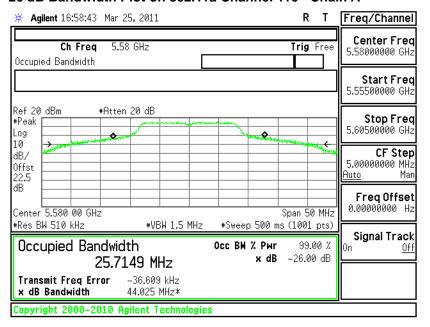
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(B)



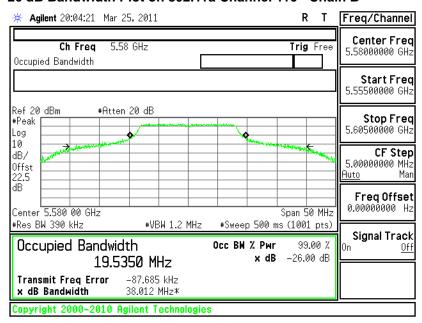
26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A



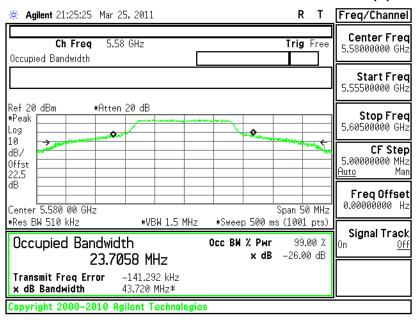
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 60 of 812
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain B



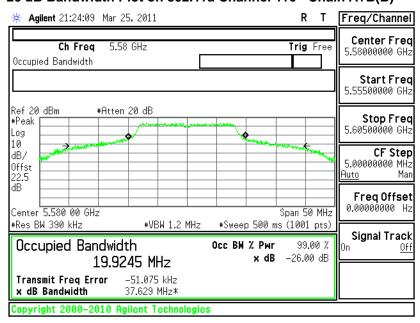
26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(A)



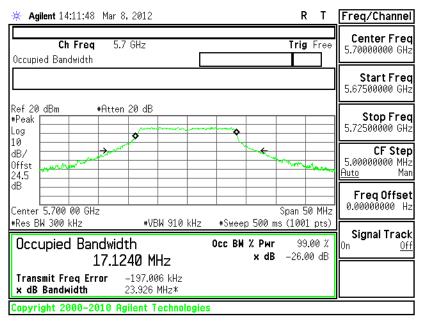
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 61 of 812
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(B)



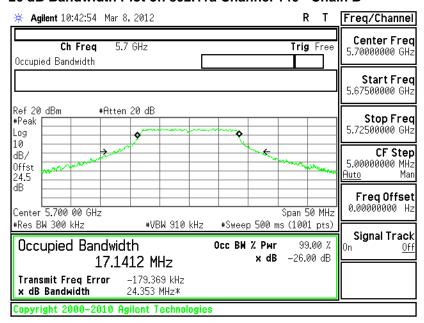
26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A



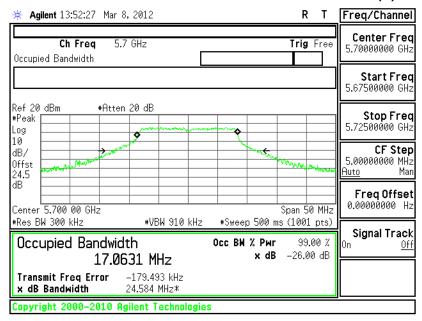
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 62 of 812
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26 dB Bandwidth Plot on 802.11a Channel 140 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(A)



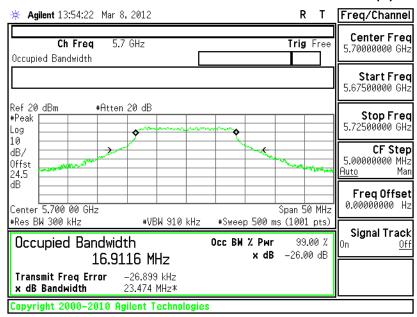
SPORTON INTERNATIONAL INC.

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26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(B)



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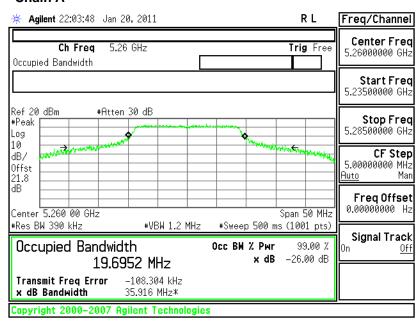
FCC RF Test Report

Test Mode :	Mode 7~12	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency (MHz)		Pass/Fail			
Channel		SISO		MIMO (2Tx)		Pass/Fall
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
52	5260	35.916	35.031	26.312	26.185	N/A
60	5300	30.685	35.137	27.403	30.254	N/A
64	5320	36.315	27.075	26.431	25.515	N/A
100	5500	25.128	24.859	23.635	24.368	N/A
116	5580	47.157	43.075	46.479	44.025	N/A
140	5700	24.980	25.036	23.838	24.117	N/A

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain A



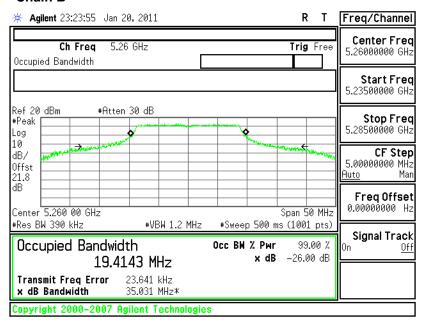
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 65 of 812
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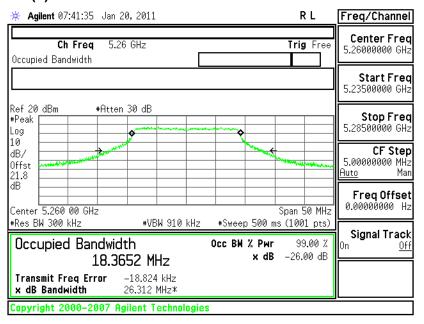


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(A)

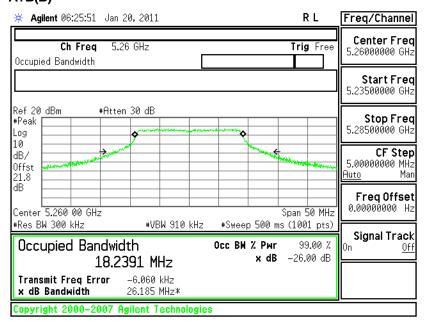


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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 66 of 812
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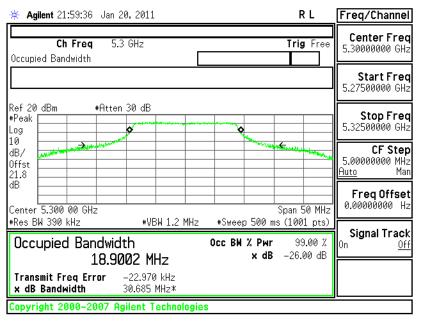


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

- Chain A



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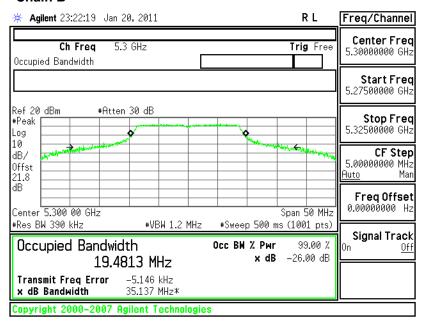


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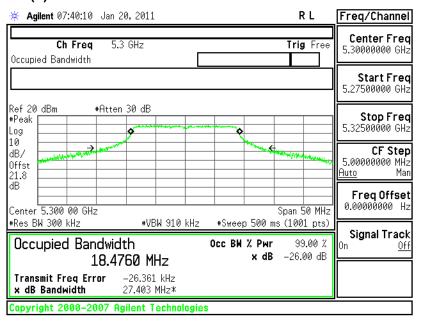
Report No.: FR092308-08

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60 - Chain A+B(A)

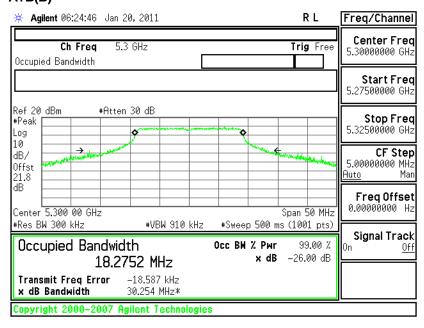


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 68 of 812
Report Issued Date : May 17, 2012
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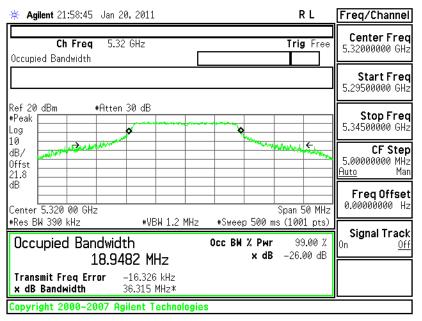


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 69 of 812
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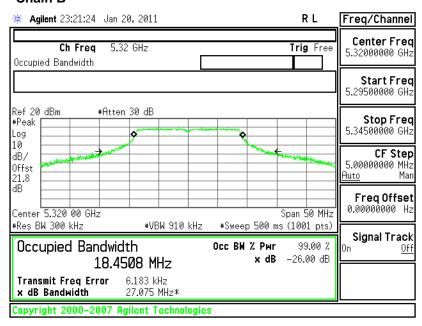
Report No.: FR092308-08

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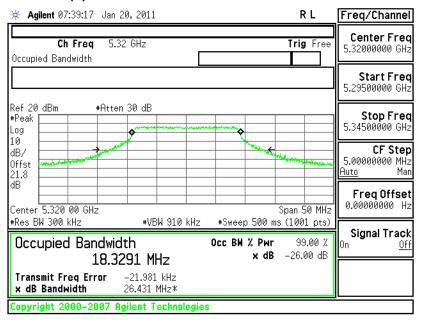


