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FCC RADIO TEST REPORT

Applicant's company	**Motorola Solutions, Inc.**
Applicant Address	One Motorola Plaza Holtsville, NY 11742 USA
FCC ID	**UZ7KHUSB601**
Manufacturer's company	**Wistron NeWeb Corporation**
Manufacturer Address	20 Park Avenue II, Hsinchu Science Park, Hsinchu 308,Taiwan,R.O.C.

Product Name	802.11 a/b/g/n USB module
Brand Name	MOTOROLA
Model No.	KHUSB601
Test Rule Part(s)	47 CFR FCC Part 15 Subpart E § 15.407
Test Freq. Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Received Date	Jun. 20, 2013
Final Test Date	Dec. 10, 2013
Submission Type	Original Equipment
Operating Mode	Client (without radar detection function)

Statement

Test result included is for the IEEE 802.11n and IEEE 802.11a (5150 ~ 5350MHz / 5470 ~ 5725MHz) of the product.

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.10-2009**, **47 CFR FCC Part 15 Subpart E, KDB 789033 D01 v01r03** and **KDB 662911 D01 v02r01**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Testing Laboratory
1190

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History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR250705-02AB	Rev. 01	Initial issue of report	Mar. 11, 2014
FR250705-02AB	Rev. 02	Revising KDB to “KDB 662911 D01 v02r01” from ““KDB 662911 D01 v02”.	Mar. 17, 2014

Certificate No.: CB10207099

1. CERTIFICATE OF COMPLIANCE

Product Name	:	**802.11 a/b/g/n USB module**
Brand Name	:	**MOTOROLA**
Model No.	:	**KHUSB601**
Applicant	:	**Motorola Solutions, Inc.**
Test Rule Part(s)	:	**47 CFR FCC Part 15 Subpart E § 15.407**

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jun. 20, 2013 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Sam Chen
SPORTON INTERNATIONAL INC.

2. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart E				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	14.89 dB
4.2	15.407(a)	26dB Spectrum Bandwidth & 99% Occupied Bandwidth	Complies	-
4.3	15.407(a)	Maximum Conducted Output Power	Complies	0.15 dB
4.4	15.407(a)	Power Spectral Density	Complies	0.02 dB
4.5	15.407(a)	Peak Excursion	Complies	2.26 dB
4.6	15.407(b)	Radiated Emissions	Complies	3.02 dB
4.7	15.407(b)	Band Edge Emissions	Complies	1.00 dB
4.8	15.407(g)	Frequency Stability	Complies	-
4.9	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n

Items	Description
Product Type	WLAN (1/2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From host system
Modulation	see the below table for IEEE 802.11n
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16 for 20MHz bandwidth ; 7 for 40MHz bandwidth
Channel Band Width (99%)	1TX : MCS0(20MHz) : 28.80 MHz ; MCS0(40MHz) : 53.12 MHz 2TX : MCS0(20MHz) : 20.64 MHz ; MCS0(40MHz) : 42.56 MHz MCS8(20MHz) : 21.12 MHz ; MCS8(40MHz) : 44.80 MHz
Maximum Conducted Output Power	1TX : Band 1: MCS0 (20MHz): 16.46 dBm ; MCS0 (40MHz): 16.12 dBm Band 2: MCS0 (20MHz): 16.58 dBm ; MCS0 (40MHz): 16.01 dBm Band 3: MCS0 (20MHz): 16.31 dBm ; MCS0 (40MHz): 16.07 dBm 2TX : Band 1: MCS0 (20MHz): 14.04 dBm ; MCS0 (40MHz): 16.36 dBm Band 2: MCS0 (20MHz): 18.03 dBm ; MCS0 (40MHz): 19.15 dBm Band 3: MCS0 (20MHz): 17.50 dBm ; MCS0 (40MHz): 18.69 dBm 2TX : Band 1: MCS8(20MHz): 16.50 dBm ; MCS8(40MHz): 16.47 dBm Band 2: MCS8(20MHz): 19.88 dBm ; MCS8(40MHz): 20.57 dBm Band 3: MCS8(20MHz): 17.12 dBm ; MCS8(40MHz): 19.00 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a

Items	Description
Product Type	WLAN (1/2TX, 2RX)
Radio Type	Intentional Transceiver
Power Type	From host system
Modulation	OFDM for IEEE 802.11a
Data Modulation	OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	OFDM (6/9/12/18/24/36/48/54)
Frequency Range	5150 ~ 5350MHz / 5470 ~ 5725MHz
Channel Number	16
Maximum Conducted Output Power	1TX:Band 1: 16.49 dBm ; Band 2: 16.43 dBm ; Band 3: 16.34 dBm 2TX:Band 1: 13.97 dBm ; Band 2: 17.81 dBm ; Band 3: 16.80 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Antenna & Band width

Antenna	Single (TX)		Two (TX)	
Band width Mode	20 MHz	40 MHz	20 MHz	40 MHz
IEEE 802.11a	V	X	V	X
IEEE 802.11n	V	V	V	V

IEEE 11n Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20)	1, 2	MCS 0-15
802.11n (HT40)	1, 2	MCS 0-15
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT support HT20 and HT40. Note 2: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n		

3.2. Accessories

N/A

3.3. Table for Filed Antenna

Ant.	Brand	Model No.	Antenna Type	Connector	Gain (dBi)		Loss of External Cable		True Gain (dBi)	
					2.4GHz	5GHz	2.4GHz	5GHz	2.4GHz	5GHz
1	MOTOROLA	ML-2452-HPAG5A8-01	Dipole	N male	5	8	1	1.65	4	6.35
2	MOTOROLA	ML-2452-APA2-01	Dipole	RP-SMA Male	3.17	4.60	1	1.65	2.17	2.95
3	MOTOROLA	ML-2452-HPA6M6-072	Dipole	SMA-RP-Male	2.8	6.5	1	1.65	1.8	4.85

Note: The EUT has three antennas.

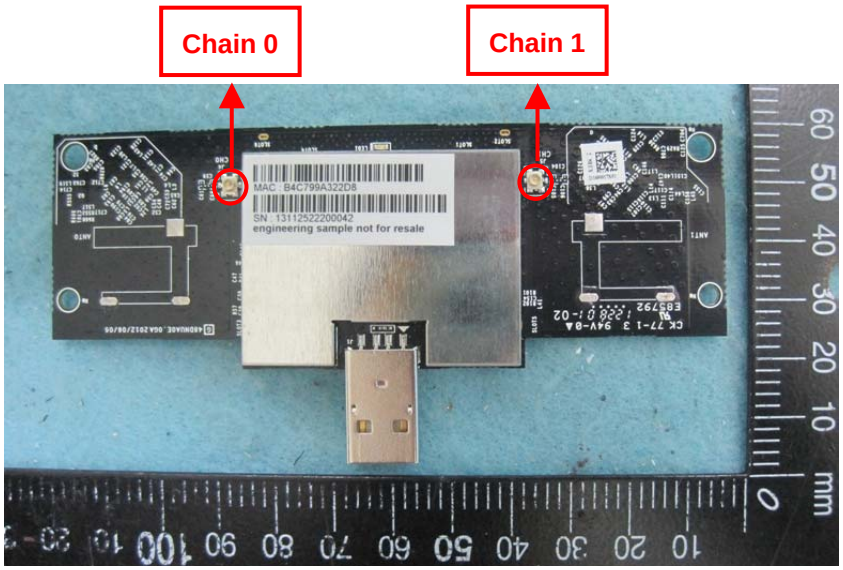
Because Ant. 1, Ant. 2 and Ant. 3 are the same type antennas, only the higher gain antenna "Ant. 1" was tested and recorded in the report.

For IEEE 802.11a/b/g/n mode (1TX/2RX):

Only Chan. 0 can be used as transmitting, but Chan. 0 and Chan. 1 could receive simultaneously.

For IEEE 802.11a/b/g/n mode (2TX/2RX):

Chain 0 and Chain 1 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

The EUT has two bandwidth system.

For 20MHz bandwidth systems, use Channel 36, 40, 44, 48, 52, 56, 60, 64, 100, 104, 108, 112, 116, 132, 136, 140.

For 40MHz bandwidth systems, use Channel 38, 46, 54, 62, 102, 110, 134.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5150~5250 MHz Band 1	36	5180 MHz	44	5220 MHz
	38	5190 MHz	46	5230 MHz
	40	5200 MHz	48	5240 MHz
5250~5350 MHz Band 2	52	5260 MHz	60	5300 MHz
	54	5270 MHz	62	5310 MHz
	56	5280 MHz	64	5320 MHz
5470~5725 MHz Band 3	100	5500 MHz	116	5580 MHz
	102	5510MHz	132	5660 MHz
	104	5520 MHz	134	5670 MHz
	108	5540 MHz	136	5680 MHz
	110	5550 MHz	140	5700 MHz
	112	5560 MHz	-	-

3.5. Table for Product Information

Items	Description	
Communication Mode	☒ IP Based (Load Based)	☐ Frame Based
TPC Function	☐ With TPC	☒ Without TPC
Weather Band (5600~5650MHz)	☐ With 5600~5650MHz	☒ Without 5600~5650MHz
Beamforming Function	☐ With beamforming	☒ Without beamforming

3.6. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode		Data Rate	Channel	Chain
AC Power Conducted Emission	Normal Link		-	-	-
Max. Conducted Output Power	11n 20MHz	Band 1~2	MCS0	36/40/48/52/60/64	0 0+1
		Band 3	MCS0	100/116/140	0 0+1
	11n 20MHz	Band 1~2	MCS8	36/40/48/52/60/64	0+1
		Band 3	MCS8	100/116/140	0+1
	11n 40MHz	Band 1~2	MCS0	38/46/54/62	0 0+1
		Band 3	MCS0	102/110/134	0 0+1
	11n 40MHz	Band 1~2	MCS8	38/46/54/62	0+1
		Band 3	MCS8	102/110/134	0+1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	0 0+1
		Band 3	6Mbps	100/116/140	0 0+1
Power Spectral Density	11n 20MHz	Band 1~2	MCS0	36/40/48/52/60/64	0 0+1
		Band 3	MCS0	100/116/140	0 0+1
	11n 20MHz	Band 1~2	MCS8	36/40/48/52/60/64	0+1
		Band 3	MCS8	100/116/140	0+1
	11n 40MHz	Band 1~2	MCS0	38/46/54/62	0 0+1
		Band 3	MCS0	102/110/134	0 0+1
	11n 40MHz	Band 1~2	MCS8	38/46/54/62	0+1
		Band 3	MCS8	102/110/134	0+1

26dB Spectrum Bandwidth 99% Occupied Bandwidth Measurement	11n 20MHz	Band 1~2	MCS0	36/40/48/52/60/64	0 0+1
		Band 3	MCS0	100/116/140	0 0+1
	11n 20MHz	Band 1~2	MCS8	36/40/48/52/60/64	0+1
		Band 3	MCS8	100/116/140	0+1
	11n 40MHz	Band 1~2	MCS0	38/46/54/62	0 0+1
		Band 3	MCS0	102/110/134	0 0+1
	11n 40MHz	Band 1~2	MCS8	38/46/54/62	0+1
		Band 3	MCS8	102/110/134	0+1
Peak Excursion	11n 20MHz	Band 1~2	MCS0	36/40/48/52/60/64	0 0+1
		Band 3	MCS0	100/116/140	0 0+1
	11n 20MHz	Band 1~2	MCS8	36/40/48/52/60/64	0+1
		Band 3	MCS8	100/116/140	0+1
	11n 40MHz	Band 1~2	MCS0	38/46/54/62	0 0+1
		Band 3	MCS0	102/110/134	0 0+1
	11n 40MHz	Band 1~2	MCS8	38/46/54/62	0+1
		Band 3	MCS8	102/110/134	0+1
Radiated Emission Below 1GHz	Normal Link		-	-	-
Radiated Emission Above 1GHz	11n 20MHz	Band 1~2	MCS0	36/40/48/52/60/64	0 0+1
		Band 3	MCS0	100/116/140	0 0+1
	11n 20MHz	Band 1~2	MCS8	36/40/48/52/60/64	0+1
		Band 3	MCS8	100/116/140	0+1
	11n 40MHz	Band 1~2	MCS0	38/46/54/62	0 0+1
		Band 3	MCS0	102/110/134	0 0+1
	11n 40MHz	Band 1~2	MCS8	38/46/54/62	0+1
		Band 3	MCS8	102/110/134	0+1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	0 0+1
		Band 3	6Mbps	100/116/140	0 0+1

Band Edge Emission	11n 20MHz	Band 1~2	MCS0	36/40/48/52/60/64	0 0+1
		Band 3	MCS0	100/140	0 0+1
	11n 20MHz	Band 1~2	MCS8	36/40/48/52/60/64	0+1
		Band 3	MCS8	100/140	0+1
	11n 40MHz	Band 1~2	MCS0	38/46/54/62	0 0+1
		Band 3	MCS0	102/110/134	0 0+1
	11n 40MHz	Band 1~2	MCS8	38/46/54/62	0+1
		Band 3	MCS8	102/110/134	0+1
	11a/BPSK	Band 1~2	6Mbps	36/40/48/52/60/64	0 0+1
		Band 3	6Mbps	100/140	0 0+1
Frequency Stability	Un-modulation		-	40/60	N/A

Note: 1. For HT20/40 2TX, MCS8 ~ 15 (2-stream), MCS0 ~ 7 (1-stream).

2. 11a 1TX/2TX just test ouput power and radiated emission,the other test items are covered by 802.11n HT20 1TX/2TX(MCS0-single stream) which are same modulation,bandwidth and frequency.

Expected Array Gain Adjustment to Antenna Directivity for 2TX Configurations and Supported Operational Modes

In the FCC regulatory domain,conducted testing of systems with multiple transmitters (2TX transmitter configurations) was performed in accordance with KDB 662911 requires adjustment of antenna directivity by an array gain factor. The array gain factor is dependent on correlation of the multiple tx signals, and is therefore a function of operational mode.

The following table establishes the expected array gain for the 2TX transmitter configuration case for each supported operational mode.

Operational Mode > Tx Config ^	11b (DSSS-CCK)	11a/g (Legacy OFDM)	HT20 1 Stream (MCS0-7)	HT40 1 Stream (MCS0-7)	HT20 2 Stream (MCS8-15)	HT40 2 Stream (MCS8-15)
2TX	3 dB	3dB	3dB	3dB	N/A	N/A

For MPE and Co-location test:

The EUT (Model number: KHUSB601) could be applied install to the AP (MOTOROLA / AP-8263 and MOTOROLA / AP-8163), it verified MPE and Co-location test.

1. MOTOROLA / AP-8263:

   The EUT could be applied with Radio A (2.4G) RF module (FCC ID: UZ7KHAP800) and Radio B (5G) RF module (FCC ID: UZ7RAAP800); therefore Maximum Permissible Exposure (Please refer to Appendix B) and Co-location (please refer to Appendix C) tests are added for simultaneously transmit between EUT (2.4G)/(5G), Radio A(2.4G) RF module (FCC ID: UZ7KHAP800) and Radio B (5G) RF module (FCC ID: UZ7RAAP800).

2. MOTOROLA / AP-8163:

   The EUT could be applied with Radio A (2.4G) RF module (FCC ID: UZ7KHAP800) and Radio B (5G) RF module (FCC ID: UZ7KHAP800); therefore Maximum Permissible Exposure (Please refer to Appendix B) and Co-location (please refer to Appendix C) tests are added for simultaneously transmit between EUT (2.4G)/(5G), Radio A (2.4G) RF module (FCC ID: UZ7KHAP800) and Radio B (5G) RF module (FCC ID: UZ7KHAP800).

Note: The Co-location testing was performed at the highest power.

3.7. Table for Testing Locations

Test Site Location				
Address:	No.8, Lane 724, Bo-ai St., Jhubei City, Hsinchu County 302, Taiwan, R.O.C.			
TEL:	886-3-656-9065			
FAX:	886-3-656-9085			
Test Site No.	**Site Category**	**Location**	**FCC Reg. No.**	**IC File No.**
03CH01-CB	SAC	Hsin Chu	262045	IC 4086D
CO01-CB	Conduction	Hsin Chu	262045	IC 4086D
TH01-CB	OVEN Room	Hsin Chu	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC).

3.8. Table for Supporting Units

For AC Power Line Conducted Emissions Emission and Radiated Emission below 1GHz test:

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	QDS-BRCM1049LE
Module	WNC	DNXA-M1	N/A
Notebook	DELL	E6430	QDS-BRCM1049LE
Earphone	SHYARO CHI	MIC-04	N/A
Mouse	Logitech	M-U0026	DoC

For Others tests:

Support Unit	Brand	Model	FCC ID
Notebook	DELL	M1340	E2K4965AGNM

3.9. Table for Parameters of Test Software Setting

During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. 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.