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64 - of Chain A+B(A)



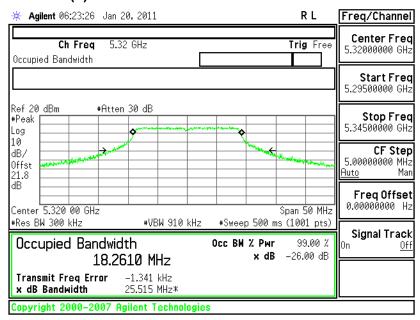
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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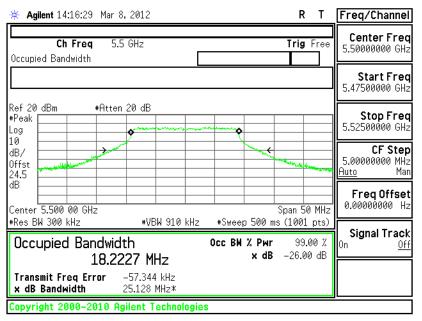


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64 - of Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

- Chain A



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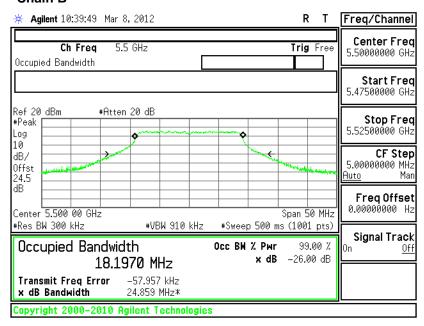
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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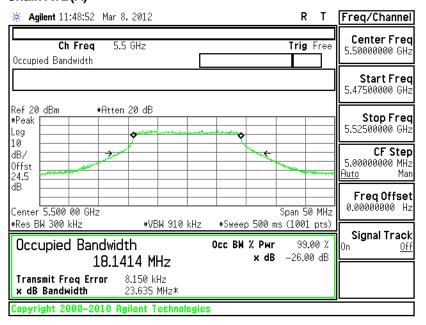


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100 - Chain A+B(A)



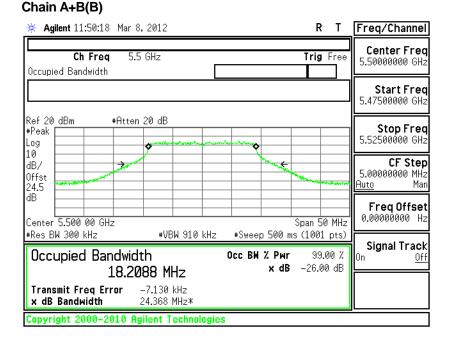
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 72 of 812
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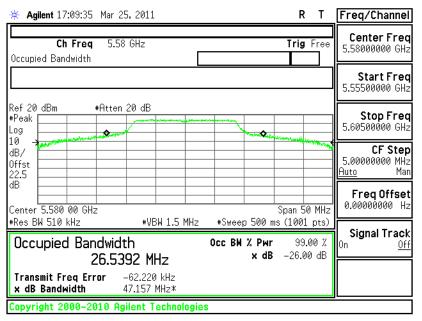


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100 -



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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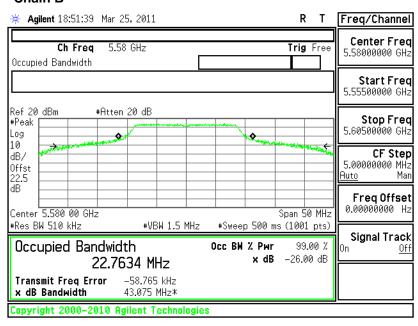
Report No.: FR092308-08

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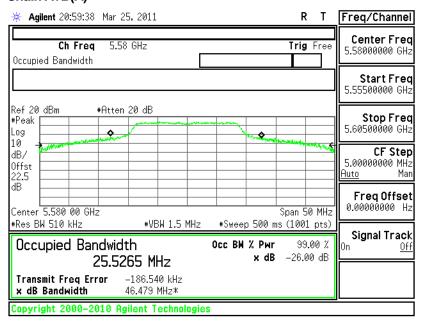


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116 -Chain A+B(A)



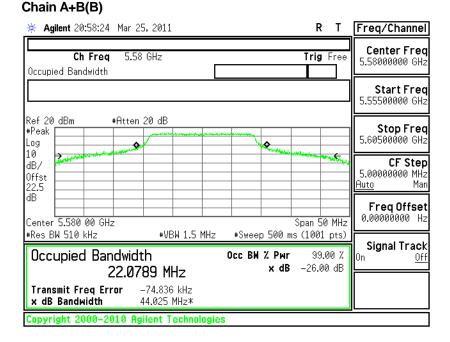
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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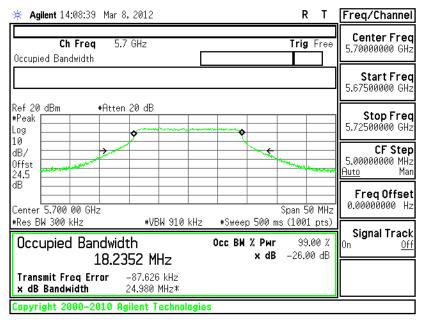


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116 -



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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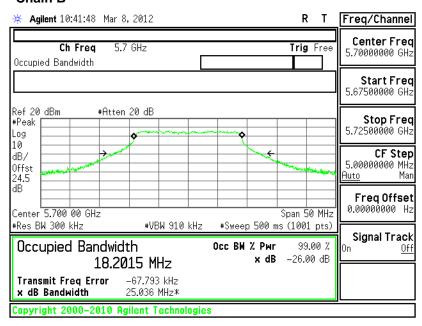
Report No.: FR092308-08

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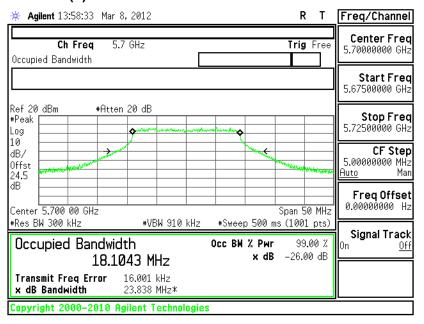


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140 - Chain A+B(A)

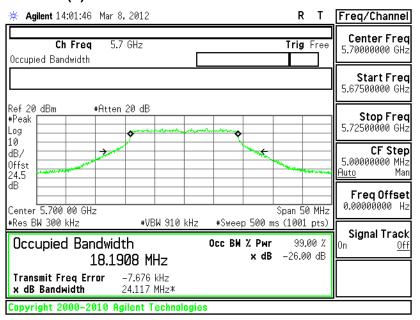


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26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140 - Chain A+B(B)



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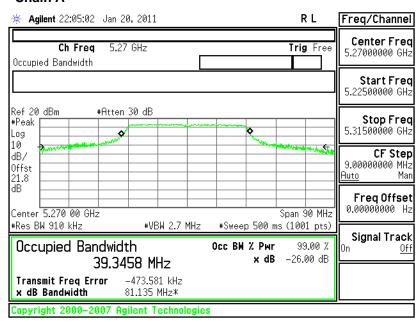
FCC RF Test Report

Test Mode :	Mode 13~17	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency (MHz)		Pass/Fail			
		SISO		MIMO (2Tx)		rass/raii
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
54	5270	81.135	82.083	67.362	69.595	N/A
62	5310	56.179	50.216	51.980	49.837	N/A
102	5510	51.380	52.303	49.108	47.510	N/A
110	5550	86.317	69.682	71.765	61.814	N/A
134	5670	52.470	69.412	48.823	48.206	N/A

26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 78 of 812
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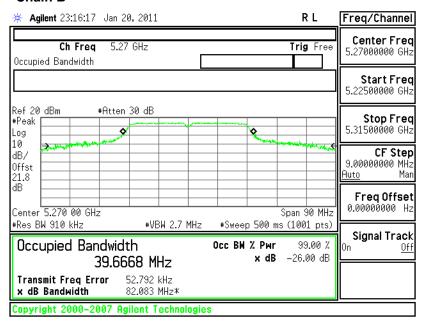


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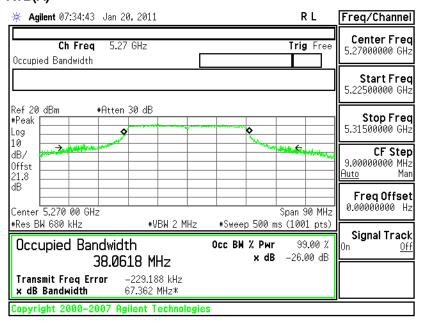
Report No.: FR092308-08

26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54 - Chain A+B(A)

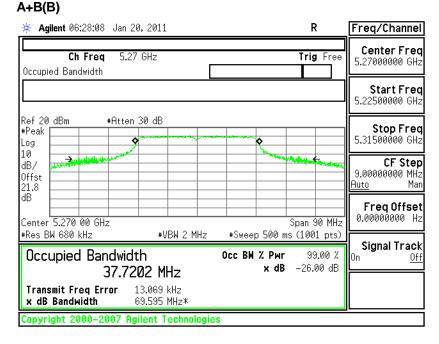


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 79 of 812
Report Issued Date : May 17, 2012
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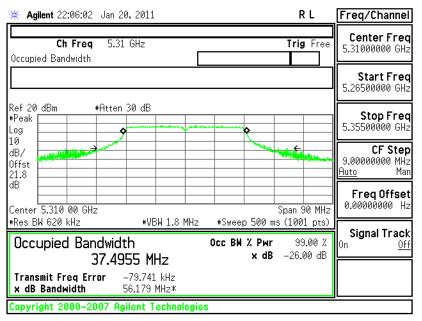


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54 - Chain



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62

- Chain A



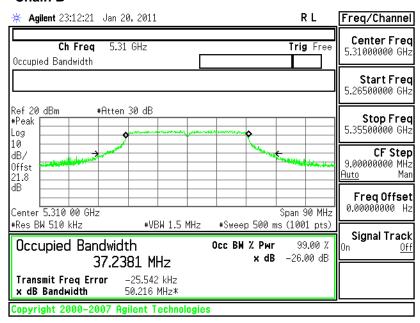
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 80 of 812
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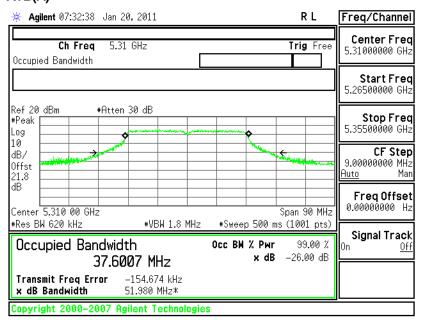


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62 - Chain A+B(A)

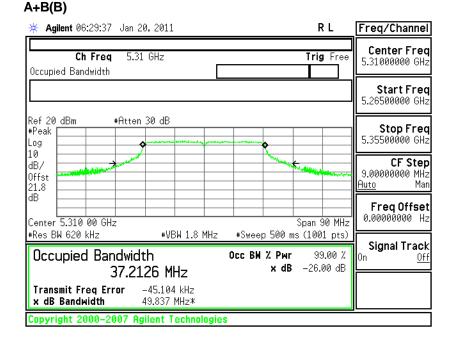


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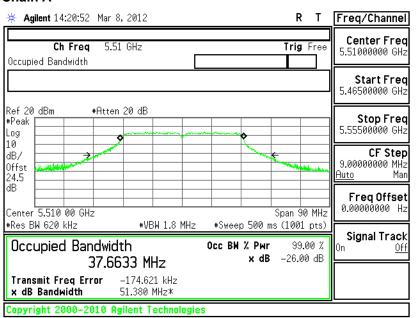
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 81 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62 - Chain



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A



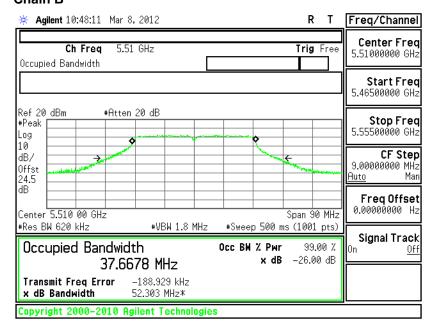
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 82 of 812
Report Issued Date : May 17, 2012

Report No.: FR092308-08

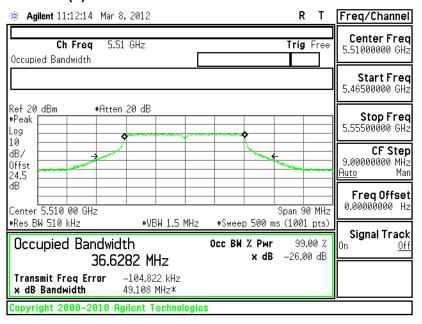
Report Version : Rev. 05



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A+B(A)

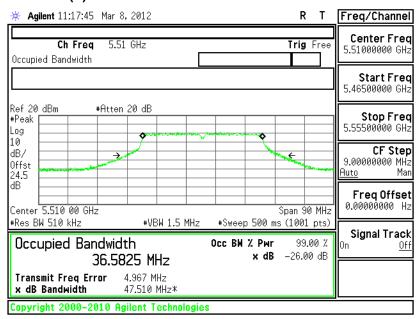


SPORTON INTERNATIONAL INC.

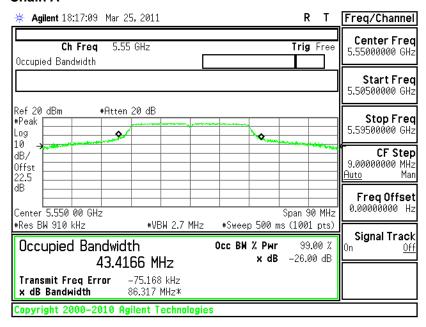
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 83 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 - Chain A



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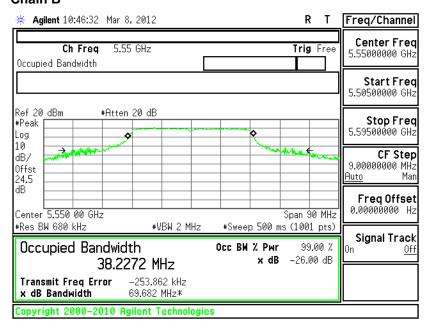
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 84 of 812
Report Issued Date : May 17, 2012

Report No.: FR092308-08

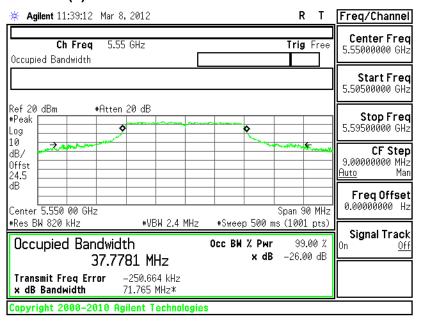
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -Chain A+B(A)



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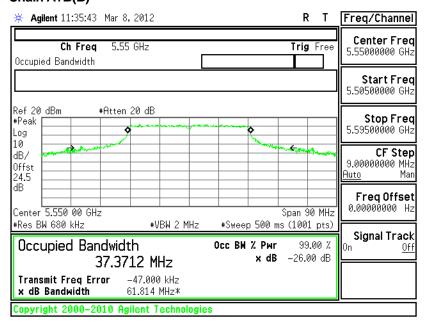
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

Page Number : 85 of 812 Report Issued Date: May 17, 2012 Report Version : Rev. 05

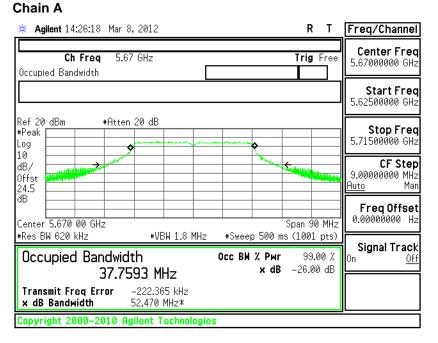


Test Report No. : FR092308-08

26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 -

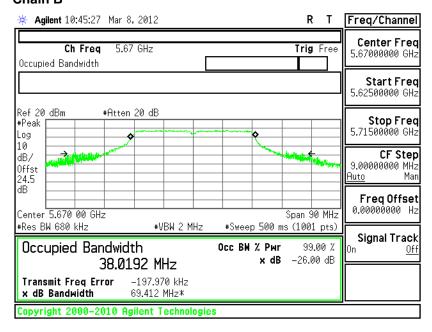


SPORTON INTERNATIONAL INC.

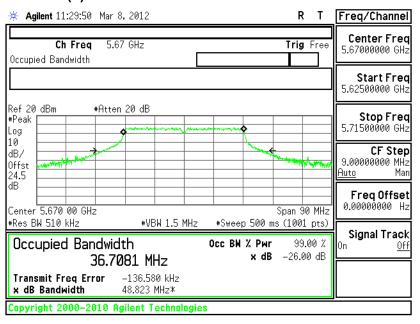
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 86 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 - Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 - Chain A+B(A)

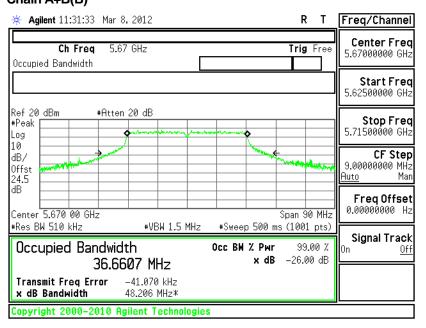


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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 87 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 - Chain A+B(B)



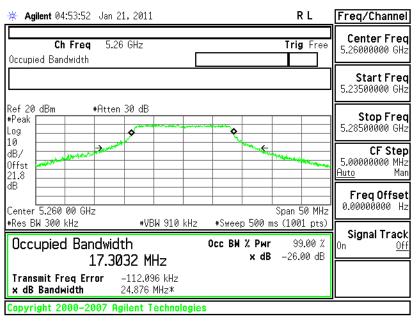
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 88 of 812
Report Issued Date : May 17, 2012
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<Antenna 2 for 4.5V>

Test Mode :	Mode 1~6	Temperature :	23~25℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

	Frequency	802.11a 26dB Bandwidth (MHz)				
Channel	(MHz)	SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B (A)	Chain A+B (B)	
52	5260	24.876	24.403	25.158	24.531	N/A
60	5300	25.164	25.601	24.785	24.928	N/A
64	5320	30.826	26.386	25.657	24.831	N/A
100	5500	24.291	23.951	24.365	23.150	N/A
116	5580	27.264	25.950	24.252	23.806	N/A
140	5700	24.090	23.351	24.336	23.677	N/A

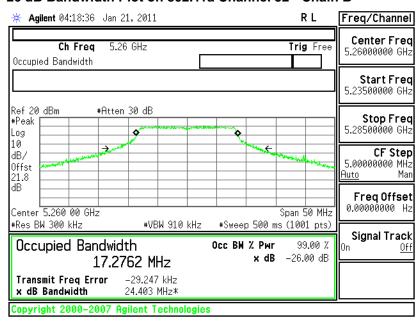
26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A



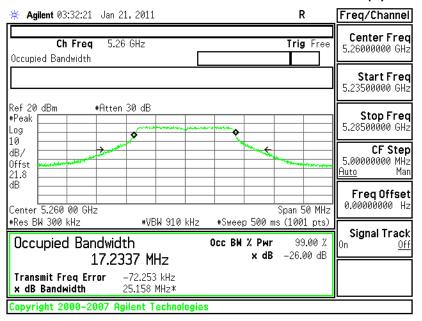
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 89 of 812
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(A)

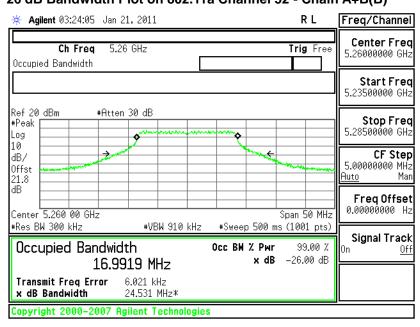


SPORTON INTERNATIONAL INC.