Power Parameters of IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX)

Test Software Version	ART2-GUI Version 2.3								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	14.5	17.5	18.5	18	18	14.5	13	16	12

Power Parameters of IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)

Test Software Version	ART2-GUI Version 2.3						
Frequency	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	8	17	17	8	7	16	13.5

Power Parameters of IEEE 802.11a / Ant. 1 / Chain 0 (1TX)

Test Software Version	ART2-GUI Version 2.3								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	14.5	17.5	18.5	18	18	14.5	13	16	12

Power Parameters of IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Test Software Version	ART2-GUI Version 2.3								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS0 20MHz	8	8	8.5	12	13.5	13	12	14	11.5

Power Parameters of IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Test Software Version	ART2-GUI Version 2.3						
Frequency	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS0 40MHz	6	10	13.5	7.5	6.5	14.5	13

Power Parameters of IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Test Software Version	ART2-GUI Version 2.3								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
MCS8 20MHz	10.5	10.5	11	13.5	15.5	13.5	13	13.5	12

Power Parameters of IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Test Software Version	ART2-GUI Version 2.3						
Frequency	5190 MHz	5230 MHz	5270 MHz	5310 MHz	5510 MHz	5550 MHz	5670 MHz
MCS8 40MHz	5.5	10	14	7	6	15	13

Power Parameters of IEEE 802.11a / Ant. 1 / Chain 0 + Chain 1 (2TX)

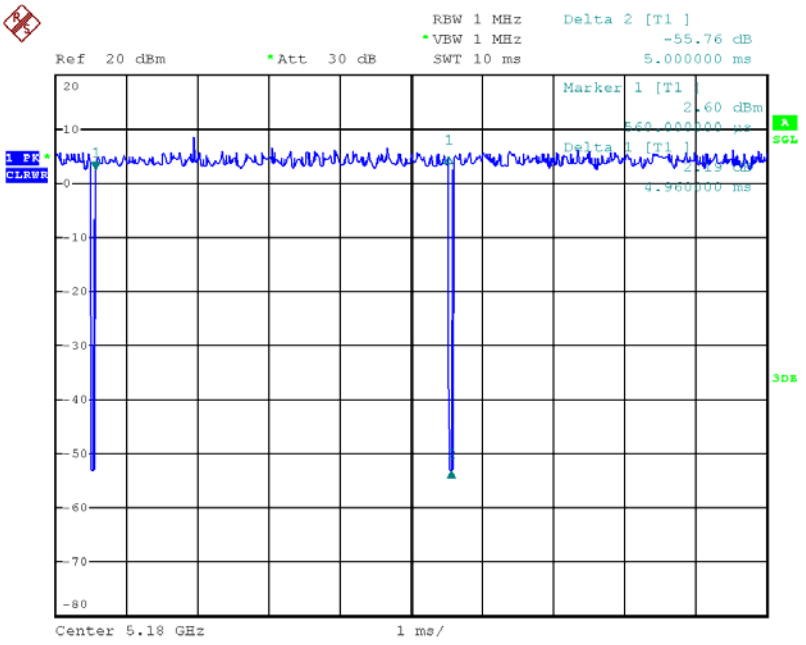
Test Software Version	ART2-GUI Version 2.3								
Frequency	5180 MHz	5200 MHz	5240 MHz	5260 MHz	5300 MHz	5320 MHz	5500 MHz	5580 MHz	5700 MHz
IEEE 802.11a	8	8	8.5	11.5	13	13	12	13	12

3.10. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

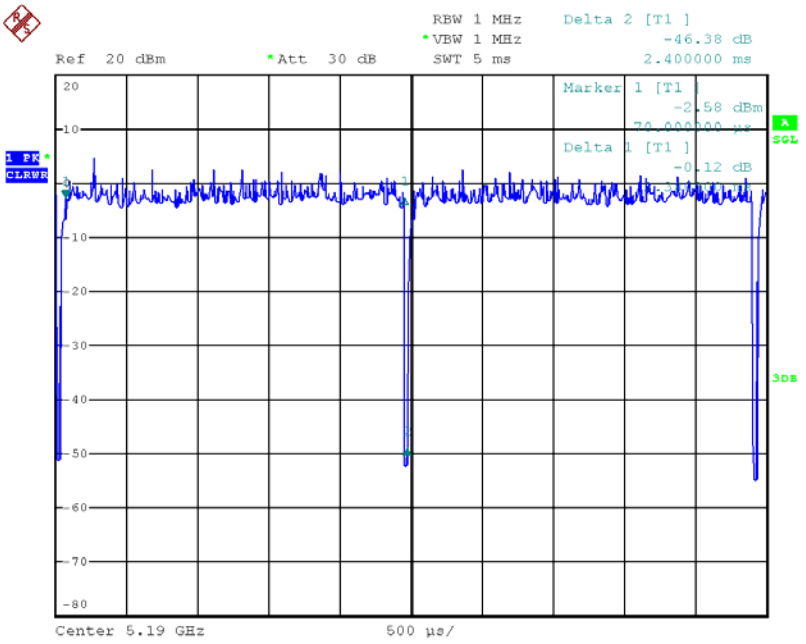
3.11. Duty Cycle

IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX)



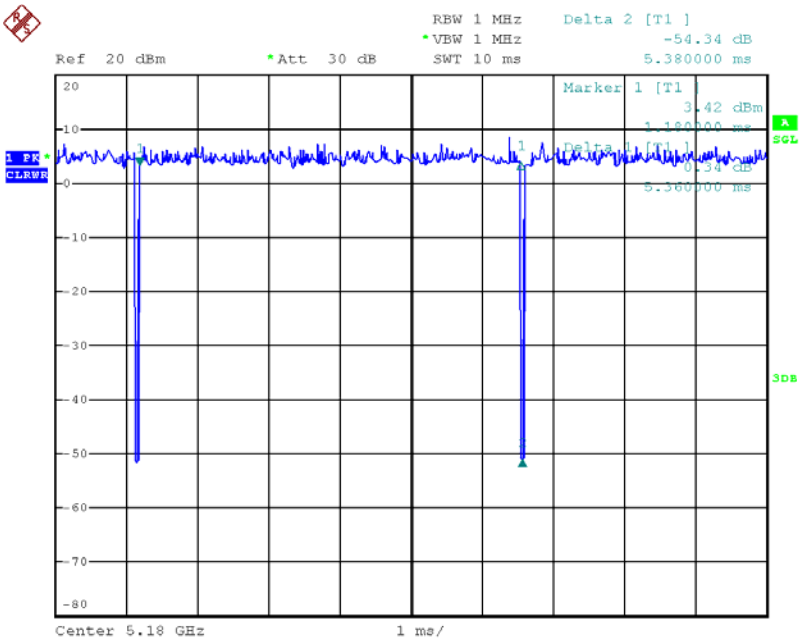
Date: 2.JUL.2013 18:12:34

IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)



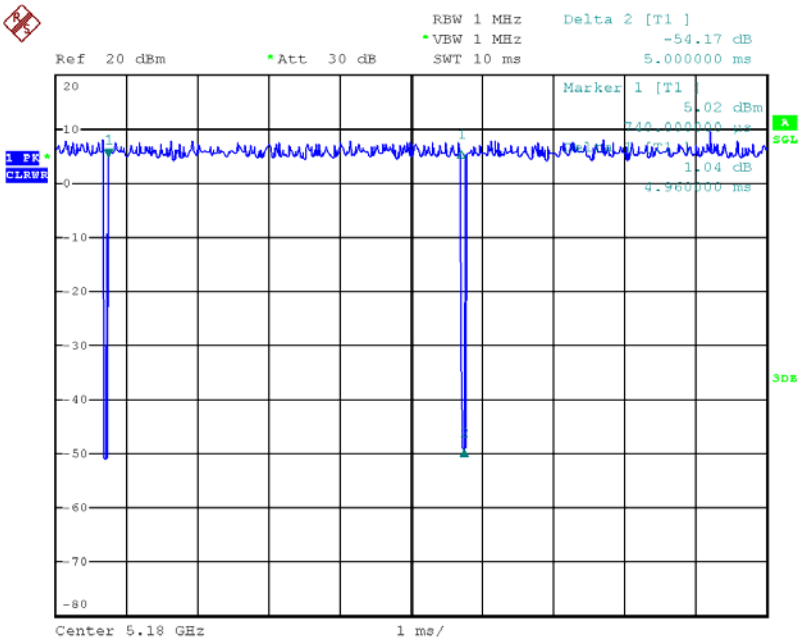
Date: 2.JUL.2013 18:13:46

IEEE 802.11a / Ant. 1 / Chain 0 (1TX)



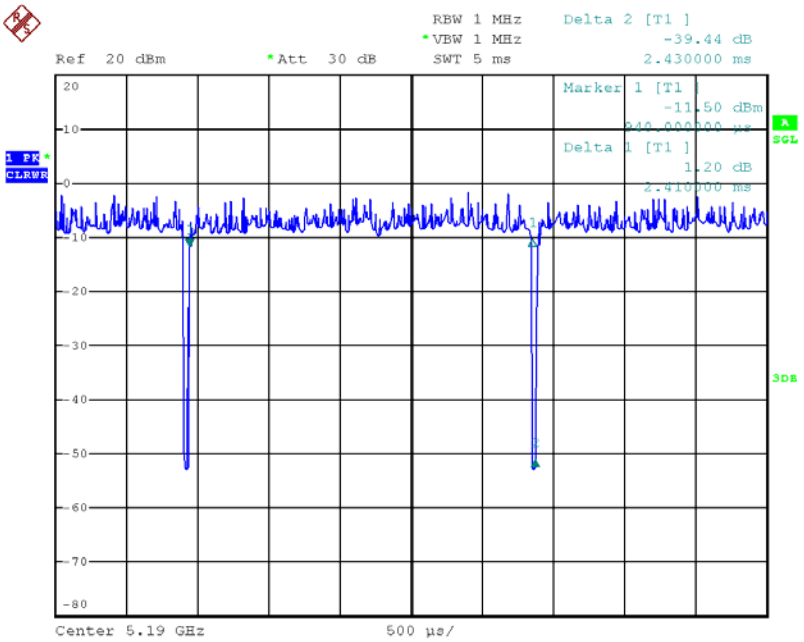
Date: 2.JUL.2013 18:12:09

IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)



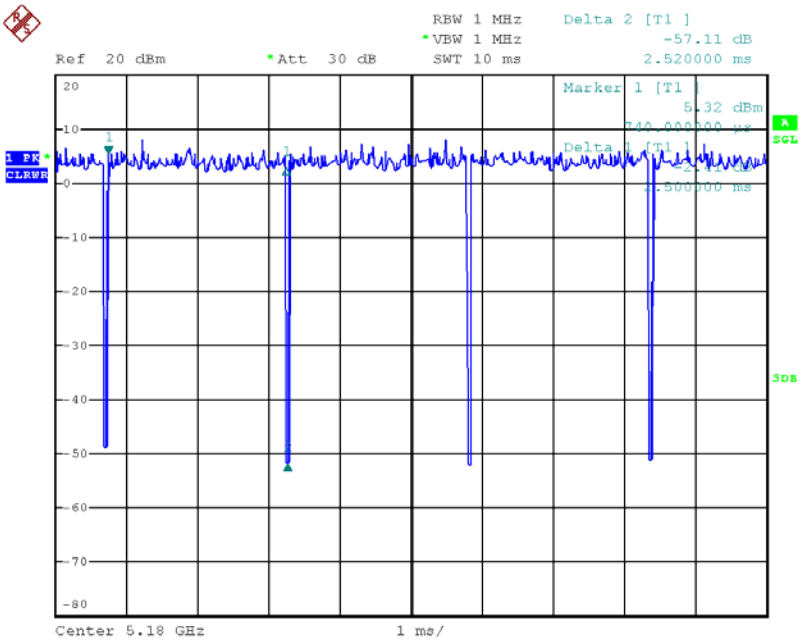
Date: 3.JUL.2013 17:59:53

IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)



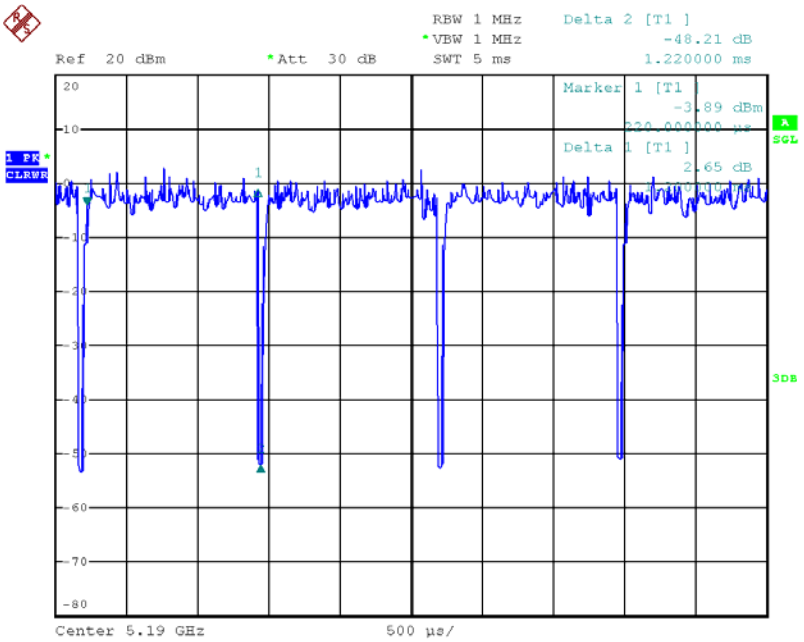
Date: 3.JUL.2013 18:02:35

IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)



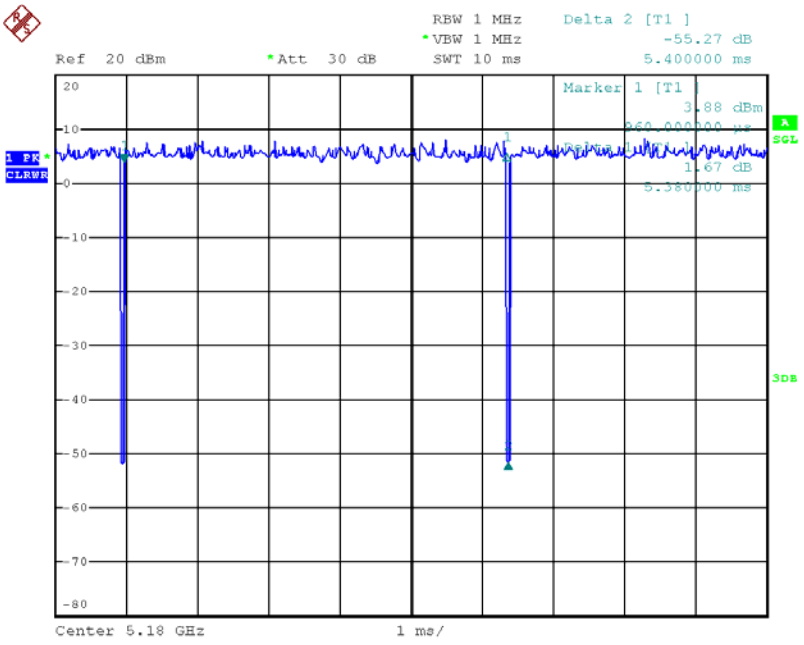
Date: 3.JUL.2013 18:01:38

IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)



Date: 3.JUL.2013 18:04:05

IEEE 802.11a /Ant. 1 / Chain 0 + Chain 1 (2TX)



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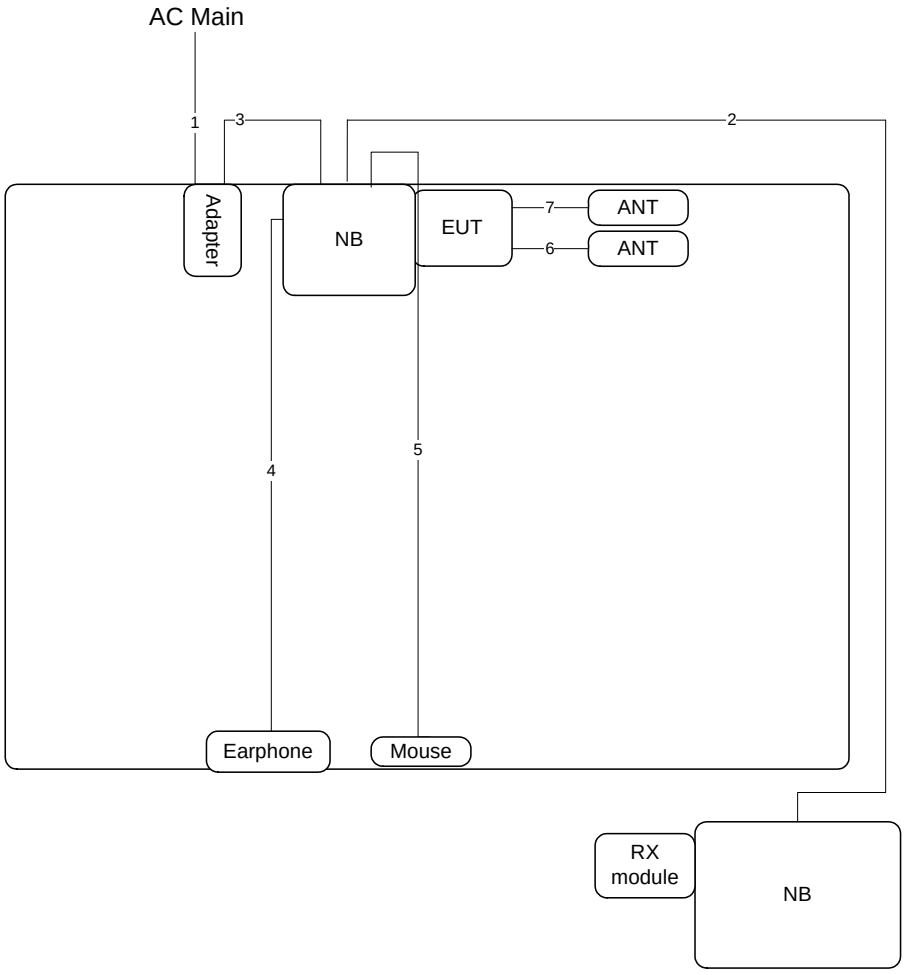
3.12. Test Configurations

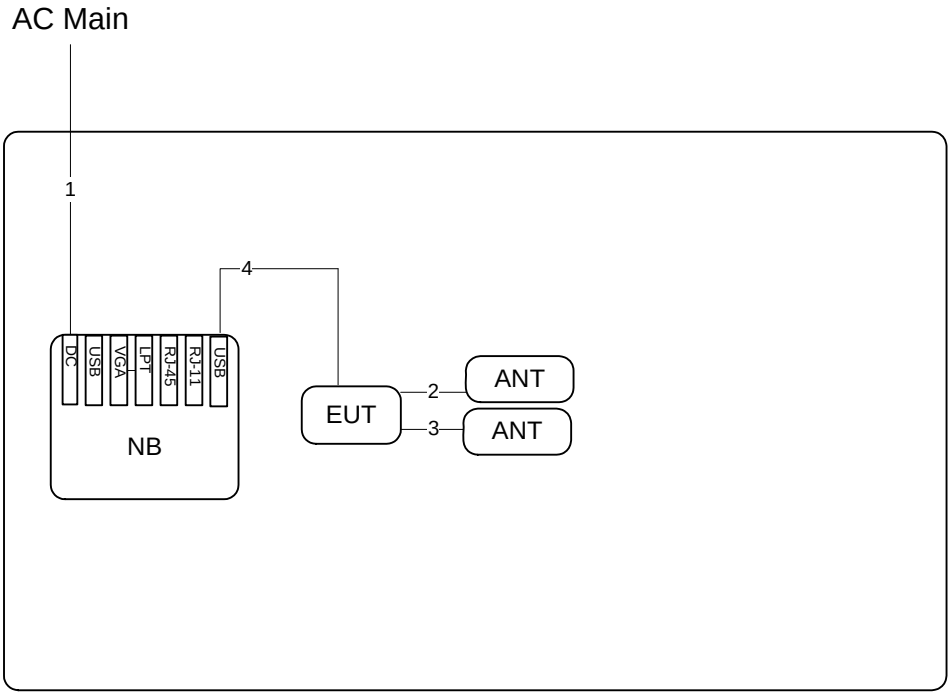
3.12.1. AC Power Line Conduction Emissions and Radiated Emission below 1GHz