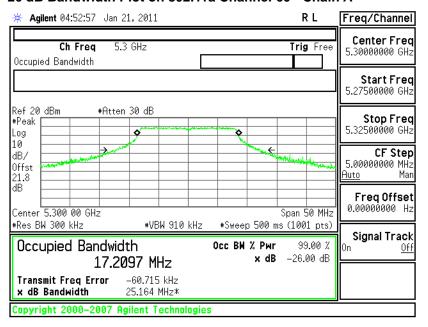
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 90 of 812
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(B)



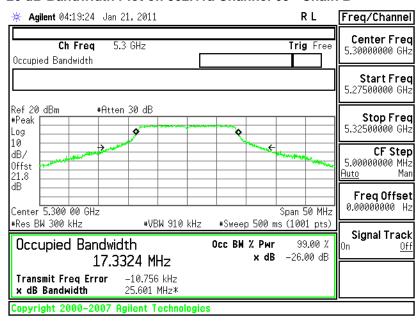
26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A



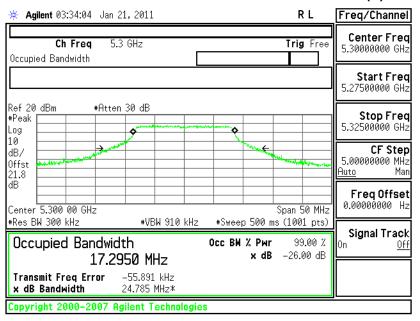
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 91 of 812
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain B



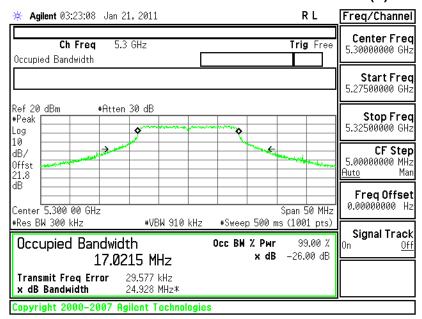
26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(A)



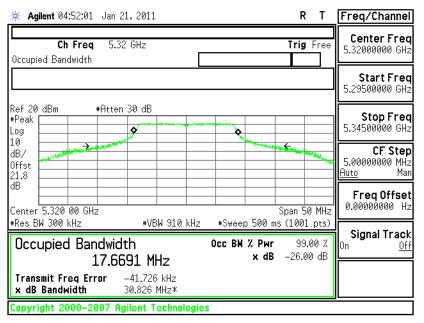
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 92 of 812
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A



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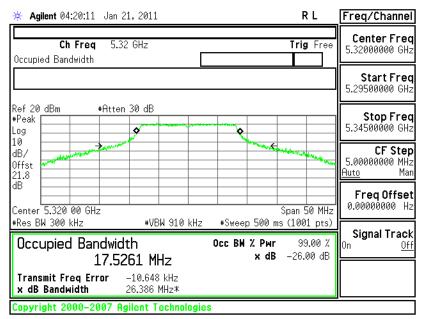
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 93 of 812
Report Issued Date : May 17, 2012
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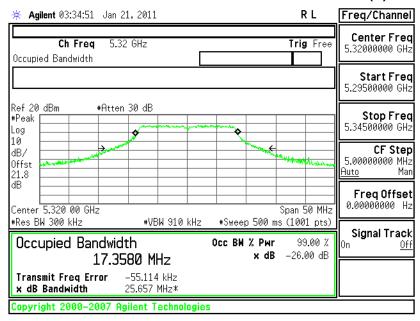
•

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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(A)

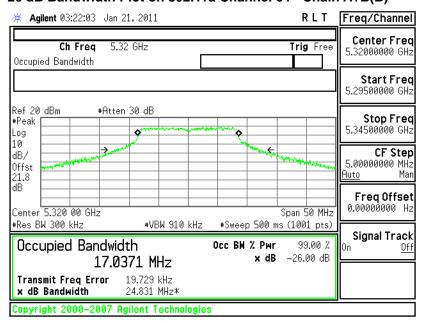


SPORTON INTERNATIONAL INC.

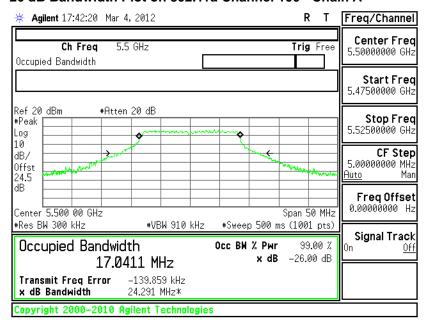
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 94 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(B)



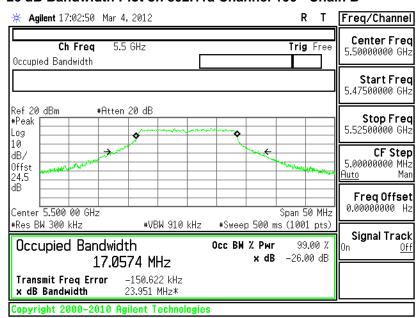
26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A



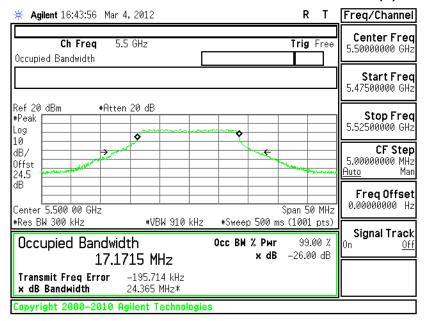
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 95 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(A)

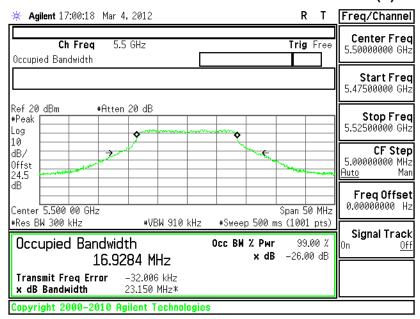


SPORTON INTERNATIONAL INC.

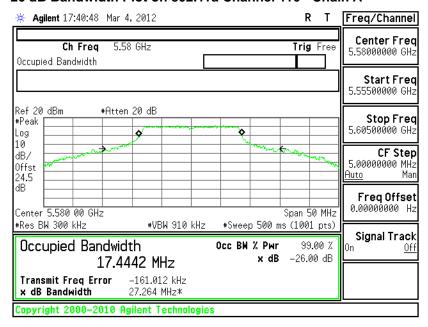
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 96 of 812
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A

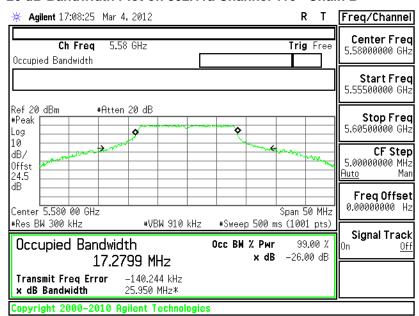


SPORTON INTERNATIONAL INC.

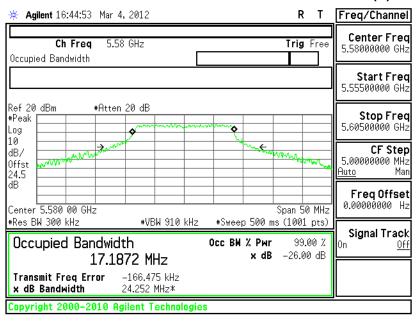
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 97 of 812
Report Issued Date : May 17, 2012
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(A)

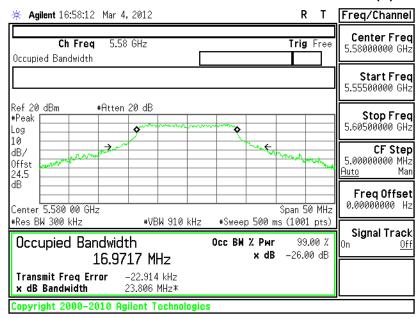


SPORTON INTERNATIONAL INC.