Test Configuration



Item	Connection	Shielded	Length
1	AC power cable	No	1m
2	RJ-45 cable	No	10m
3	DC power cable	No	1.6m
4	Audio cable	No	1.1m
5	USB cable	No	1.8m
6	ANT cable	No	0.32m
7	ANT cable	No	0.32m

3.12.2. Radiation Emissions above 1GHz Test Configuration



Item	Connection	Shielded	Length
1	Power cable	No	2.6m
2	ANT cable	No	0.32m
3	ANT cable	No	0.32m
4	USB cable	No	1.4m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product that is designed to connect to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

4.1.2. Measuring Instruments and Setting

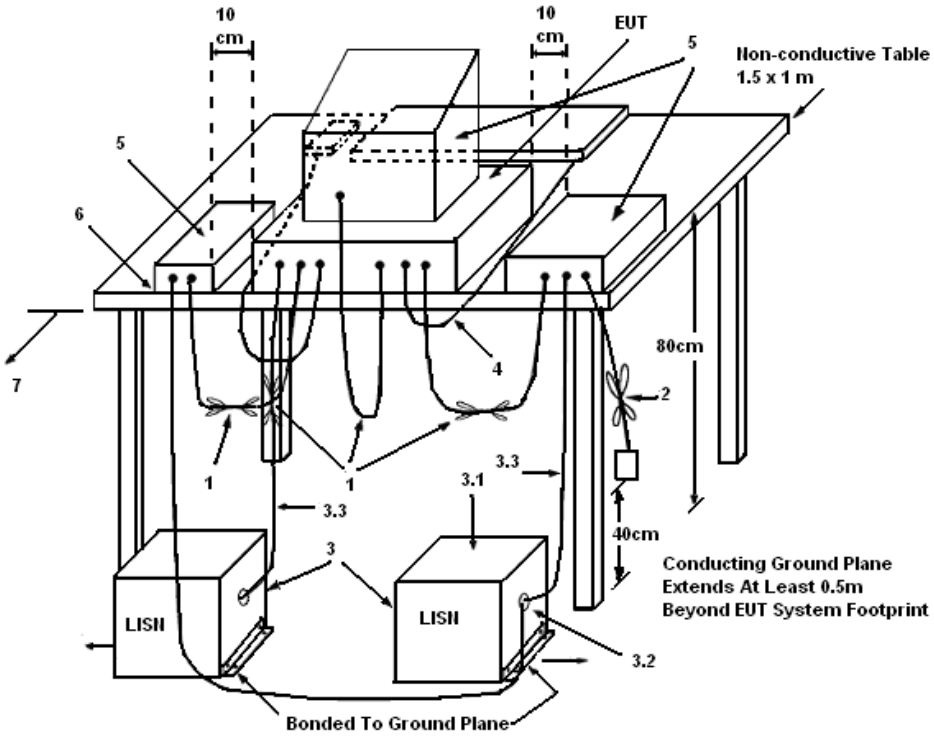
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

4.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.10. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 kHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

4.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

4.1.5. Test Deviation

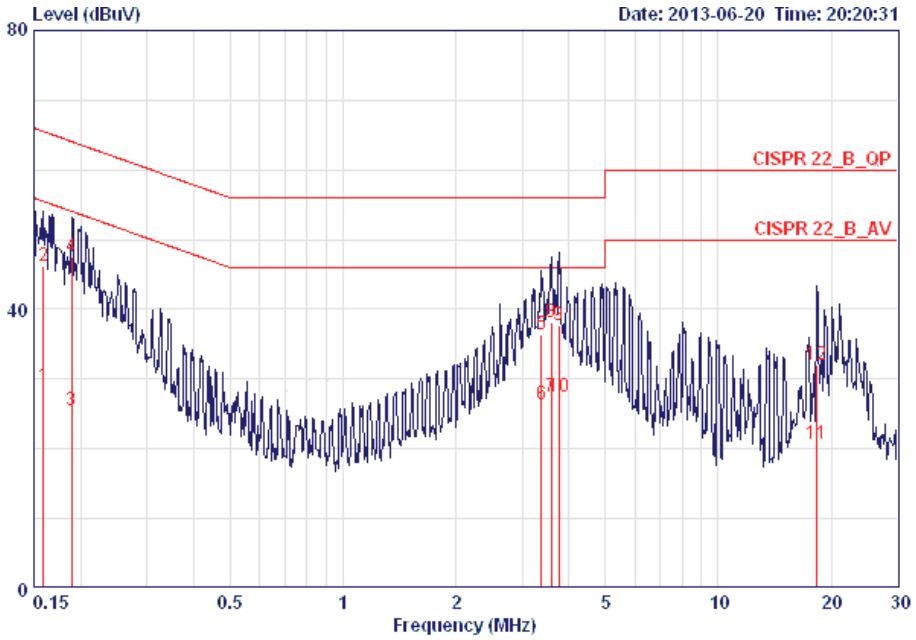
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

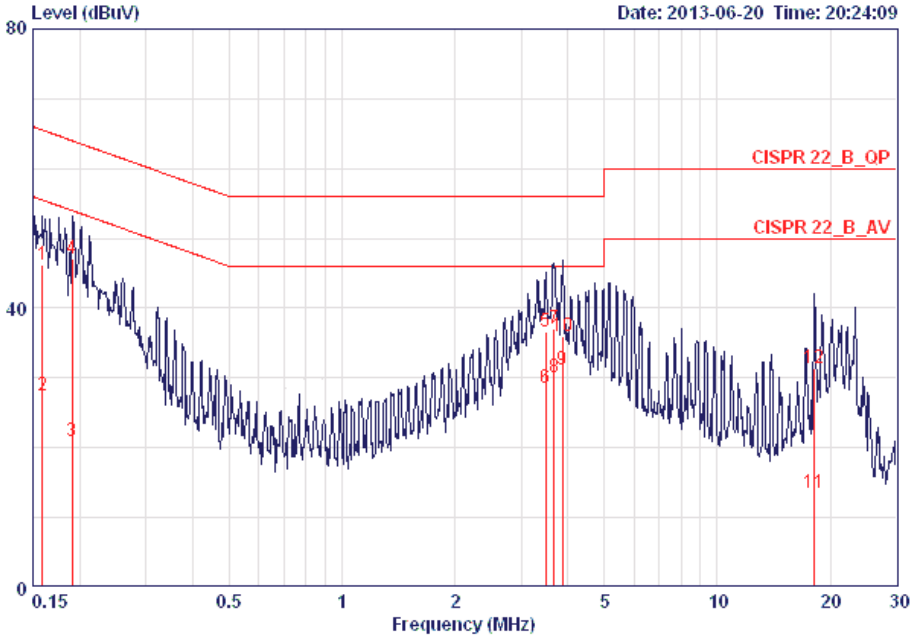
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24°C	Humidity	48%
Test Engineer	Simon Yang	Phase	Line
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15900	29.03	-26.48	55.52	28.69	0.16	0.18	LINE	AVERAGE
2	0.15900	46.17	-19.34	65.52	45.83	0.16	0.18	LINE	QP
3	0.18938	25.51	-28.56	54.06	25.16	0.15	0.20	LINE	AVERAGE
4	0.18938	47.43	-16.64	64.06	47.08	0.15	0.20	LINE	QP
5	3.381	36.36	-19.64	56.00	35.88	0.21	0.27	LINE	QP
6	3.381	26.30	-19.70	46.00	25.82	0.21	0.27	LINE	AVERAGE
7	3.584	27.47	-18.53	46.00	26.97	0.21	0.28	LINE	AVERAGE
8	3.584	38.25	-17.75	56.00	37.75	0.21	0.28	LINE	QP
9	3.759	37.62	-18.38	56.00	37.11	0.22	0.29	LINE	QP
10	3.759	27.53	-18.47	46.00	27.02	0.22	0.29	LINE	AVERAGE
11	18.328	20.74	-29.26	50.00	19.80	0.46	0.49	LINE	AVERAGE
12	18.328	31.99	-28.01	60.00	31.05	0.46	0.49	LINE	QP

Temperature	24°C	Humidity	48%
Test Engineer	Simon Yang	Phase	Neutral
Configuration	Normal Link		



	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Pol/Phase	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB		
1	0.15900	46.11	-19.40	65.52	45.85	0.08	0.18	NEUTRAL	QP
2	0.15900	27.53	-27.98	55.52	27.27	0.08	0.18	NEUTRAL	AVERAGE
3	0.19039	20.88	-33.14	54.02	20.60	0.08	0.20	NEUTRAL	AVERAGE
4	0.19039	47.00	-17.02	64.02	46.72	0.08	0.20	NEUTRAL	QP
5	3.491	36.57	-19.43	56.00	36.17	0.12	0.28	NEUTRAL	QP
6	3.491	28.54	-17.46	46.00	28.14	0.12	0.28	NEUTRAL	AVERAGE
7	3.681	37.12	-18.88	56.00	36.71	0.13	0.29	NEUTRAL	QP
8	3.681	30.08	-15.92	46.00	29.67	0.13	0.29	NEUTRAL	AVERAGE
9 @	3.860	31.11	-14.89	46.00	30.69	0.13	0.29	NEUTRAL	AVERAGE
10	3.860	35.90	-20.10	56.00	35.48	0.13	0.29	NEUTRAL	QP
11	18.135	13.55	-36.45	50.00	12.70	0.36	0.48	NEUTRAL	AVERAGE
12	18.135	31.45	-28.55	60.00	30.60	0.36	0.48	NEUTRAL	QP

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. 26dB Bandwidth & 99% Occupied Bandwidth Measurement

4.2.1. Limit

No restriction limits.

4.2.2. Measuring Instruments and Setting

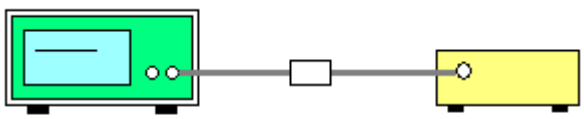
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

26dB Bandwidth	
Spectrum Parameters	**Setting**
Attenuation	Auto
Span Frequency	> 26dB Bandwidth
RBW	Approximately 1% of the emission bandwidth
VBW	VBW > RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto
99% Occupied Bandwidth	
Spectrum Parameters	**Setting**
Span	1.5 times to 5.0 times the OBW
RBW	1 % to 5 % of the OBW
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold

4.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer in peak hold mode.
2. 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%.

4.2.4. Test Setup Layout



4.2.5. Test Deviation

There is no deviation with the original standard.

4.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.2.7. Test Result of 26dB Bandwidth & 99% Occupied Bandwidth

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	34.08	19.52
40	5200 MHz	43.84	26.56
48	5240 MHz	46.08	27.84
52	5260 MHz	44.16	27.84
60	5300 MHz	46.72	28.80
64	5320 MHz	37.28	19.52
100	5500 MHz	34.88	19.20
116	5580 MHz	44.00	24.16
140	5700 MHz	28.64	18.72

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190 MHz	45.76	36.48
46	5230 MHz	92.80	53.12
54	5270 MHz	89.60	50.56
62	5310 MHz	47.04	36.48
102	5510MHz	47.36	36.48
110	5550 MHz	87.68	48.32
134	5670 MHz	72.64	38.72

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	21.28	17.12
40	5200 MHz	23.20	18.56
48	5240 MHz	23.20	18.24
52	5260 MHz	27.04	18.08
60	5300 MHz	29.12	20.64
64	5320 MHz	28.16	19.04
100	5500 MHz	24.00	17.92
116	5580 MHz	28.32	17.92
140	5700 MHz	26.08	18.72

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190 MHz	44.16	37.12
46	5230 MHz	48.00	37.12
54	5270 MHz	81.92	42.56
62	5310 MHz	42.56	36.48
102	5510MHz	43.20	36.80
110	5550 MHz	68.48	37.76
134	5670 MHz	84.16	38.08

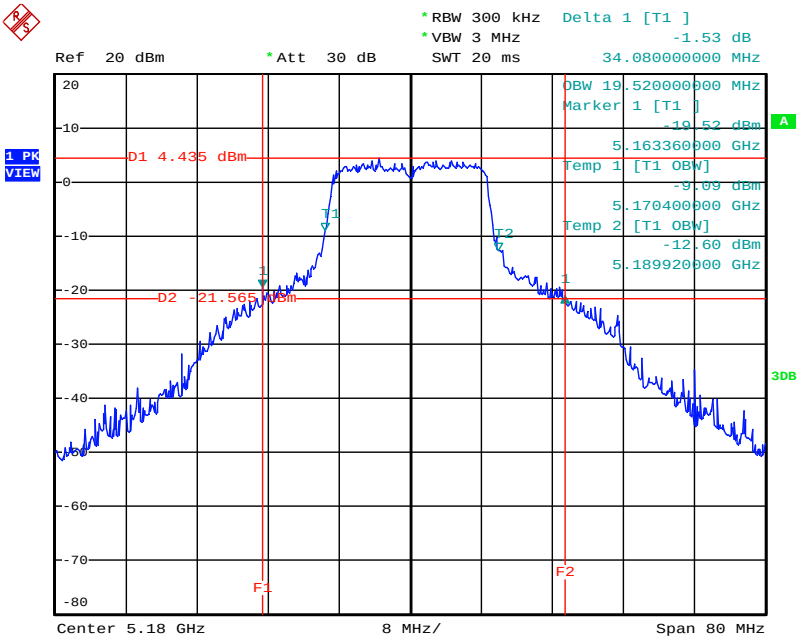
Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
36	5180 MHz	26.40	18.24
40	5200 MHz	24.64	18.24
48	5240 MHz	26.88	18.24
52	5260 MHz	31.04	19.04
60	5300 MHz	36.48	21.12
64	5320 MHz	31.04	18.72
100	5500 MHz	27.84	18.40
116	5580 MHz	27.52	18.40
140	5700 MHz	25.76	18.24

Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	26dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)
38	5190 MHz	44.48	36.48
46	5230 MHz	47.36	36.80
54	5270 MHz	73.92	40.32
62	5310 MHz	43.20	36.48
102	5510MHz	45.44	36.48
110	5550 MHz	76.48	44.80
134	5670 MHz	69.76	36.80

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5180 MHz



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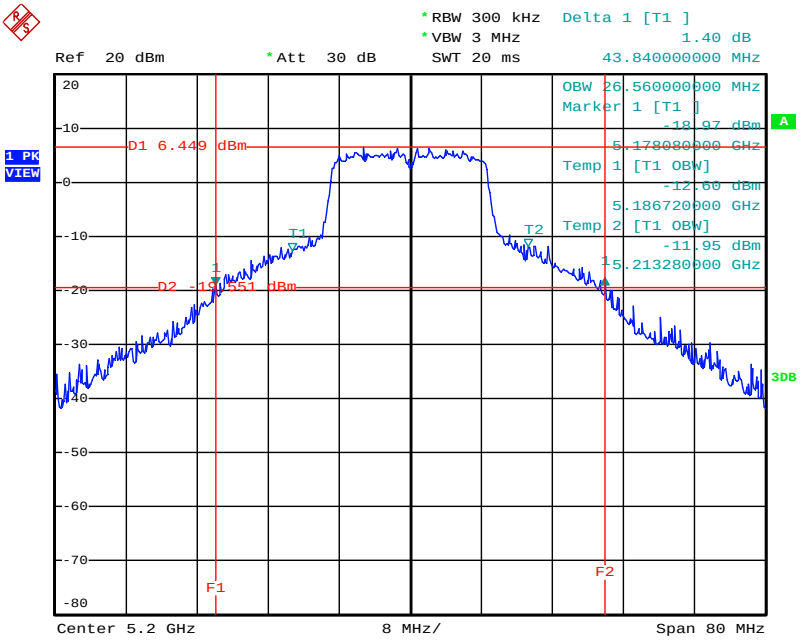
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5200 MHz



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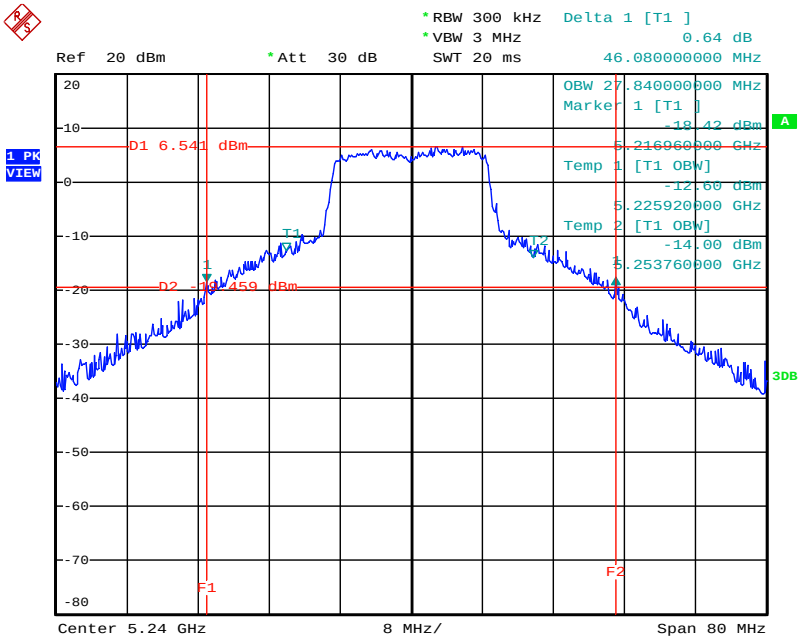
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5240 MHz