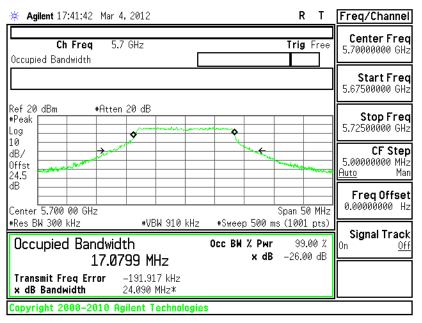
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 98 of 812
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

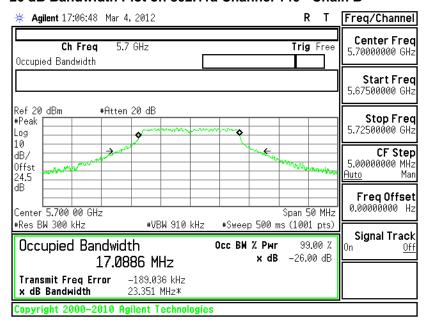
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Report No.: FR092308-08

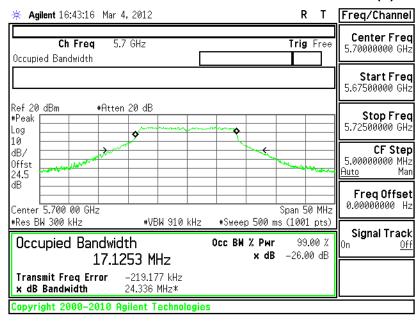
Report Version : Rev. 05



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(A)

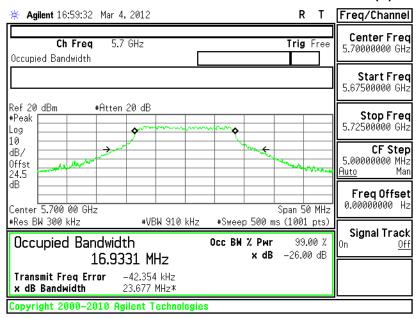


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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 100 of 812
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26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(B)



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 101 of 812
Report Issued Date : May 17, 2012
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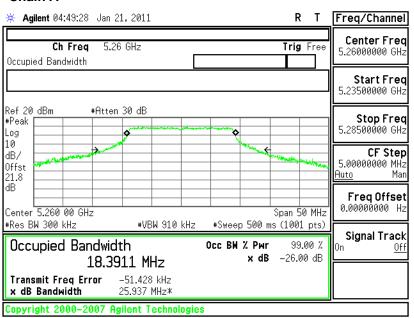
FCC RF Test Report

Test Mode :	Mode 7~12	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Ch ann al	Frequency	802.11n (BW 20MHz) 26dB Bandwidth (MHz)				- /- ··
Channel	(MHz)	SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
52	5260	25.937	26.379	25.376	26.007	N/A
60	5300	25.780	25.891	26.073	26.631	N/A
64	5320	28.731	26.319	26.811	28.608	N/A
100	5500	25.026	24.991	23.954	24.272	N/A
116	5580	42.911	26.745	27.015	24.758	N/A
140	5700	25.166	24.469	23.639	24.542	N/A

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain A



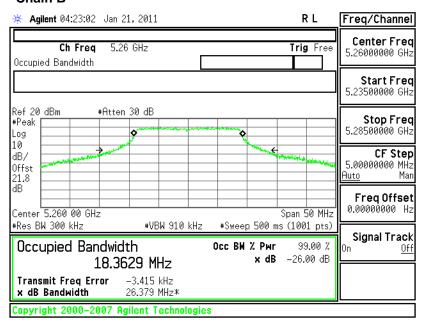
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 102 of 812
Report Issued Date : May 17, 2012
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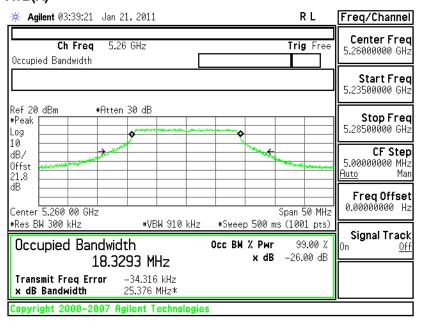


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(A)



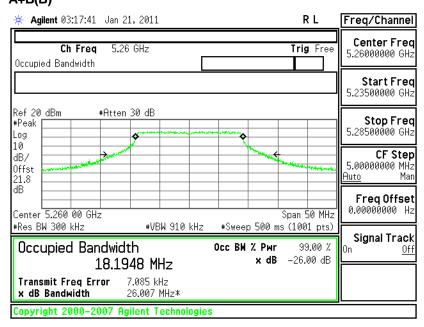
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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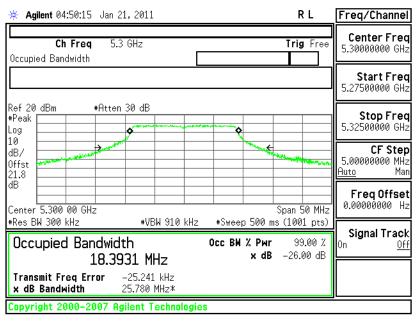


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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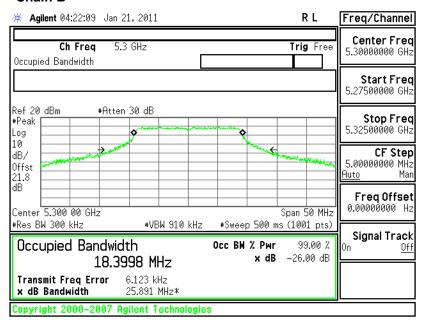
Report No.: FR092308-08

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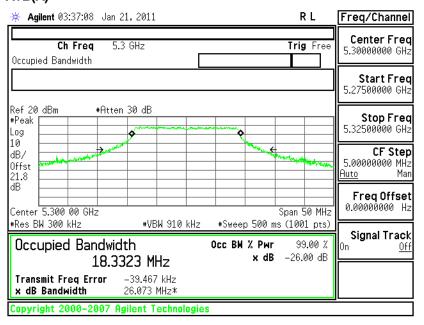


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60 - Chain A+B(A)



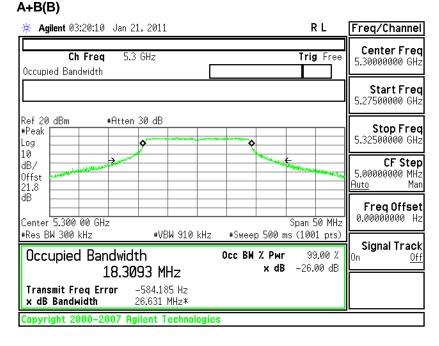
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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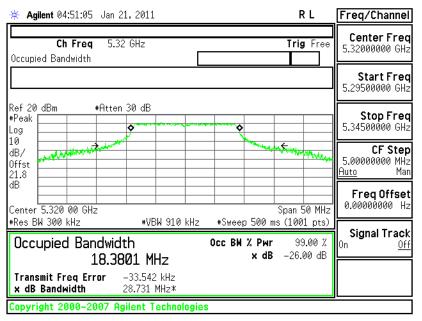


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 60 - Chain



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

- Chain A



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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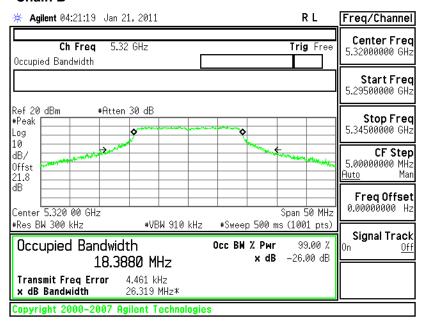
Report Version : Rev. 05



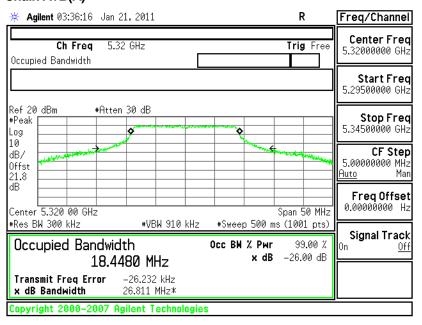
26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64

Report No.: FR092308-08

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64 - of Chain A+B(A)

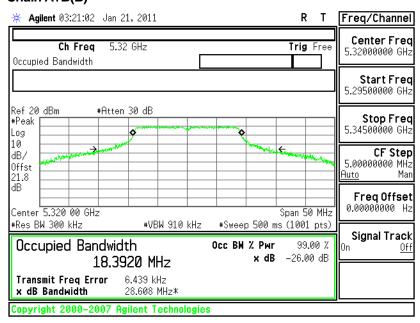


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 107 of 812
Report Issued Date : May 17, 2012
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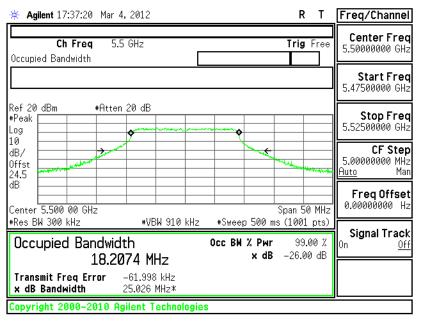


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 64 - of Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

- Chain A



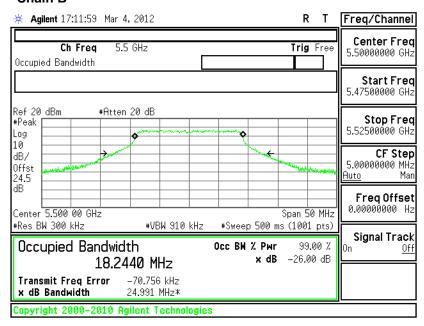
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 108 of 812
Report Issued Date : May 17, 2012
Report Version : Rev. 05

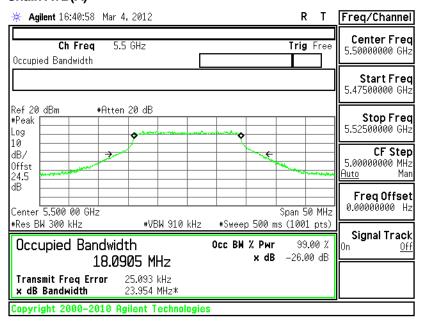


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100 -Chain A+B(A)



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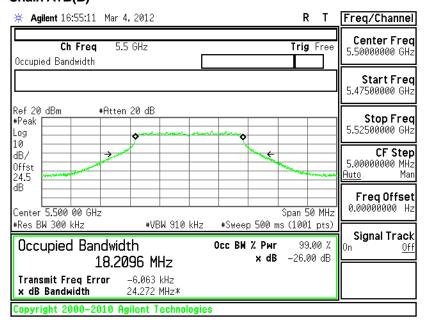
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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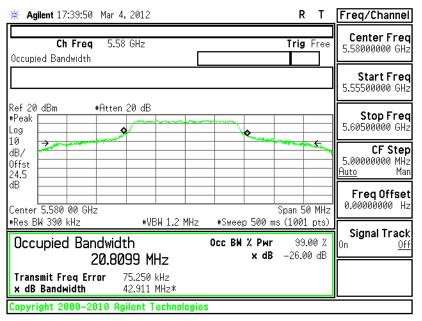


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 100 -Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116

- Chain A



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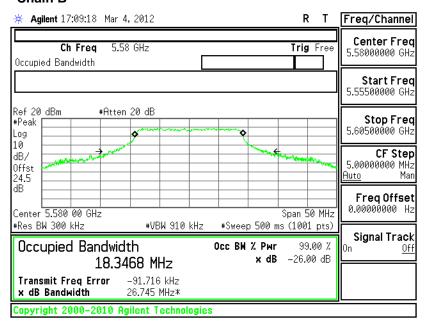
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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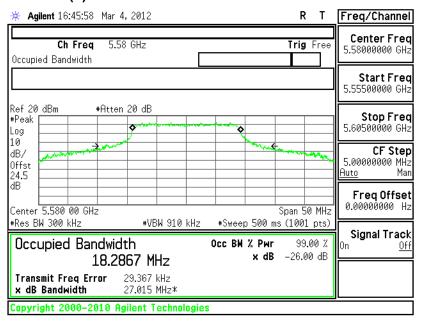


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116 -Chain A+B(A)



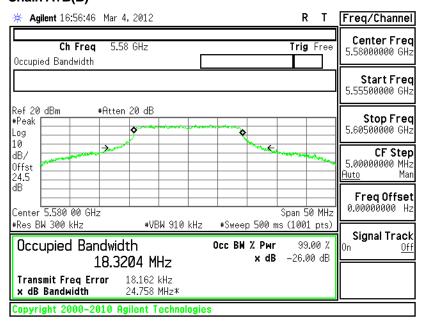
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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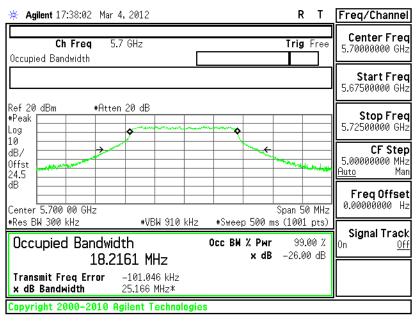


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 116 -Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140

- Chain A



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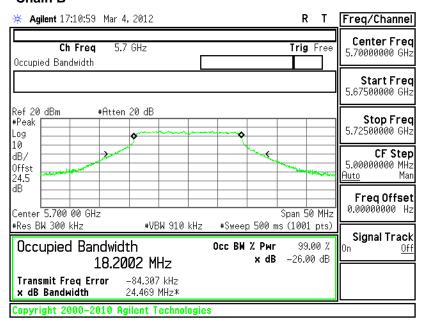
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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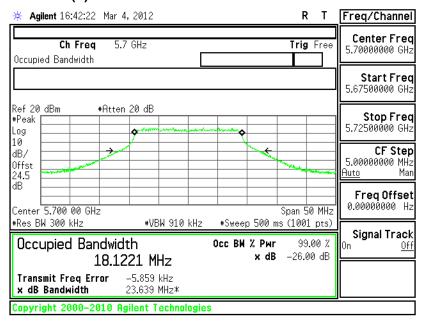


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140 - Chain A+B(A)

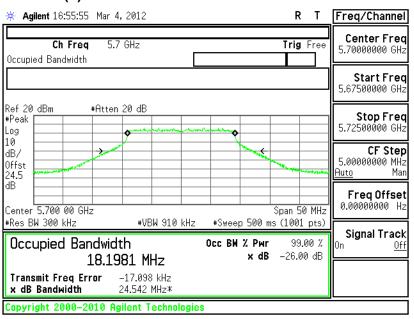


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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 113 of 812
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26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 140 - Chain A+B(B)



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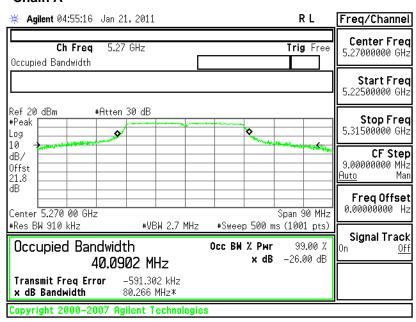
FCC RF Test Report

Test Mode :	Mode 13~17	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency (MHz)		Pass/Fail			
		SISO		MIMO (2Tx)		rass/raii
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
54	5270	80.266	77.263	52.164	49.197	N/A
62	5310	51.810	53.301	52.890	51.036	N/A
102	5510	52.259	53.013	48.410	47.916	N/A
110	5550	70.004	65.084	49.071	48.112	N/A
134	5670	51.061	52.319	47.736	48.637	N/A

26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54

- Chain A



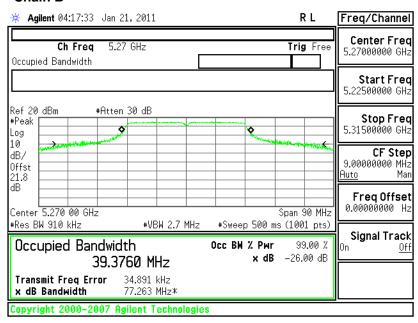
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 115 of 812
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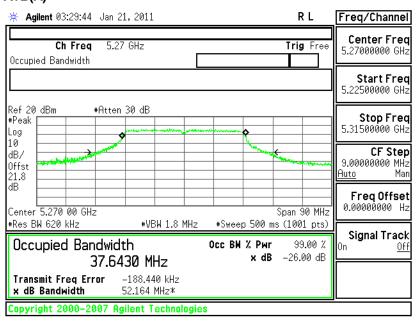


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54 - Chain A+B(A)



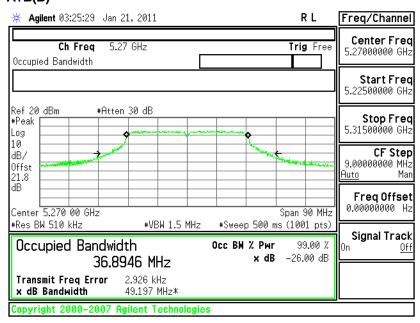
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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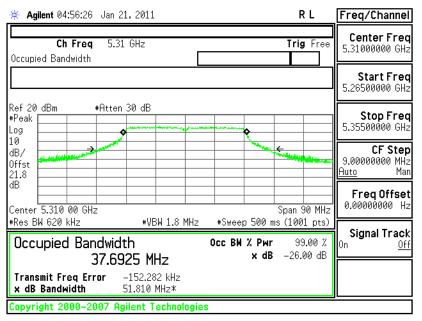


26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 54 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62

- Chain A



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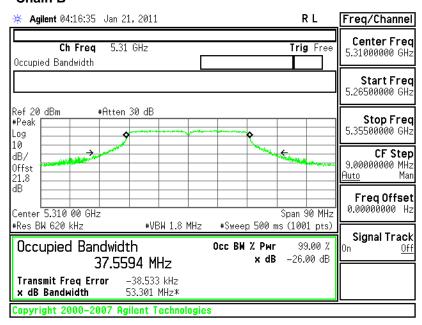
Report Version : Rev. 05



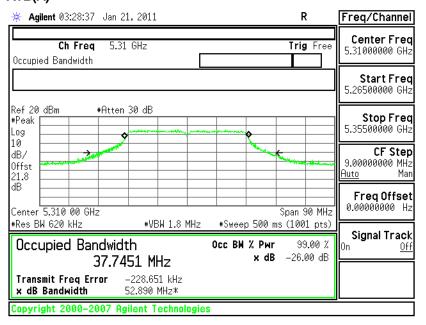
26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62

Report No.: FR092308-08

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62 - Chain A+B(A)



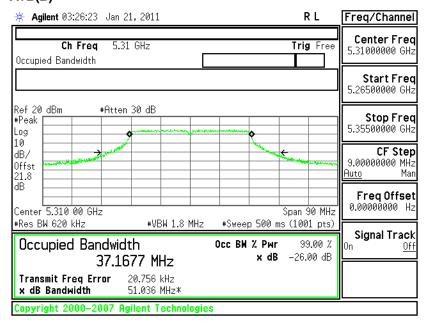
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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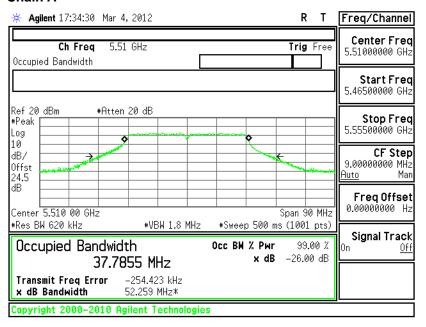
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 62 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A



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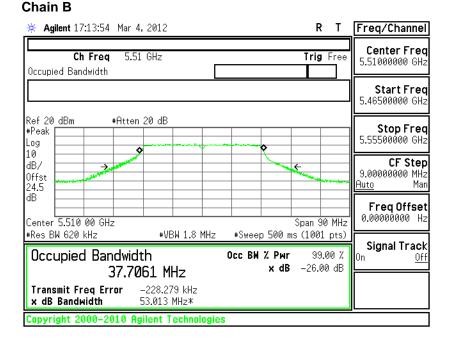
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 119 of 812
Report Issued Date : May 17, 2012

Report No.: FR092308-08

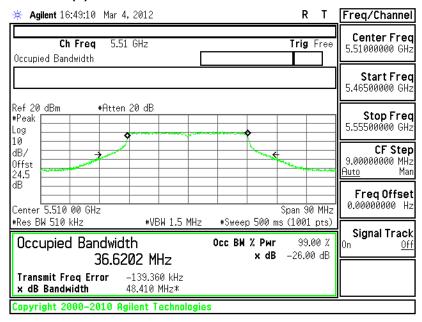
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 -



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 - Chain A+B(A)



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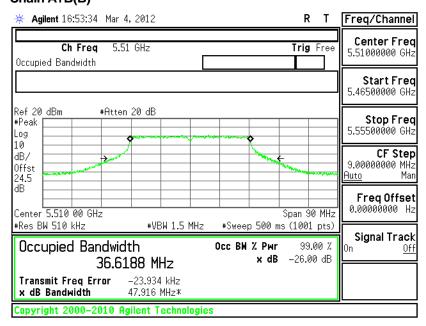
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 120 of 812
Report Issued Date : May 17, 2012