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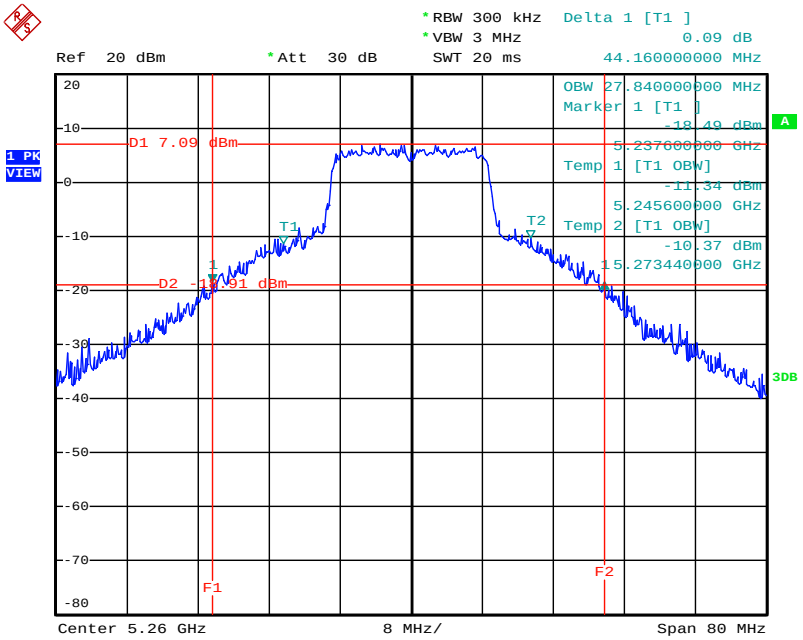
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5260 MHz



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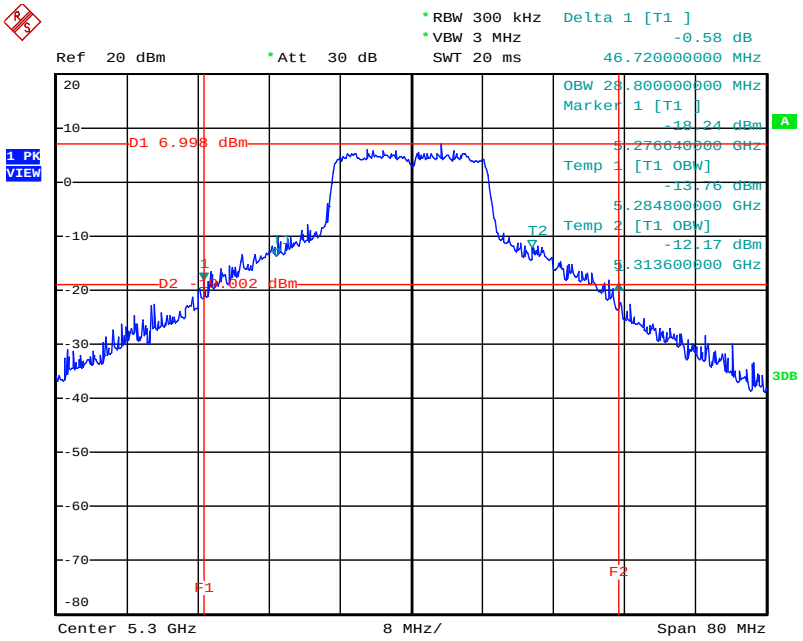
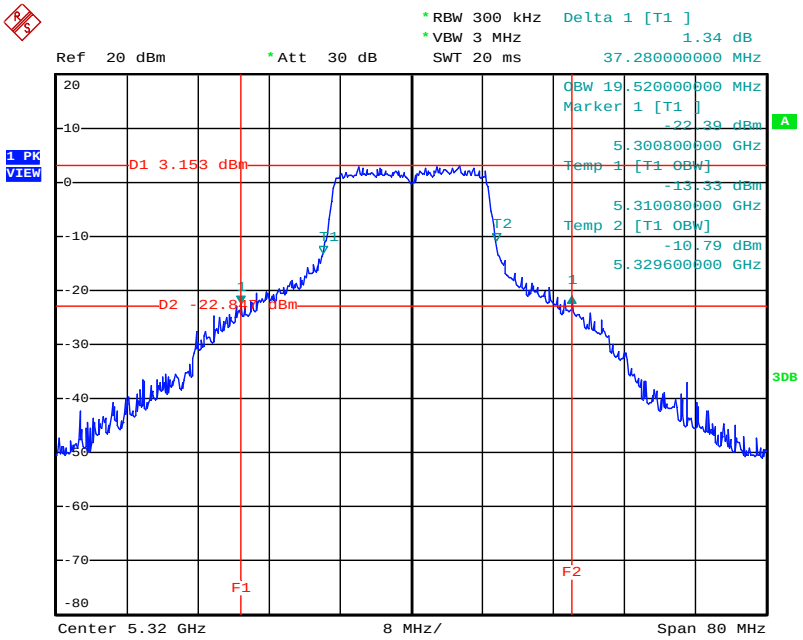
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5300 MHz



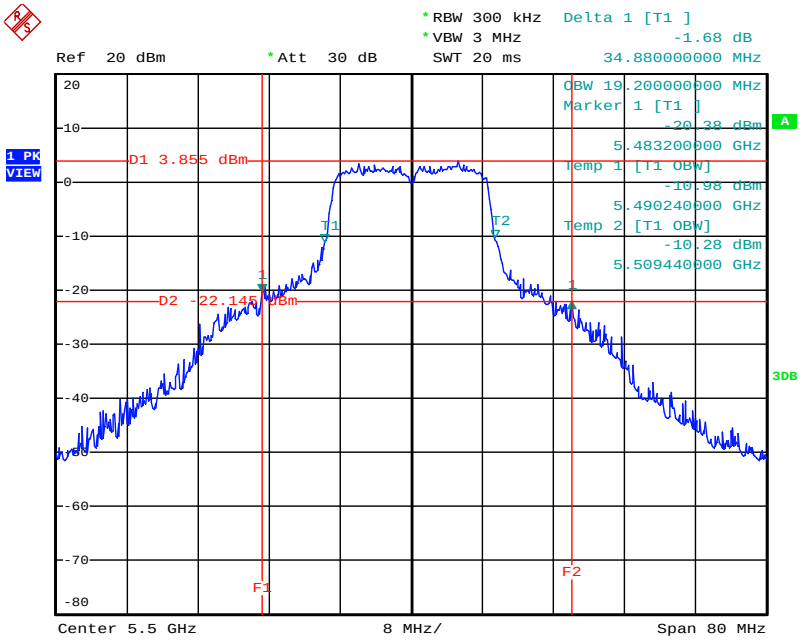
Date: 2.JUL.2013 17:56:46

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5320 MHz



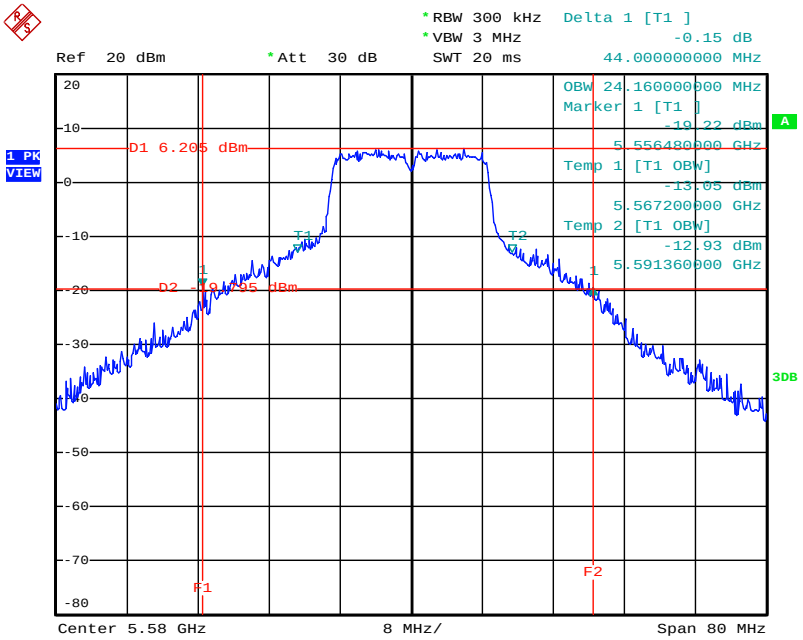
Date: 2.JUL.2013 17:57:11

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5500 MHz



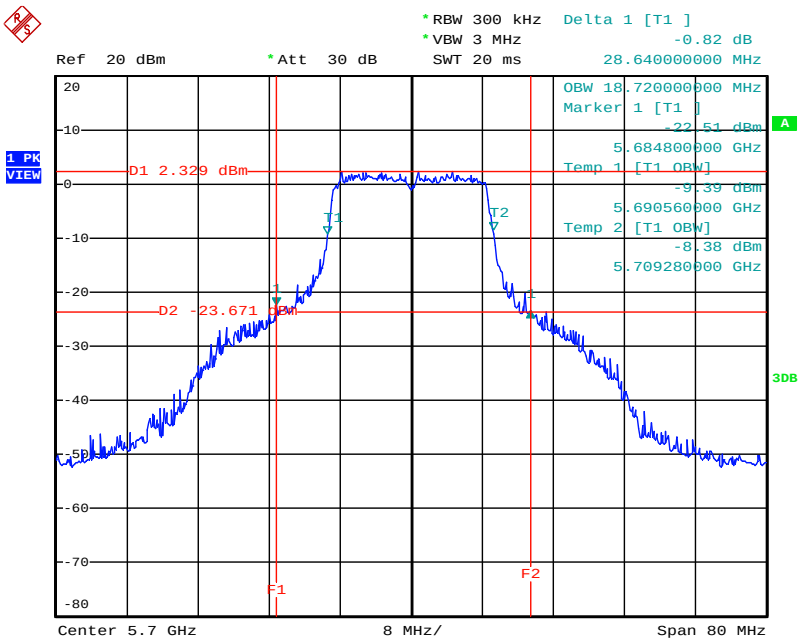
Date: 2.JUL.2013 17:57:44

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5580 MHz



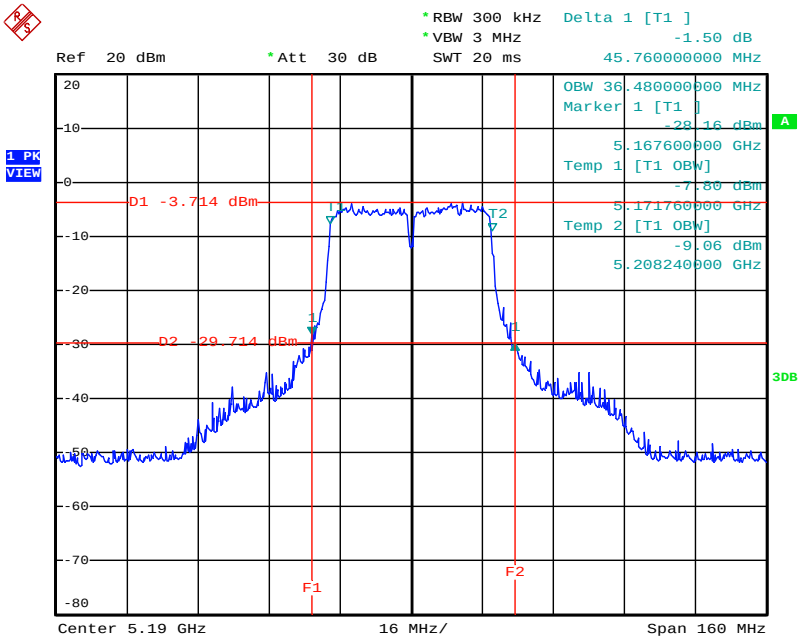
Date: 2.JUL.2013 17:58:06

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5700 MHz



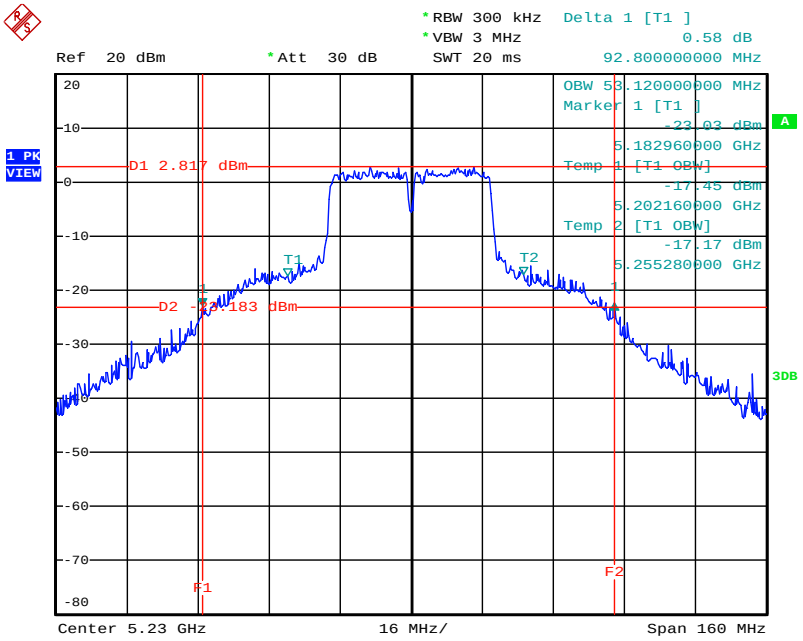
Date: 2.JUL.2013 17:58:31

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5190 MHz



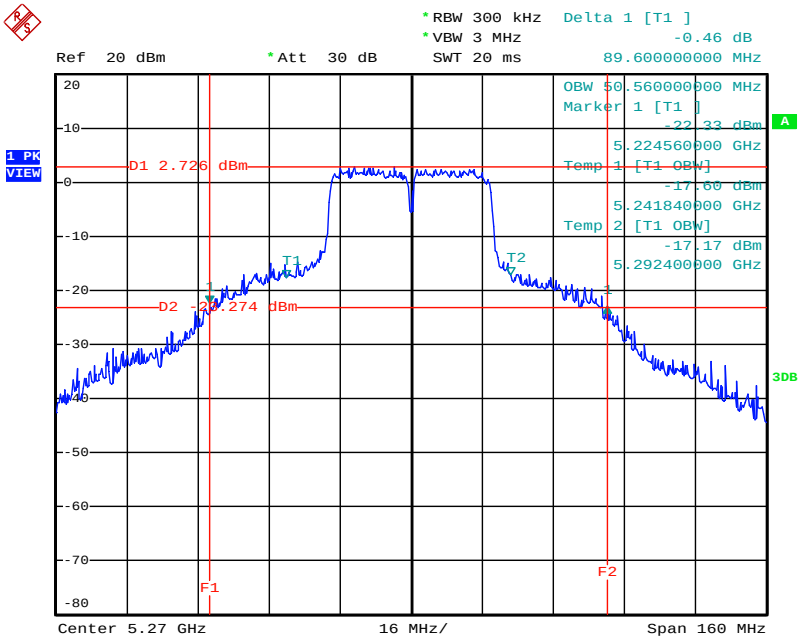
Date: 2.JUL.2013 17:59:14

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5230 MHz



Date: 2.JUL.2013 18:02:36

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)/ 5270 MHz



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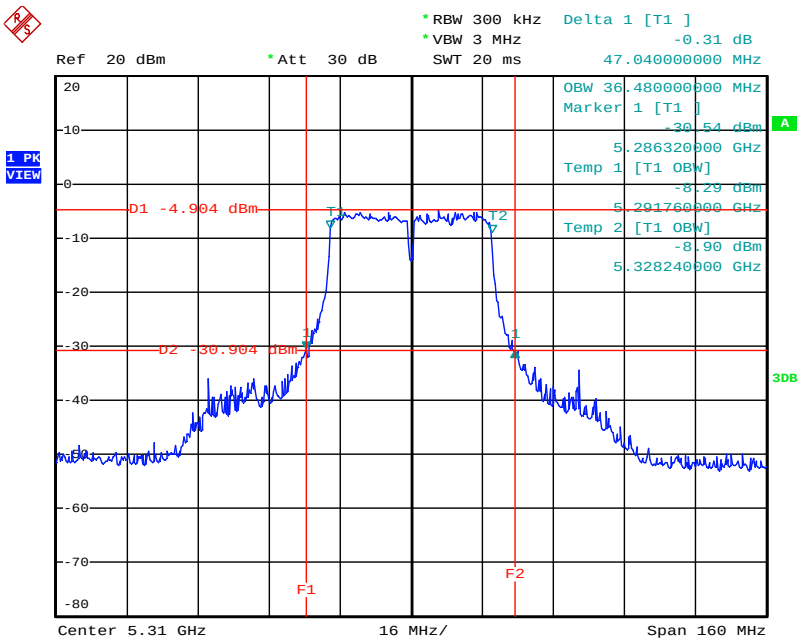
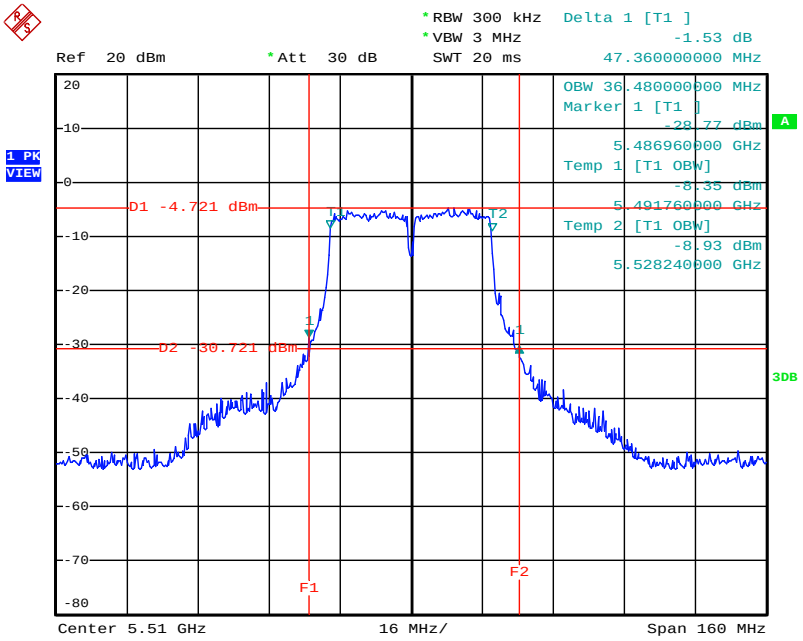
26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5310 MHz