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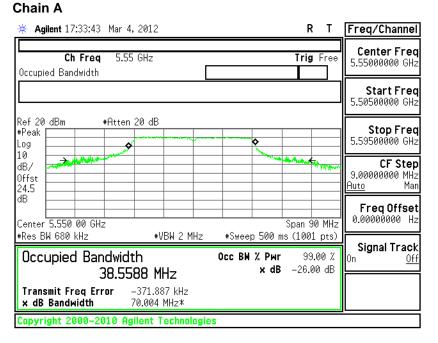
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 102 -Chain A+B(B)



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -



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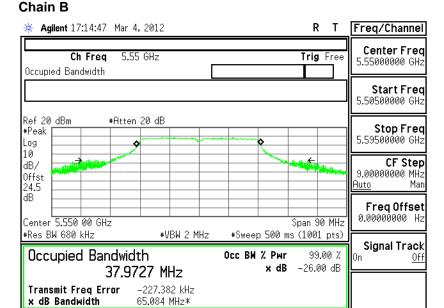
Page Number : 121 of 812 Report Issued Date: May 17, 2012

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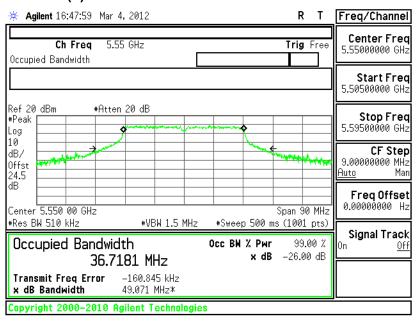
26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -

Report No.: FR092308-08



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 - Chain A+B(A)

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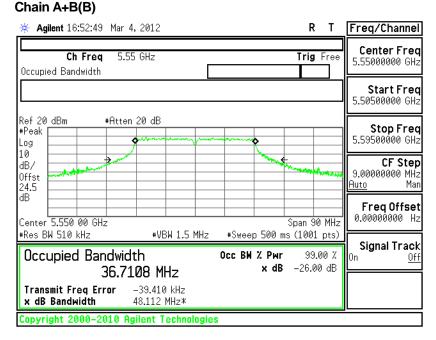
SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 122 of 812 Report Issued Date : May 17, 2012

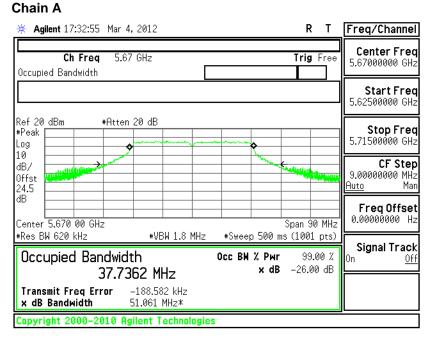
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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 110 -



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 -



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

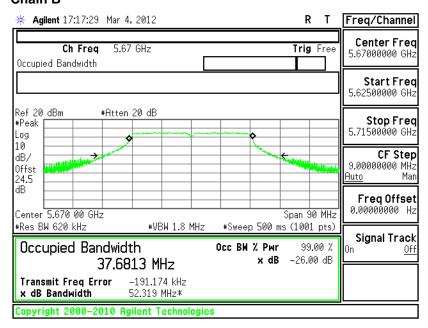
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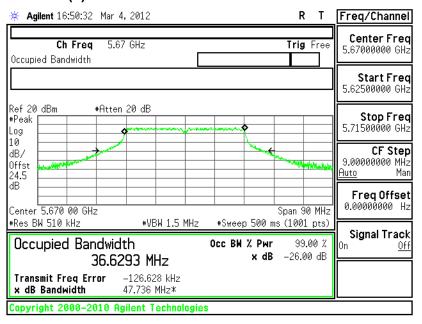
Report Version : Rev. 05



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 -Chain B



26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 -Chain A+B(A)



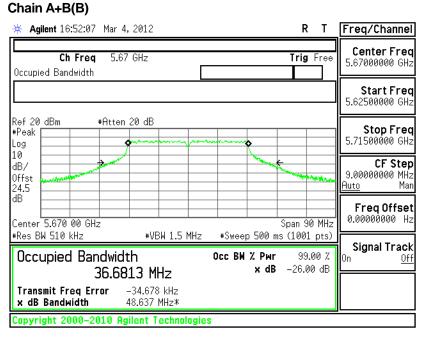
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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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26 dB Bandwidth Plot on 802.11n (BW 40MHz) Channel 134 -



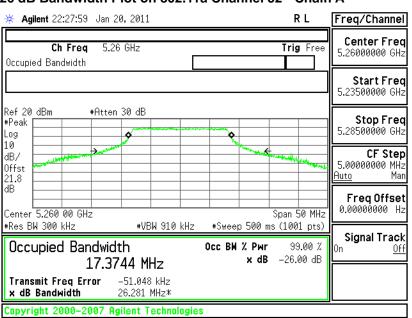
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 125 of 812
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<Antenna 2 for 3.3V>

Test Mode :	Mode 1~6	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)				
		SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B (A)	Chain A+B (B)	
52	5260	26.281	29.122	24.708	24.219	N/A
60	5300	25.045	26.209	24.957	24.163	N/A
64	5320	32.679	28.728	25.616	25.416	N/A
100	5500	23.959	24.087	24.067	23.071	N/A
116	5580	33.195	25.840	25.185	24.573	N/A
140	5700	24.157	23.280	23.899	23.849	N/A

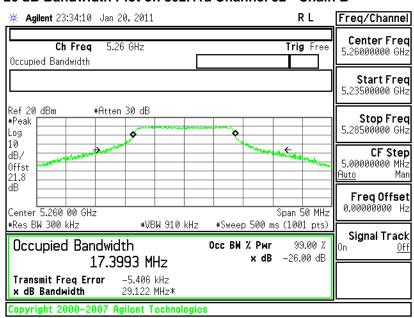
26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A



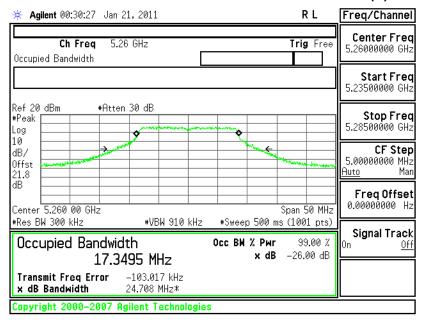
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 126 of 812
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(A)

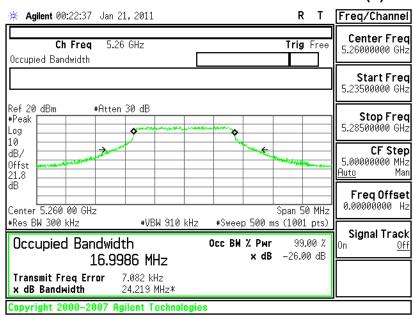


SPORTON INTERNATIONAL INC.

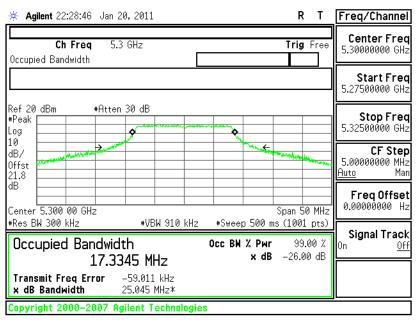
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 127 of 812
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26 dB Bandwidth Plot on 802.11a Channel 52 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A

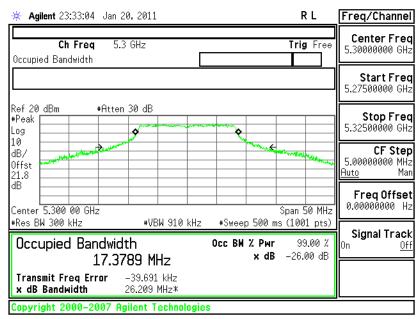


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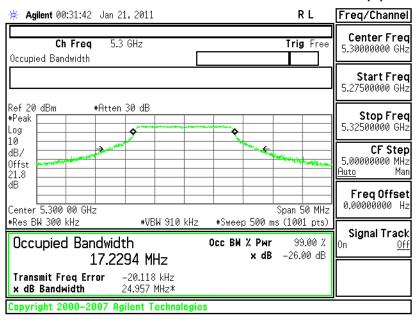
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 128 of 812
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(A)

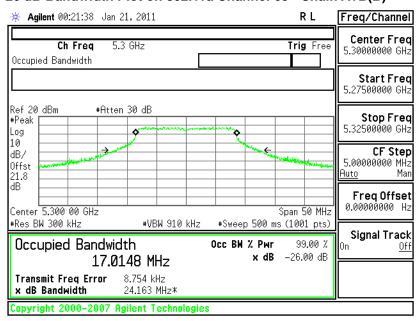


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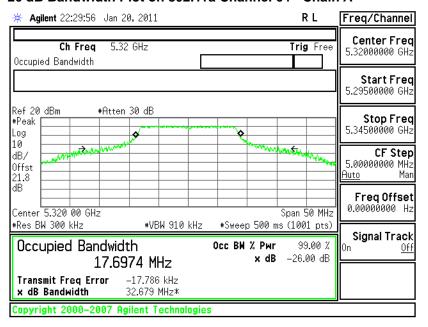
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 129 of 812
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26 dB Bandwidth Plot on 802.11a Channel 60 - Chain A+B(B)



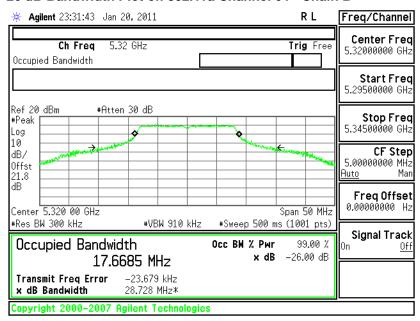
26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A



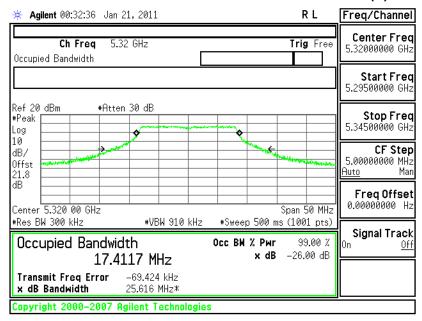
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 130 of 812
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(A)



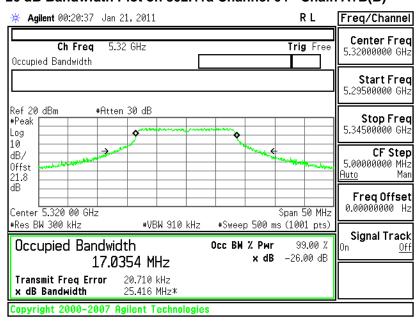
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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

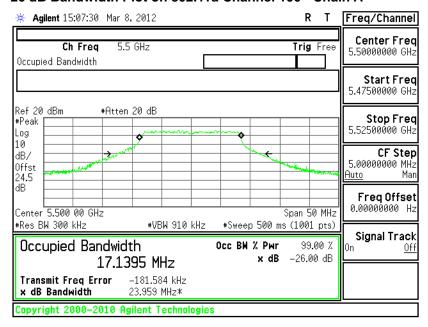
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26 dB Bandwidth Plot on 802.11a Channel 64 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A

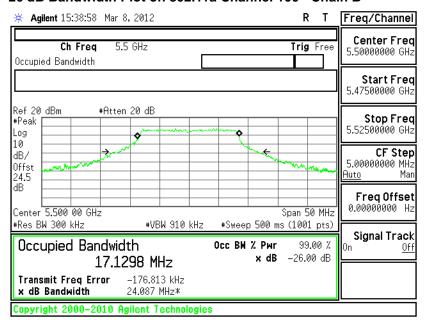


SPORTON INTERNATIONAL INC.

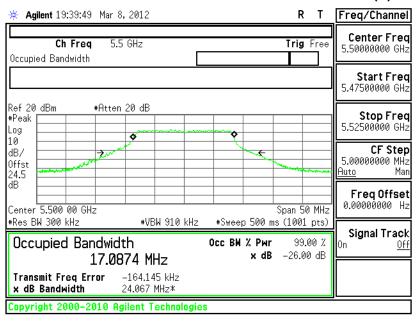
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 132 of 812
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(A)

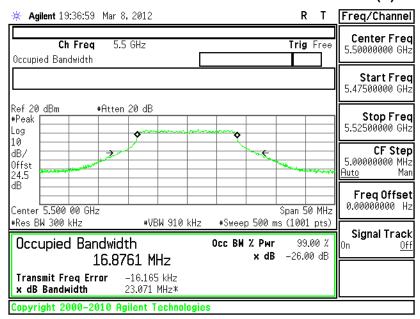


SPORTON INTERNATIONAL INC.

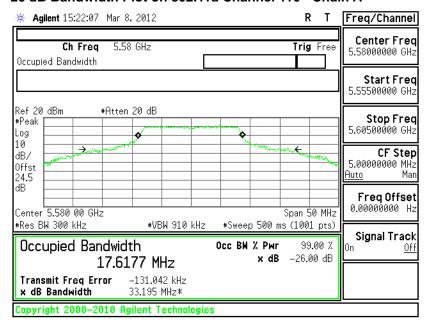
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 133 of 812
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26 dB Bandwidth Plot on 802.11a Channel 100 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A



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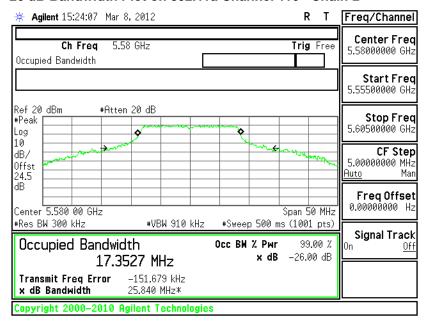
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

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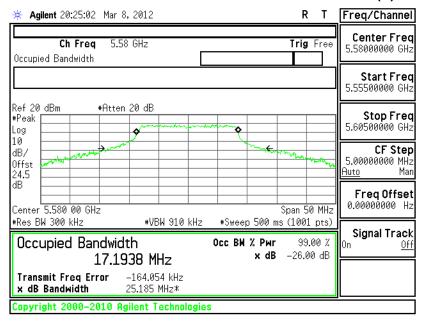
Report Version : Rev. 05



26 dB Bandwidth Plot on 802.11a Channel 116 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(A)

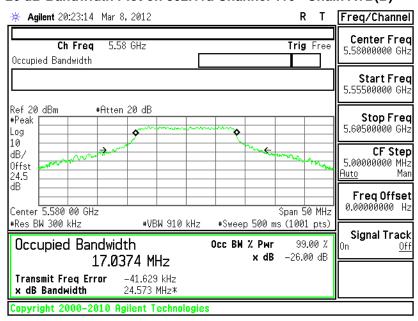


SPORTON INTERNATIONAL INC.

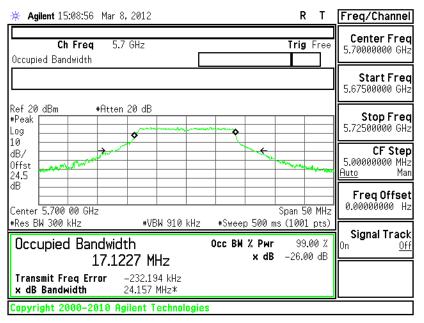
TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 135 of 812
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26 dB Bandwidth Plot on 802.11a Channel 116 - Chain A+B(B)



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A



TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6

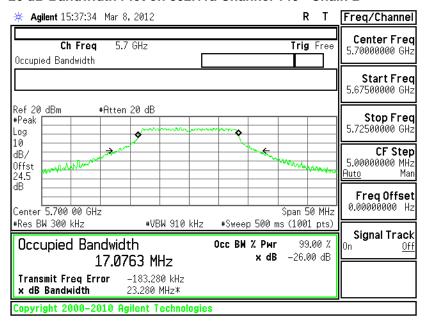
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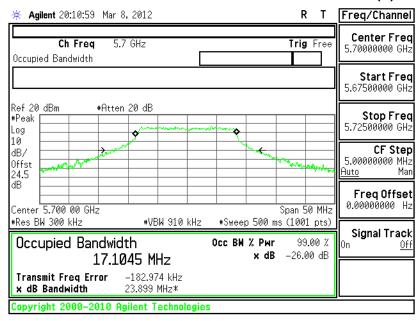
Report Version : Rev. 05



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain B



26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(A)

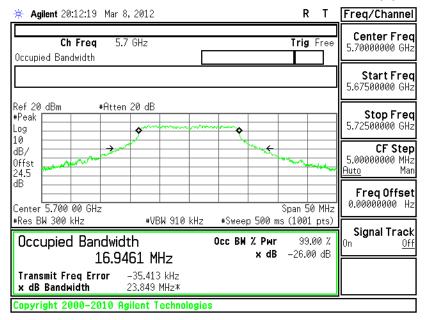


SPORTON INTERNATIONAL INC.

TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 137 of 812
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26 dB Bandwidth Plot on 802.11a Channel 140 - Chain A+B(B)



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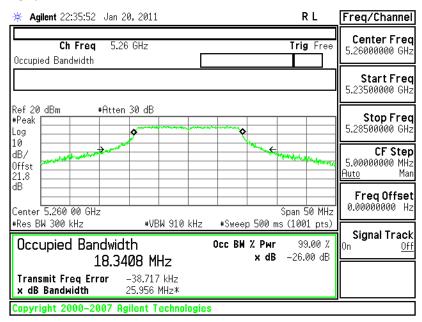
FCC RF Test Report

Test Mode :	Mode 7~12	Temperature :	23~25 ℃
Test Engineer :	Hank Yu	Relative Humidity :	50~53%

Channel	Frequency	802.11n (BW 20MHz) 26dB Bandwidth (MHz)				
	(MHz)	SISO		MIMO (2Tx)		Pass/Fail
		Chain A	Chain B	Chain A+B(A)	Chain A+B(B)	
52	5260	25.956	26.064	25.959	25.474	N/A
60	5300	26.032	26.020	25.751	26.223	N/A
64	5320	29.950	27.748	30.632	30.648	N/A
100	5500	24.693	24.828	23.663	24.230	N/A
116	5580	44.528	26.684	26.309	25.528	N/A
140	5700	24.947	24.767	23.068	24.229	N/A

26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain A



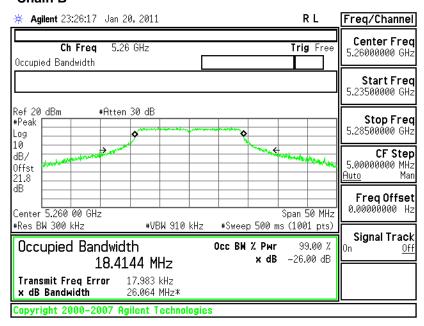
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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 139 of 812
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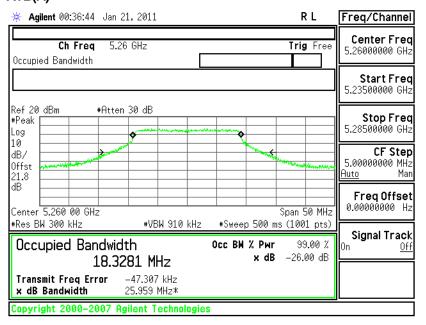


26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52

- Chain B



26 dB Bandwidth Plot on 802.11n (BW 20MHz) Channel 52 - Chain A+B(A)



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TEL: 886-3-327-3456 FAX: 886-3-328-4978 FCC ID: UZ7AP6 Page Number : 140 of 812
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