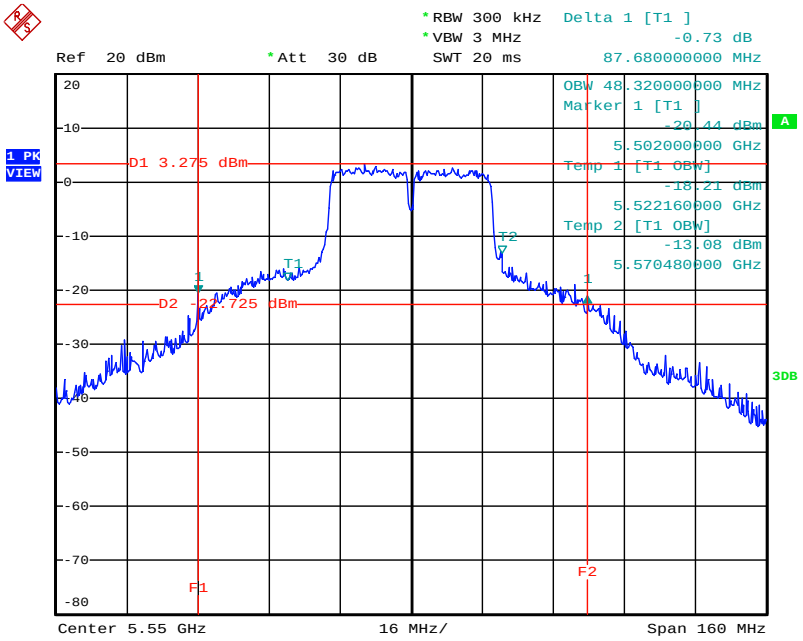
Date: 2.JUL.2013 18:03:25

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5510MHz



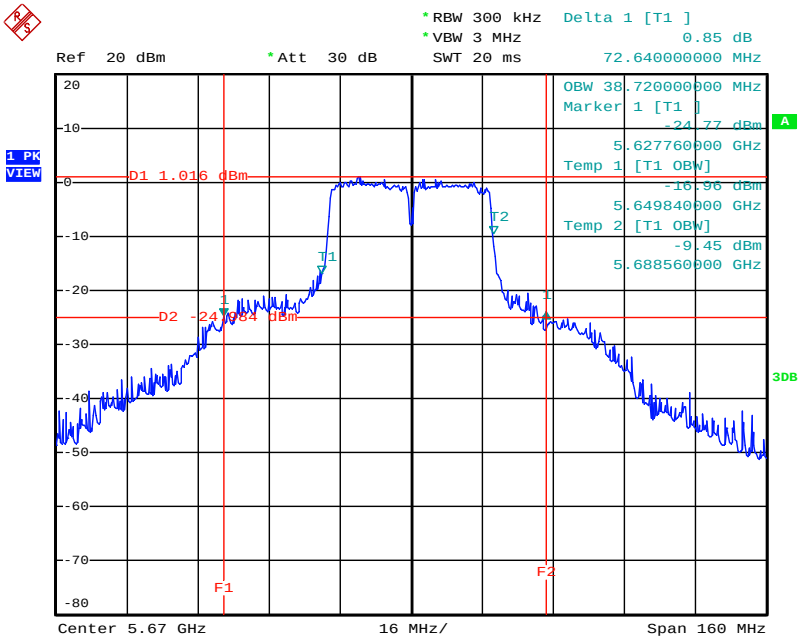
Date: 2.JUL.2013 18:03:50

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5550 MHz



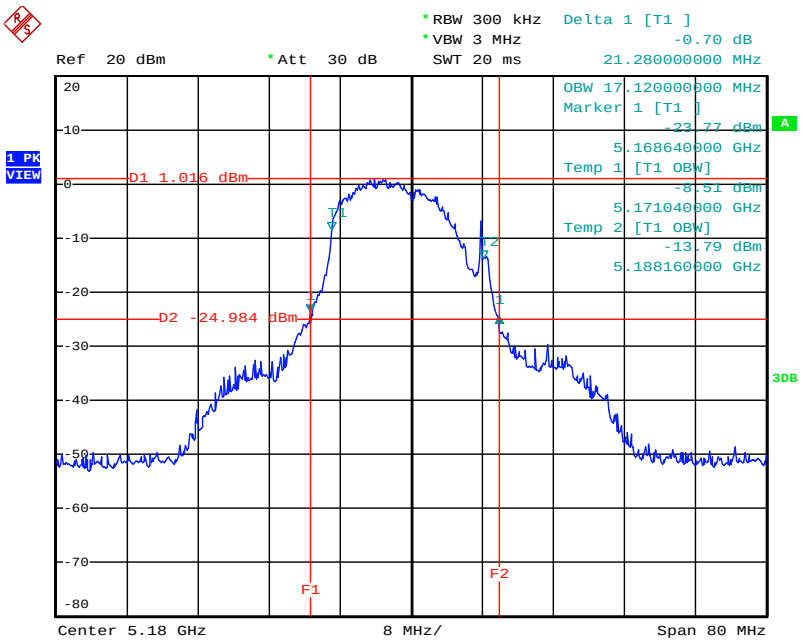
Date: 2.JUL.2013 18:04:13

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5670 MHz



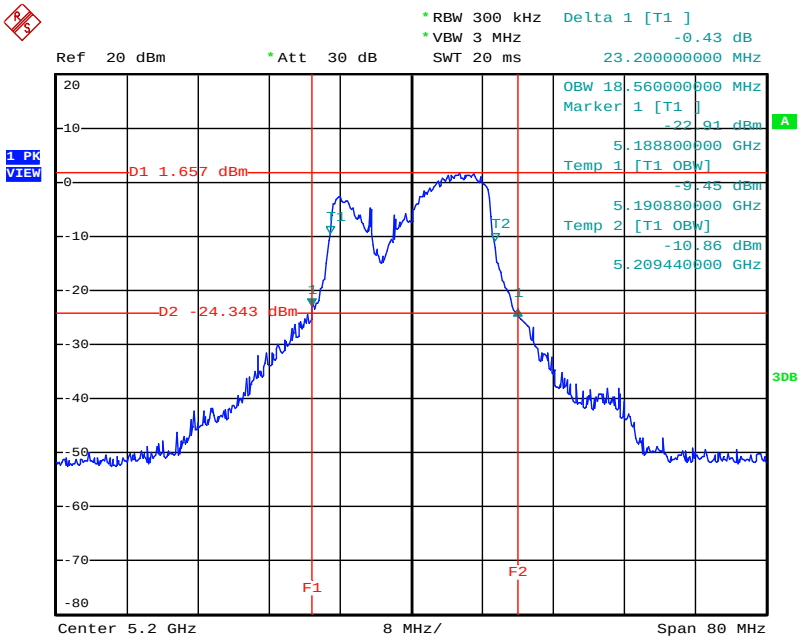
Date: 2.JUL.2013 18:04:38

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5180 MHz



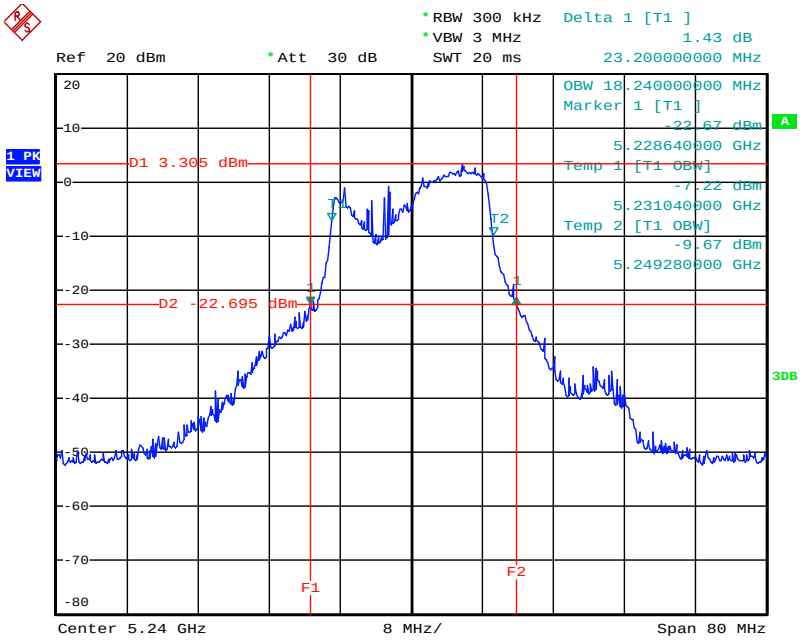
Date: 3.JUL.2013 16:44:55

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5200 MHz



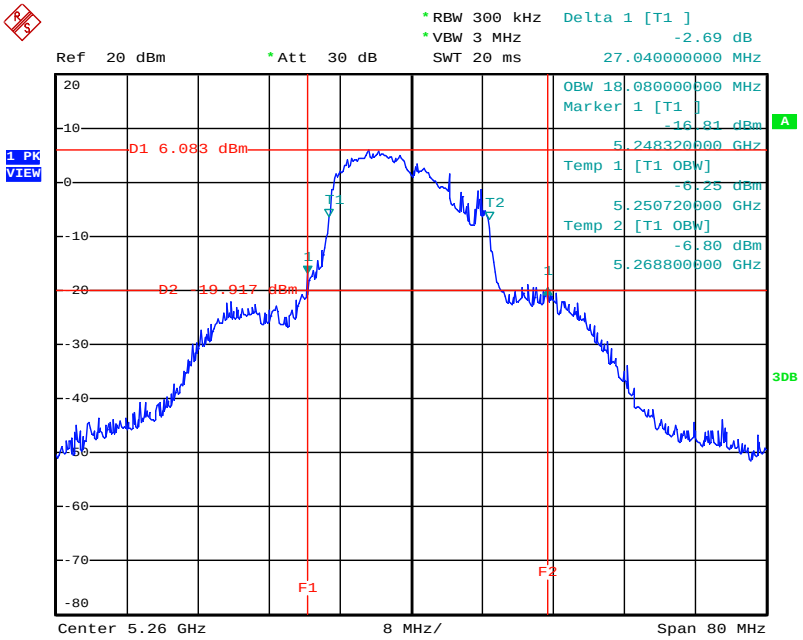
Date: 3.JUL.2013 16:45:52

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5240 MHz



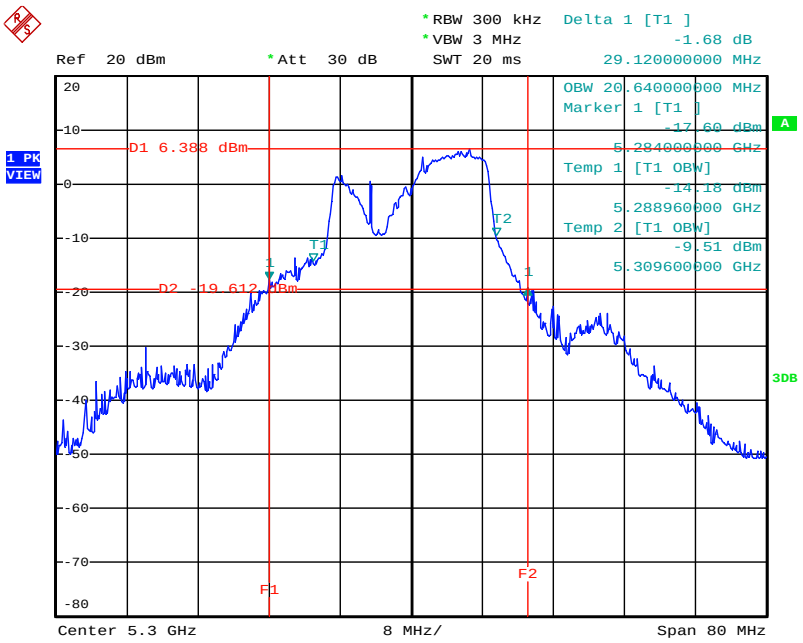
Date: 3.JUL.2013 16:46:23

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5260 MHz



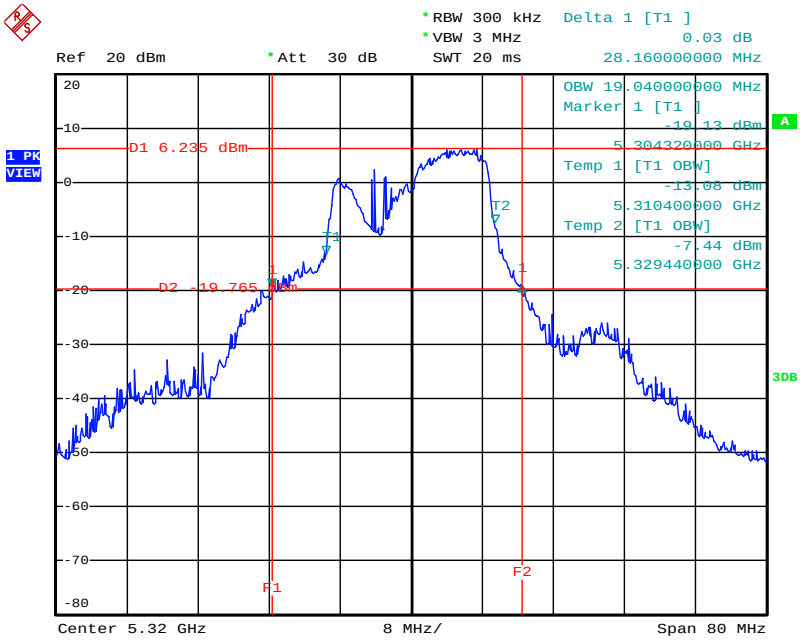
Date: 3.JUL.2013 16:46:50

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5300 MHz



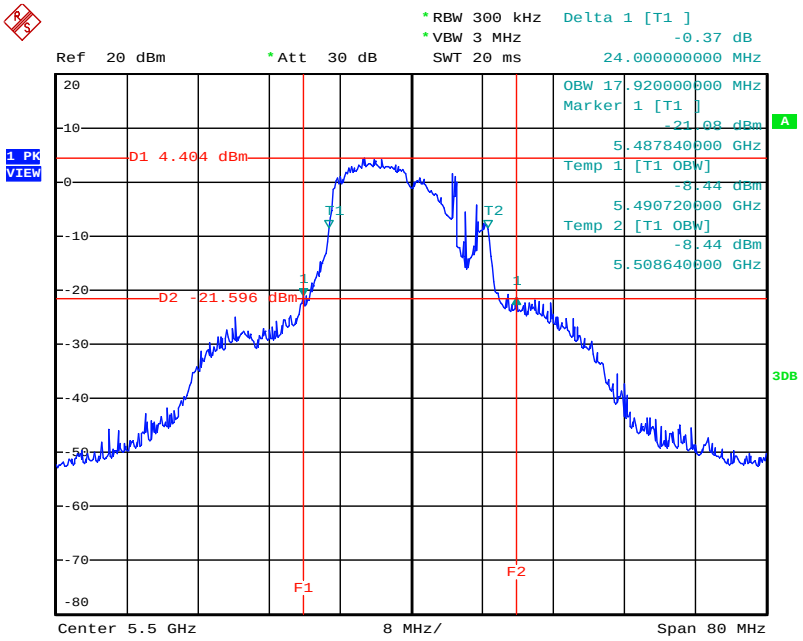
Date: 3.JUL.2013 16:47:21

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5320 MHz



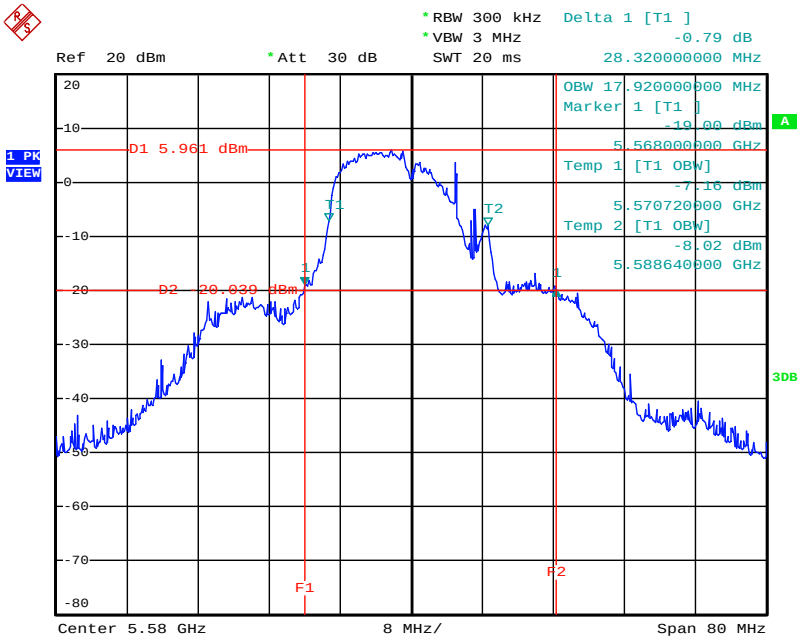
Date: 3.JUL.2013 16:47:42

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5500 MHz



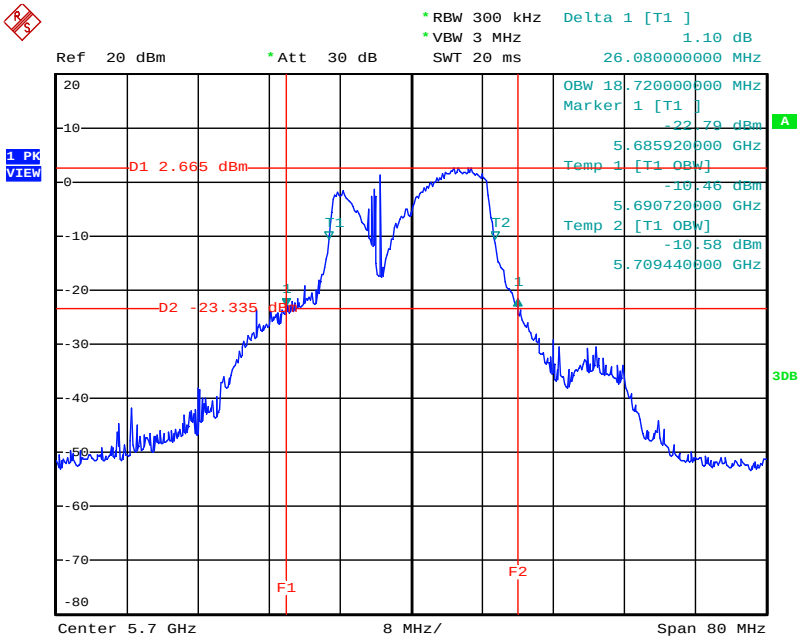
Date: 3.JUL.2013 16:48:09

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5580 MHz



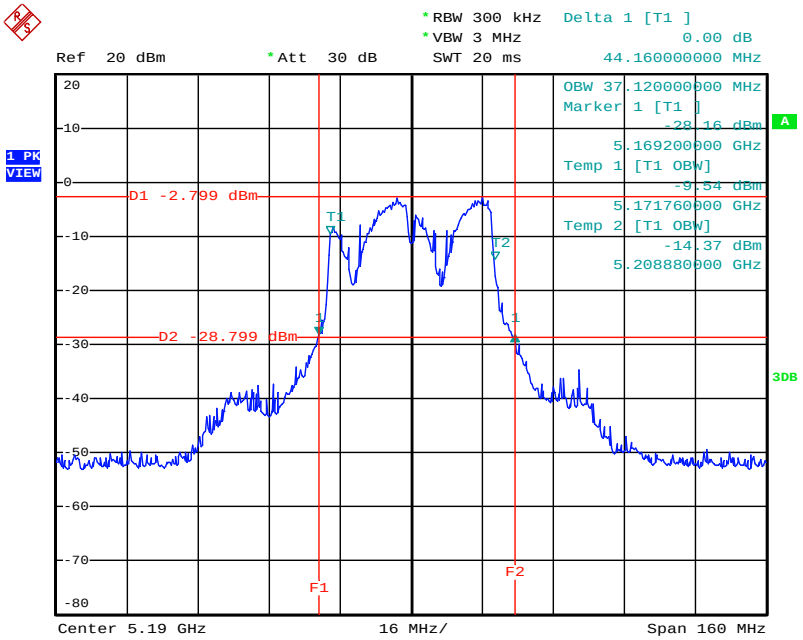
Date: 3.JUL.2013 16:48:29

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5700 MHz



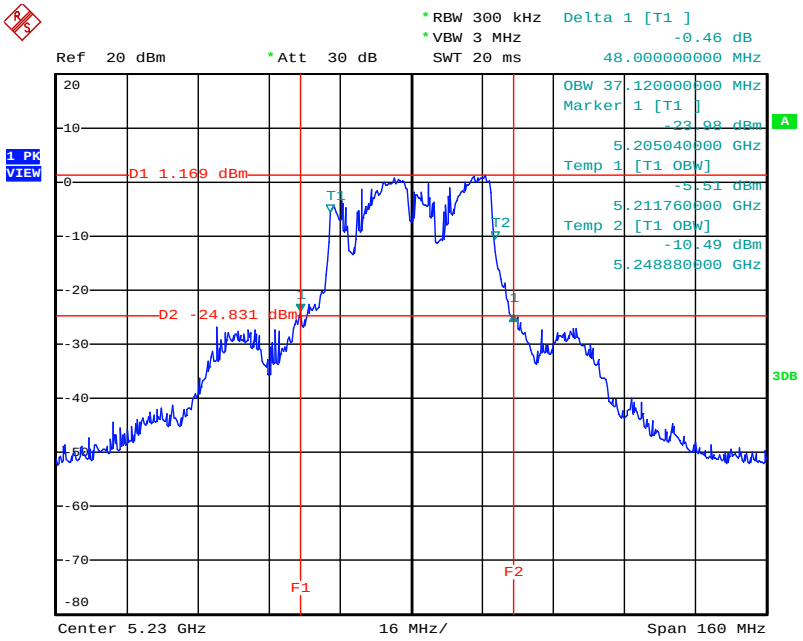
Date: 3.JUL.2013 16:48:54

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5190 MHz



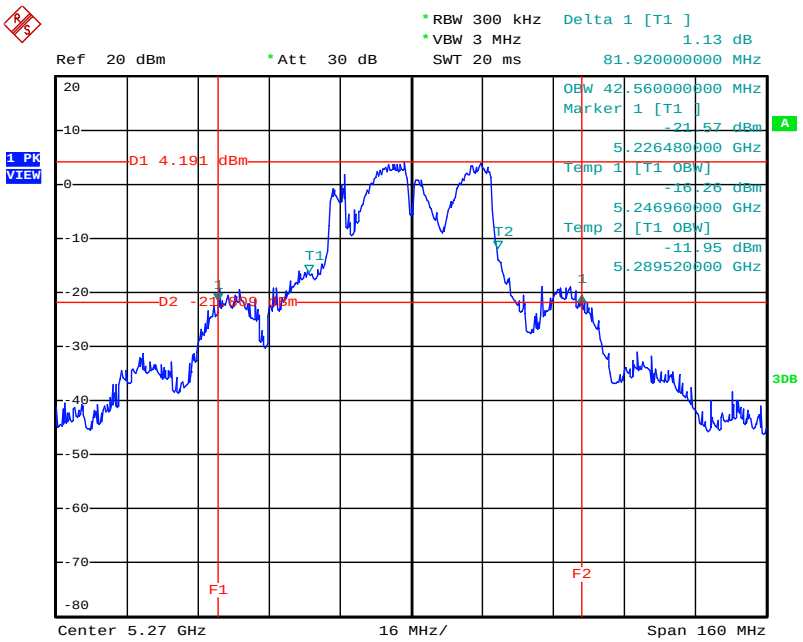
Date: 3.JUL.2013 16:49:32

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5230 MHz



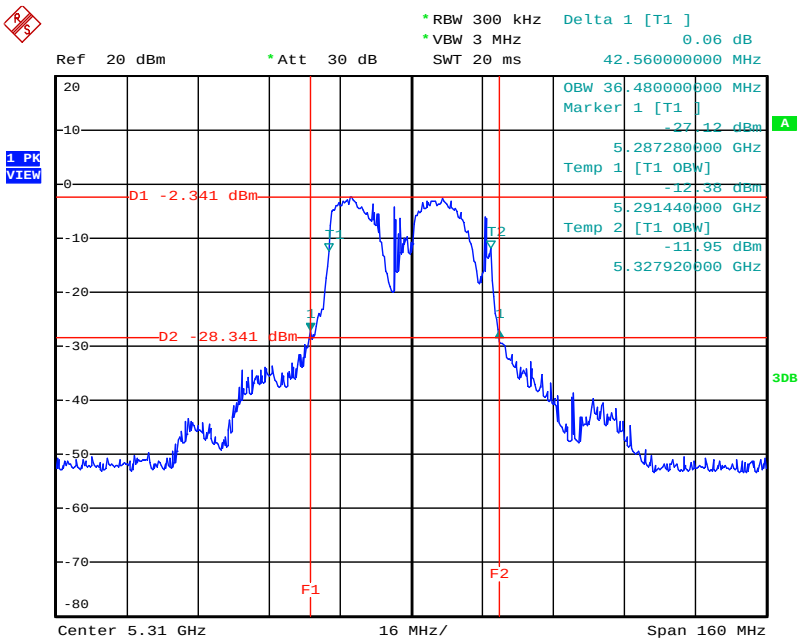
Date: 3.JUL.2013 16:49:56

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5270 MHz



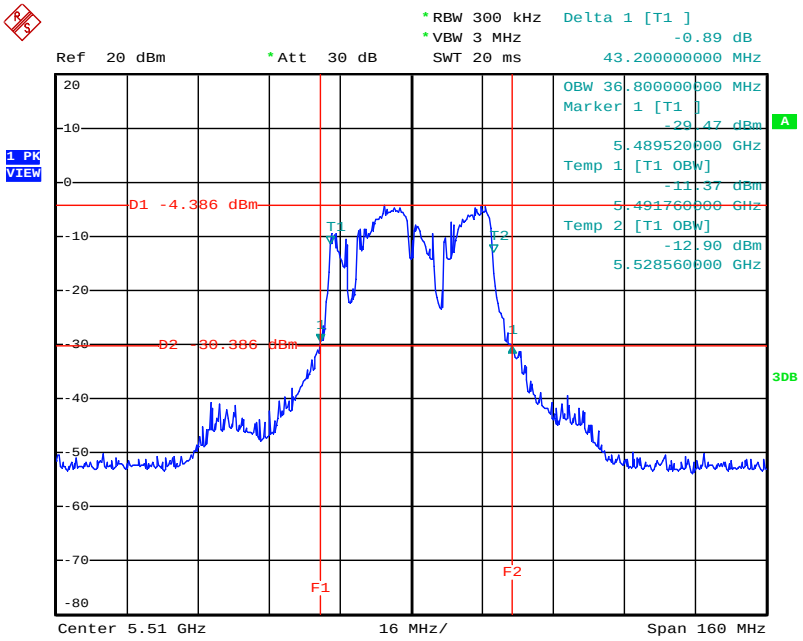
Date: 3.JUL.2013 16:50:28

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5310 MHz



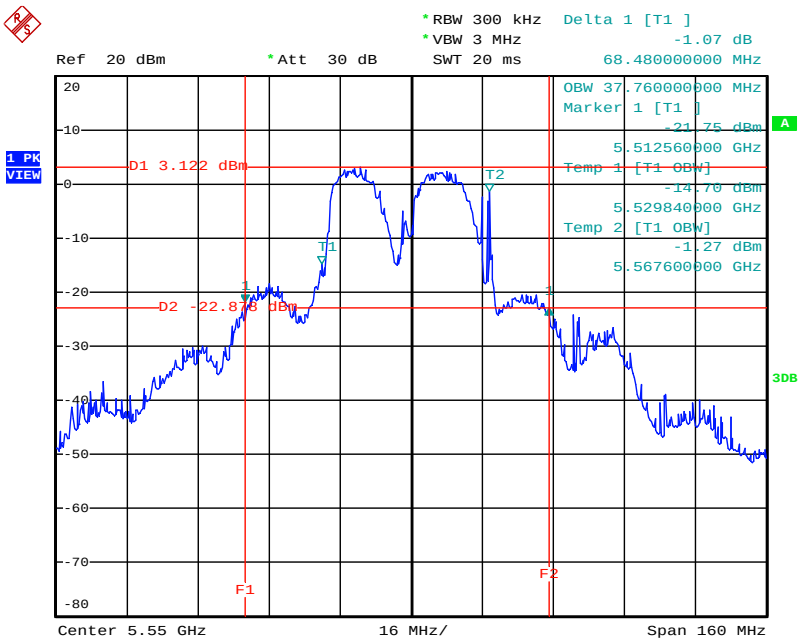
Date: 3.JUL.2013 16:50:55

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5510MHz



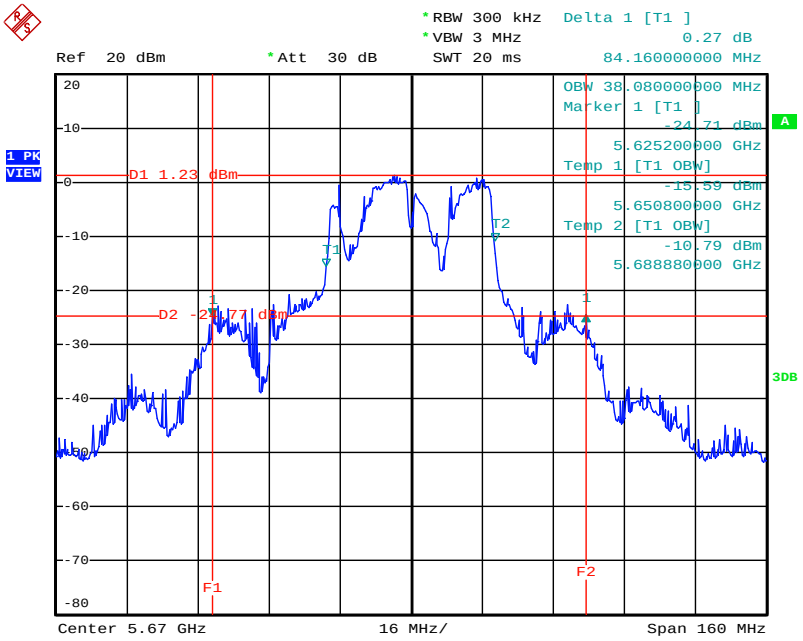
Date: 3.JUL.2013 16:51:18

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5550 MHz



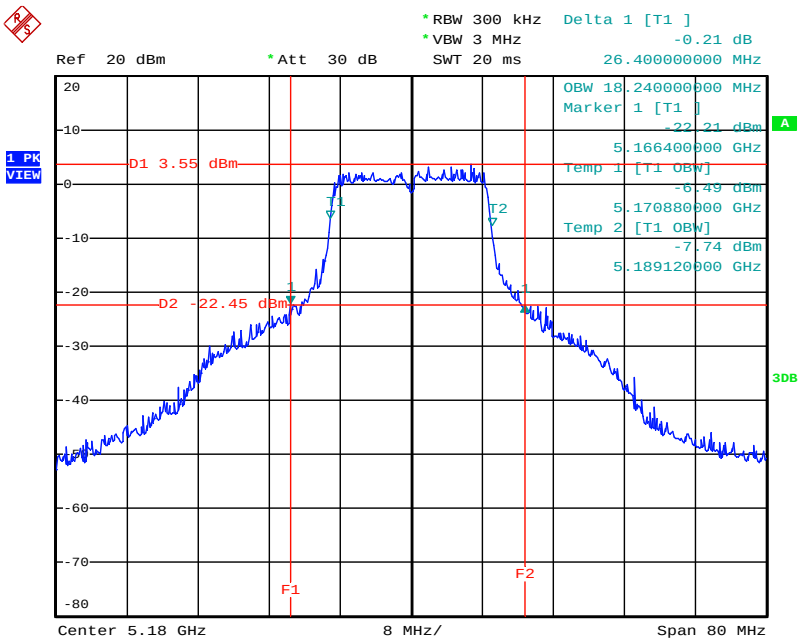
Date: 3.JUL.2013 16:51:42

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5670 MHz



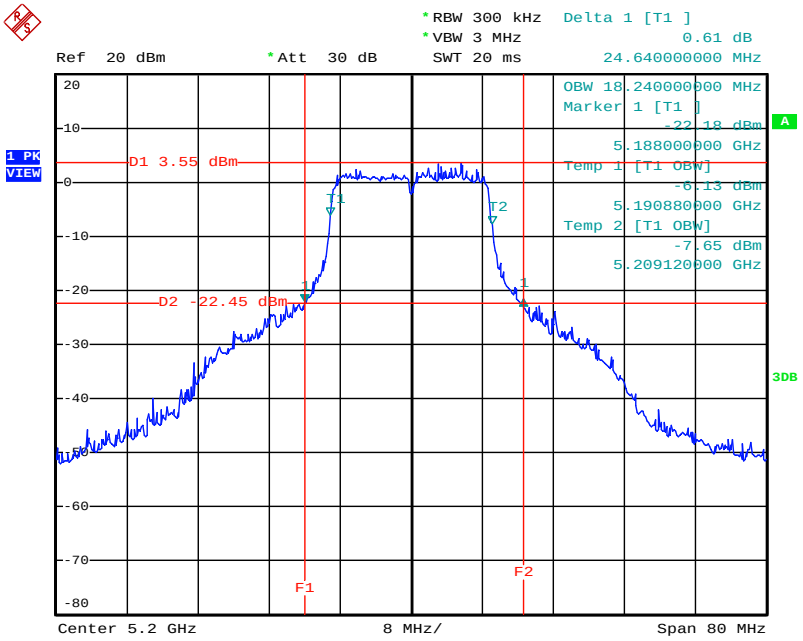
Date: 3.JUL.2013 16:52:07

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5180 MHz



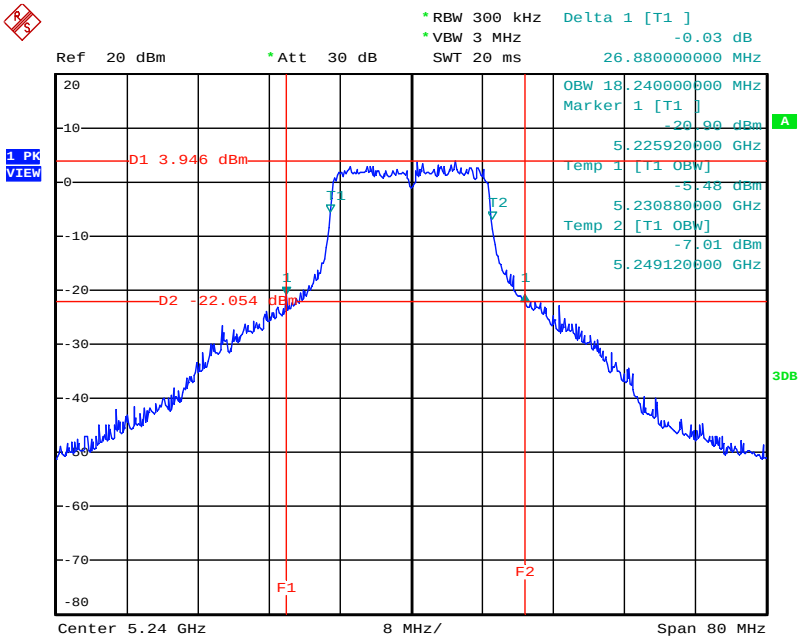
Date: 3.JUL.2013 16:56:26

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5200 MHz



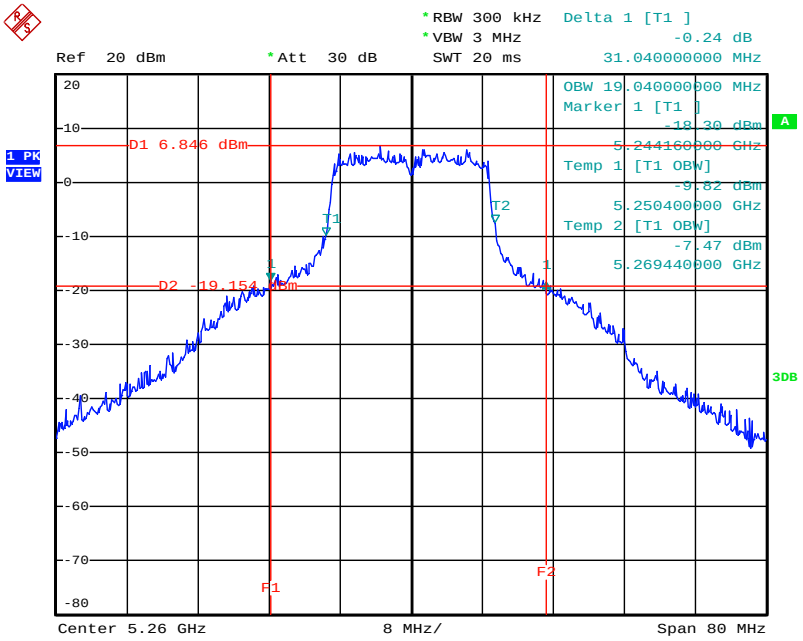
Date: 3.JUL.2013 16:56:49

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5240 MHz



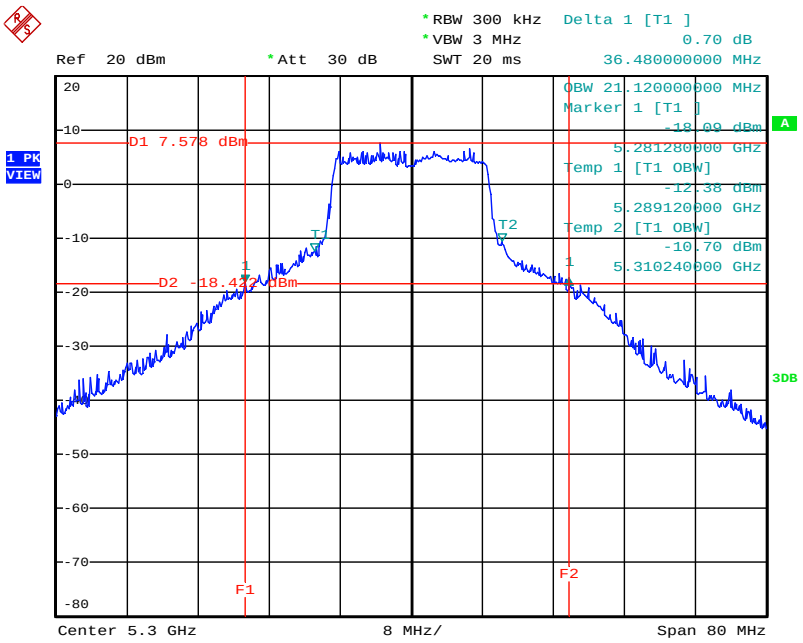
Date: 3.JUL.2013 16:57:13

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5260 MHz



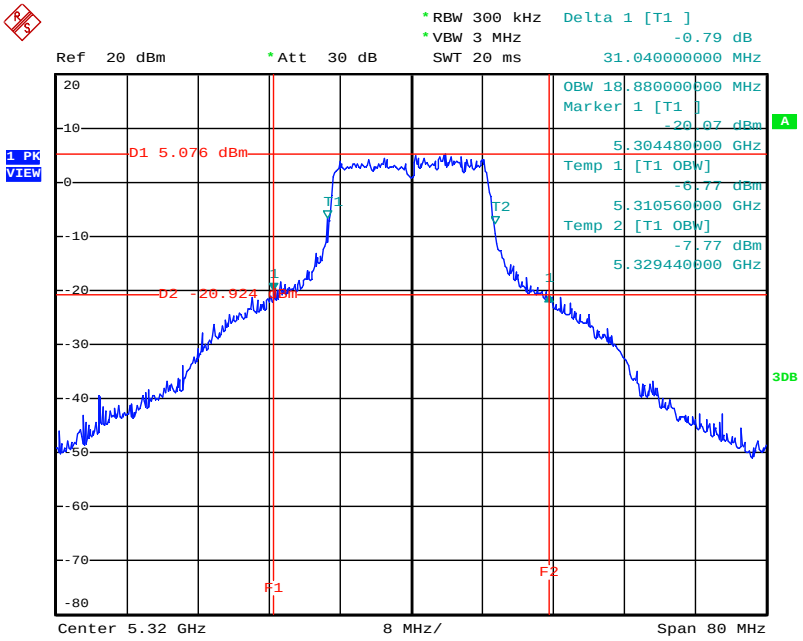
Date: 3.JUL.2013 16:57:35

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5300 MHz



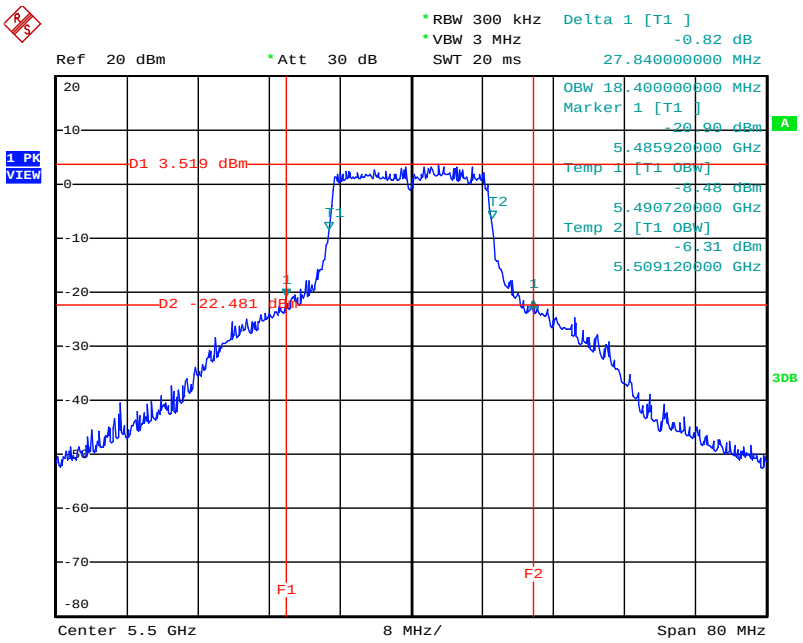
Date: 3.JUL.2013 16:58:00

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5320 MHz



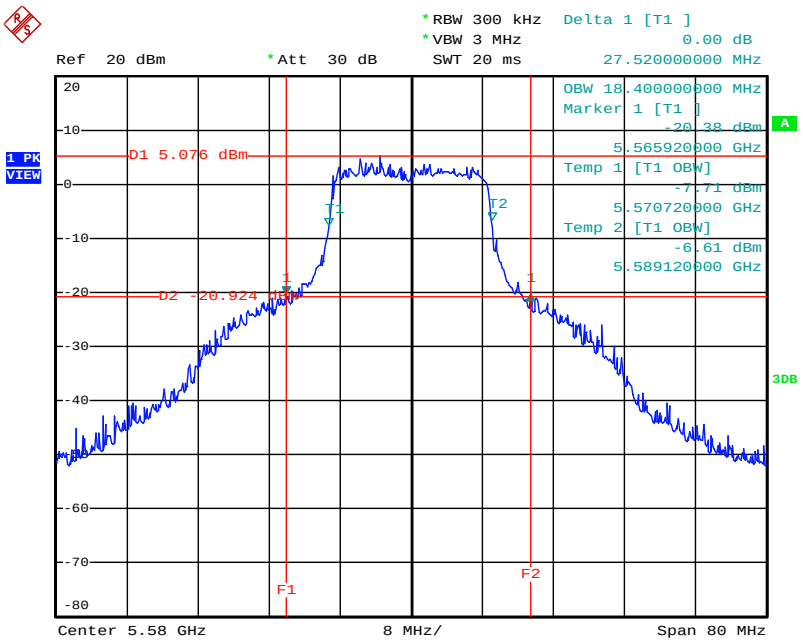
Date: 3.JUL.2013 16:58:23

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5500 MHz



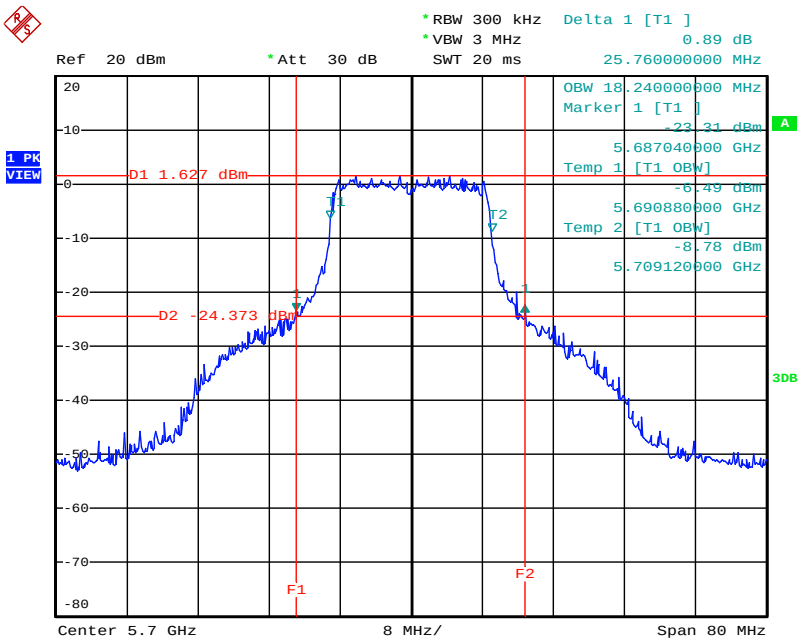
Date: 3.JUL.2013 16:58:47

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5580 MHz



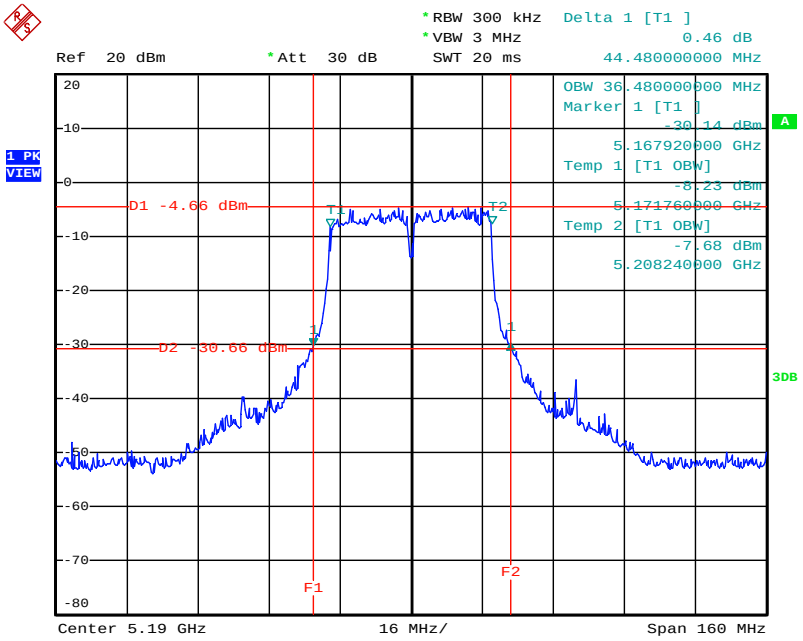
Date: 3.JUL.2013 16:59:12

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5700 MHz



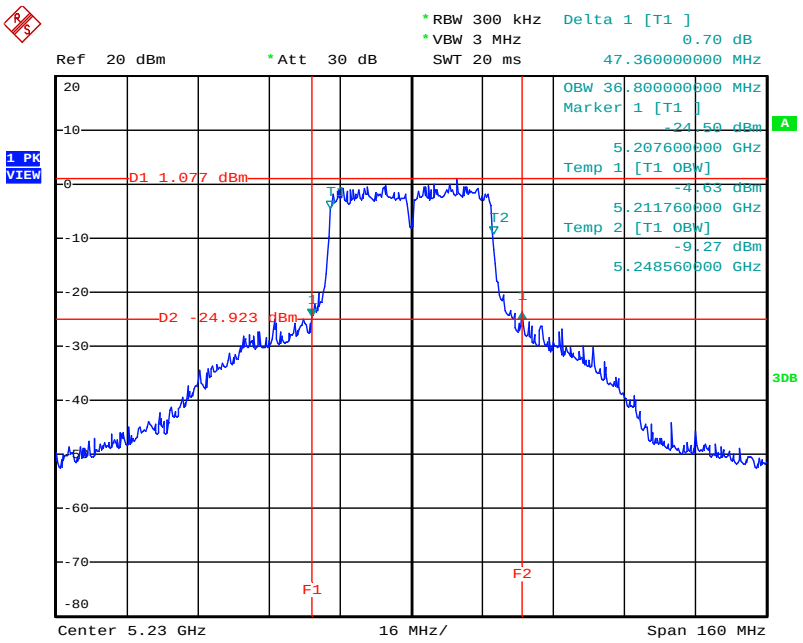
Date: 3.JUL.2013 16:59:35

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5190 MHz



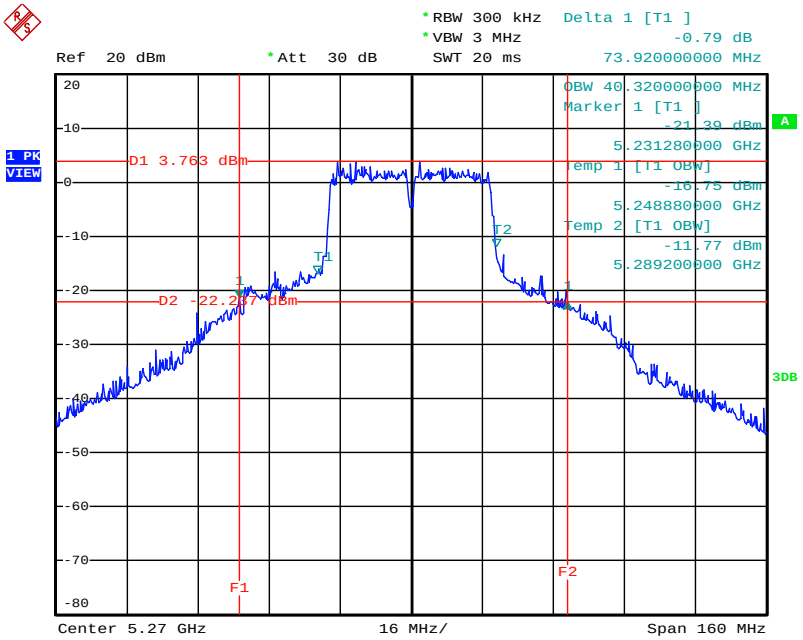
Date: 3.JUL.2013 16:52:56

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5230 MHz



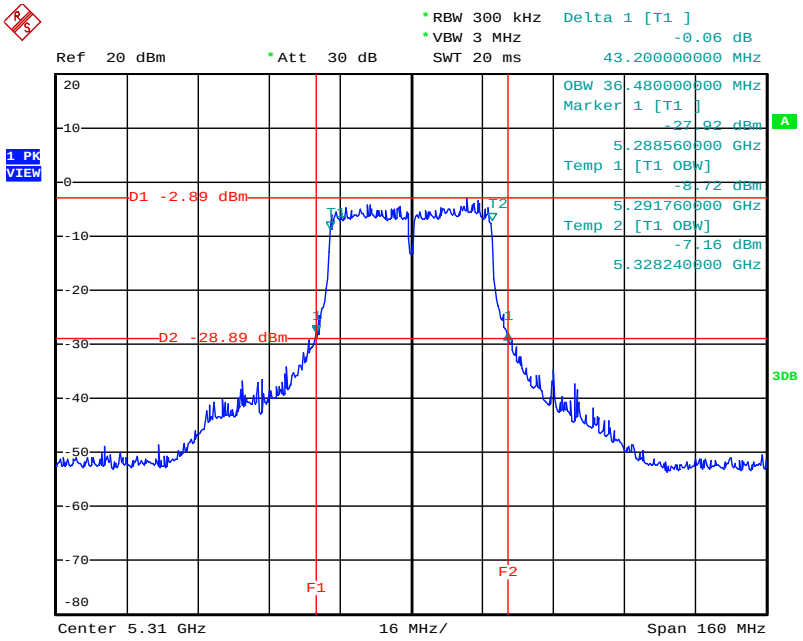
Date: 3.JUL.2013 16:53:23

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5270 MHz



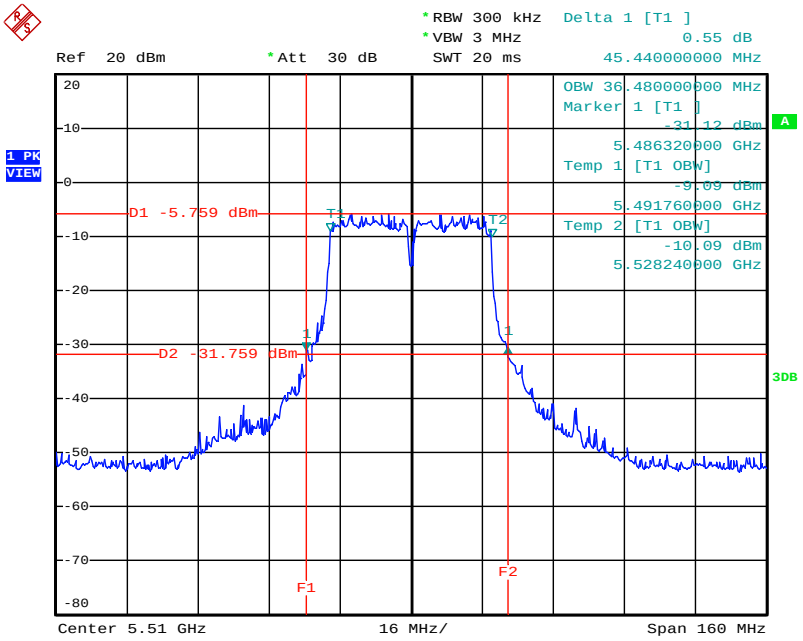
Date: 3.JUL.2013 16:53:47

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5310 MHz



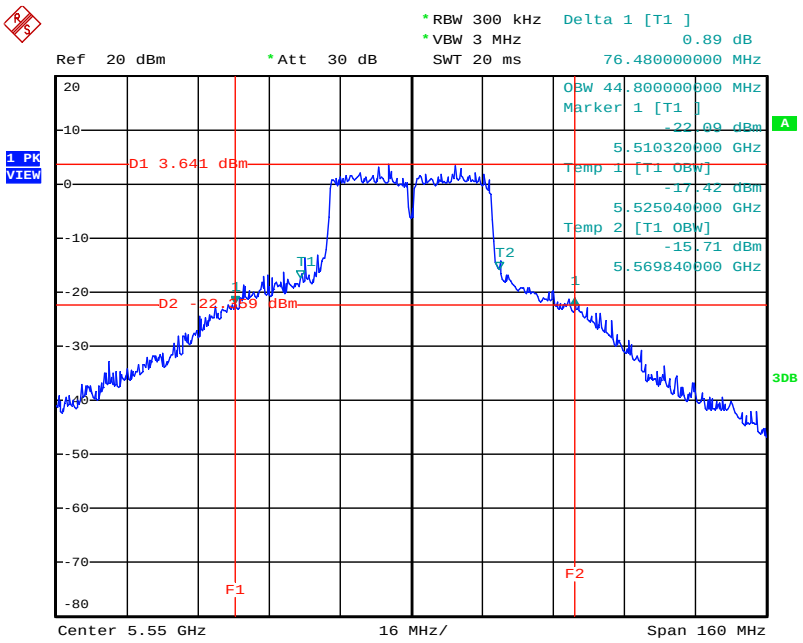
Date: 3.JUL.2013 16:54:18

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5510MHz



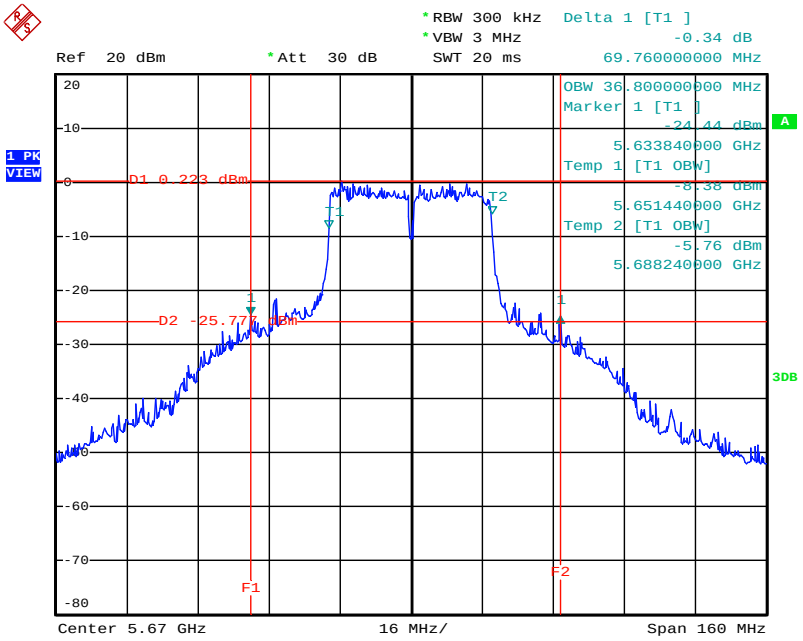
Date: 3.JUL.2013 16:54:48

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5550 MHz



Date: 3.JUL.2013 16:55:11

26dB Bandwidth & 99% Occupied Bandwidth Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5670 MHz



Date: 3.JUL.2013 16:55:38

4.3. Maximum Conducted Output Power Measurement

4.3.1. Limit

For the band 5.15~5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B, where B is the 26 dB emissions bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.470-5.725 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, where B is the 26-dB emission bandwidth in MHz. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

4.3.2. Measuring Instruments and Setting

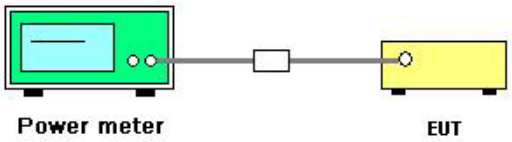
The following table is the setting of the peak power meter.

Power Meter Parameter	Setting
Bandwidth	50MHz bandwidth is greater than the EUT emission bandwidth
Detector	AVERAGE

4.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Test was performed in accordance with KDB 789033 D01 v01r03 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E,section (E) Maximum conducted output power =>(3) Method PM (Measurement using an RF average power meter) Multiple antenna systems was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. When measuring maximum conducted output power with multiple antenna systems,add every result of the values by mathematic formula.

4.3.4. Test Setup Layout



4.3.5. Test Deviation

There is no deviation with the original standard.

4.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.3.7. Test Result of Maximum Conducted Output Power

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n
Test Date	Jul. 03, 2013		

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	Conducted Power (dBm)	Limit (dBm)	Result
36	5180 MHz	14.48	16.65	Complies
40	5200 MHz	16.43	16.65	Complies
48	5240 MHz	16.46	16.65	Complies
52	5260 MHz	16.58	23.65	Complies
60	5300 MHz	16.33	23.65	Complies
64	5320 MHz	13.35	23.65	Complies
100	5500 MHz	13.74	23.65	Complies
116	5580 MHz	16.31	23.65	Complies
140	5700 MHz	13.15	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	Conducted Power (dBm)	Limit (dBm)	Result
38	5190 MHz	9.51	16.65	Complies
46	5230 MHz	16.12	16.65	Complies
54	5270 MHz	16.01	23.65	Complies
62	5310 MHz	8.63	23.65	Complies
102	5510MHz	8.42	23.65	Complies
110	5550 MHz	16.07	23.65	Complies
134	5670 MHz	14.54	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Conducted Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 0	Chain 1			
36	5180 MHz	9.19	12.32	14.04	16.65	Complies
40	5200 MHz	9.20	11.95	13.80	16.65	Complies
48	5240 MHz	9.02	12.29	13.97	16.65	Complies
52	5260 MHz	12.58	15.23	17.11	23.65	Complies
60	5300 MHz	13.65	16.06	18.03	23.65	Complies
64	5320 MHz	13.31	15.66	17.65	23.65	Complies
100	5500 MHz	12.71	12.23	15.49	23.65	Complies
116	5580 MHz	14.69	14.28	17.50	23.65	Complies
140	5700 MHz	12.37	11.84	15.12	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Conducted Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 0	Chain 1			
38	5190 MHz	7.92	10.52	12.42	16.65	Complies
46	5230 MHz	11.47	14.66	16.36	16.65	Complies
54	5270 MHz	14.16	17.49	19.15	23.65	Complies
62	5310 MHz	8.86	10.72	12.90	23.65	Complies
102	5510MHz	8.13	7.16	10.68	23.65	Complies
110	5550 MHz	16.32	14.92	18.69	23.65	Complies
134	5670 MHz	15.15	13.35	17.35	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Conducted Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 0	Chain 1			
36	5180 MHz	11.62	14.72	16.45	16.65	Complies
40	5200 MHz	11.56	14.69	16.41	16.65	Complies
48	5240 MHz	11.59	14.81	16.50	16.65	Complies
52	5260 MHz	13.92	17.08	18.79	23.65	Complies
60	5300 MHz	15.41	17.96	19.88	23.65	Complies
64	5320 MHz	13.77	16.18	18.15	23.65	Complies
100	5500 MHz	13.52	13.27	16.41	23.65	Complies
116	5580 MHz	14.22	14.00	17.12	23.65	Complies
140	5700 MHz	12.55	12.02	15.30	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Conducted Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 0	Chain 1			
38	5190 MHz	7.89	10.12	12.16	16.65	Complies
46	5230 MHz	11.42	14.84	16.47	16.65	Complies
54	5270 MHz	14.55	19.32	20.57	23.65	Complies
62	5310 MHz	8.59	10.45	12.63	23.65	Complies
102	5510MHz	7.57	6.71	10.17	23.65	Complies
110	5550 MHz	16.55	15.35	19.00	23.65	Complies
134	5670 MHz	15.16	13.40	17.38	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11a
Test Date	Jul. 03, 2013		

Configuration IEEE 802.11a / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	Conducted Power (dBm)	Limit (dBm)	Result
36	5180 MHz	14.51	16.65	Complies
40	5200 MHz	16.49	16.65	Complies
48	5240 MHz	16.48	16.65	Complies
52	5260 MHz	16.43	23.65	Complies
60	5300 MHz	16.39	23.65	Complies
64	5320 MHz	13.42	23.65	Complies
100	5500 MHz	13.84	23.65	Complies
116	5580 MHz	16.34	23.65	Complies
140	5700 MHz	13.18	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

Configuration IEEE 802.11a / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Conducted Power (dBm)		Total Conducted Output Power (dBm)	Max. Limit (dBm)	Result
		Chain 0	Chain 1			
36	5180 MHz	9.17	12.05	13.85	16.65	Complies
40	5200 MHz	8.95	11.95	13.71	16.65	Complies
48	5240 MHz	8.97	12.32	13.97	16.65	Complies
52	5260 MHz	12.15	15.06	16.85	23.65	Complies
60	5300 MHz	13.71	15.67	17.81	23.65	Complies
64	5320 MHz	13.42	15.65	17.69	23.65	Complies
100	5500 MHz	12.79	12.58	15.70	23.65	Complies
116	5580 MHz	13.85	13.72	16.80	23.65	Complies
140	5700 MHz	12.52	12.30	15.42	23.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 17 – (6.35 – 6) = 16.65dBm.

Antenna true gain =6.35dBi >6dBi, so limit= 24 – (6.35 – 6) = 23.65dBm.

4.4. Power Spectral Density Measurement

4.4.1. Limit

The power spectral density is defined as the highest level of power in dBm per MHz generated by the transmitter within the power envelope. The following table is power spectral density limits and decrease power density limit rule refer to section 4.3.1.

Frequency Range	Power Spectral Density limit (dBm/MHz)
5.15~5.25 GHz	4
5.25-5.35 GHz	11
5.470-5.725 GHz	11

4.4.2. Measuring Instruments and Setting

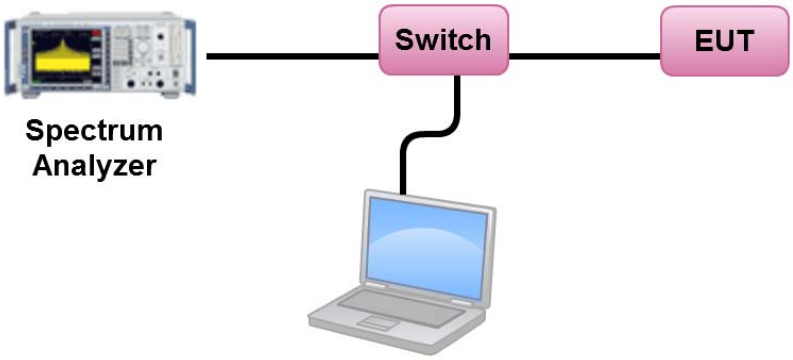
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1000 kHz
VBW	3000 kHz
Detector	RMS
Trace	AVERAGE
Sweep Time	Auto
Trace Average	100 times

4.4.3. Test Procedures

1. The transmitter output (antenna port) was connected RF switch to the spectrum analyzer.
2. Test was performed in accordance with KDB 789033 D01 v01r03 for Compliance Testing of Unlicensed National Information Infrastructure (U-NII) Devices - Part 15, Subpart E,section (C) Maximum conducted output power => (d) Method SA-2 (trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).
3. Multiple antenna systems was performed in accordance KDB 662911 D01 v02r01 in-Band Power Spectral Density (PSD) Measurements (a) Measure and sum the spectra across the outputs.
4. When measuring first spectral bin of output 1 is summed with that in the first spectral bin of output 2 and that from the first spectral bin of output 3 and so on up to the Nth output to obtain the value for the first frequency bin of the summed spectrum. The summed spectrum value for each of the other frequency bins is computed in the same way.

4.4.4. Test Setup Layout



4.4.5. Test Deviation

There is no deviation with the original standard.

4.4.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.4.7. Test Result of Power Spectral Density

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n
Test Date	Jul. 03, 2013		

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	Power Density (dBm/MHz)	Limit (dBm/MHz)	Result
36	5180 MHz	0.90	3.65	Complies
40	5200 MHz	2.79	3.65	Complies
48	5240 MHz	2.84	3.65	Complies
52	5260 MHz	2.94	10.65	Complies
60	5300 MHz	2.81	10.65	Complies
64	5320 MHz	-0.33	10.65	Complies
100	5500 MHz	0.05	10.65	Complies
116	5580 MHz	2.70	10.65	Complies
140	5700 MHz	-0.53	10.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 4 – (6.35 – 6) = 3.65dBm/MHz.

Antenna true gain =6.35dBi >6dBi, so limit= 11 – (6.35 – 6) = 10.65dBm/MHz.

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)

Channel	Frequency	Power Density (dBm/MHz)	Limit (dBm/MHz)	Result
38	5190 MHz	-7.19	3.65	Complies
46	5230 MHz	-0.32	3.65	Complies
54	5270 MHz	-0.63	10.65	Complies
62	5310 MHz	-8.19	10.65	Complies
102	5510MHz	-8.36	10.65	Complies
110	5550 MHz	-0.53	10.65	Complies
134	5670 MHz	-1.83	10.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 4 – (6.35 – 6) = 3.65dBm/MHz.

Antenna true gain =6.35dBi >6dBi, so limit= 11 – (6.35 – 6) = 10.65dBm/MHz.

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	0.54	0.64	Complies
40	5200 MHz	0.41	0.64	Complies
48	5240 MHz	0.62	0.64	Complies
52	5260 MHz	3.87	7.64	Complies
60	5300 MHz	4.84	7.64	Complies
64	5320 MHz	4.40	7.64	Complies
100	5500 MHz	2.22	7.64	Complies
116	5580 MHz	4.36	7.64	Complies
140	5700 MHz	1.64	7.64	Complies

Note: Directional gain=GANT+10log(NANT/Nss)=9.36dBi >6dBi, so limit=4 – (9.36 – 6)= 0.64dBm/MHz.

Directional gain=GANT+10log(NANT/Nss)=9.36dBi >6dBi, so limit=11 – (9.36 – 6)= 7.64dBm/MHz.

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	-4.02	0.64	Complies
46	5230 MHz	-0.03	0.64	Complies
54	5270 MHz	2.96	7.64	Complies
62	5310 MHz	-3.61	7.64	Complies
102	5510MHz	-5.48	7.64	Complies
110	5550 MHz	1.84	7.64	Complies
134	5670 MHz	0.66	7.64	Complies

Note: Directional gain=GANT+10log(NANT/Nss)=9.36dBi >6dBi, so limit=4 – (9.36 – 6)= 0.64dBm/MHz.

Directional gain=GANT+10log(NANT/Nss)=9.36dBi >6dBi, so limit=11 – (9.36 – 6)= 7.64dBm/MHz.

Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
36	5180 MHz	2.90	3.65	Complies
40	5200 MHz	2.69	3.65	Complies
48	5240 MHz	3.22	3.65	Complies
52	5260 MHz	5.62	10.65	Complies
60	5300 MHz	6.71	10.65	Complies
64	5320 MHz	4.66	10.65	Complies
100	5500 MHz	3.04	10.65	Complies
116	5580 MHz	3.94	10.65	Complies
140	5700 MHz	1.84	10.65	Complies

Note: Antenna true gain =6.35dBi >6dBi, so limit= 4 – (6.35 – 6) = 3.65dBm/MHz.

Antenna true gain =6.35dBi >6dBi, so limit= 11 – (6.35 – 6) = 10.65dBm/MHz.

Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Channel	Frequency	Total Power Density (dBm/MHz)	Max. Limit (dBm/MHz)	Result
38	5190 MHz	-4.16	3.65	Complies
46	5230 MHz	0.23	3.65	Complies
54	5270 MHz	4.18	10.65	Complies
62	5310 MHz	-4.02	10.65	Complies
102	5510MHz	-6.02	10.65	Complies
110	5550 MHz	2.74	10.65	Complies
134	5670 MHz	0.58	10.65	Complies

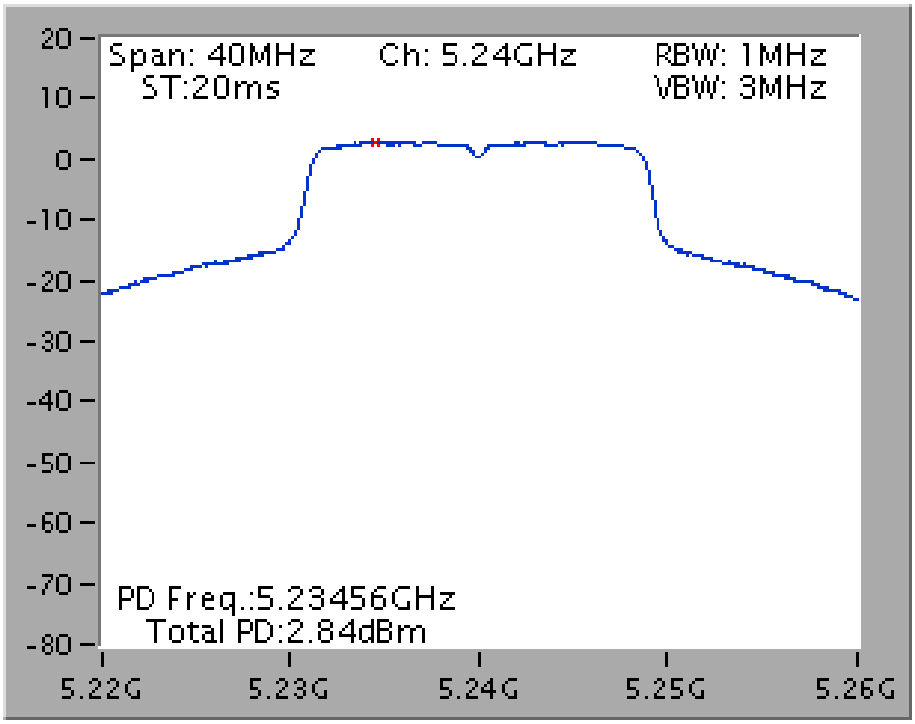
Note: Antenna true gain =6.35dBi >6dBi, so limit= 4 – (6.35 – 6) = 3.65dBm/MHz.

Antenna true gain =6.35dBi >6dBi, so limit= 11 – (6.35 – 6) = 10.65dBm/MHz.

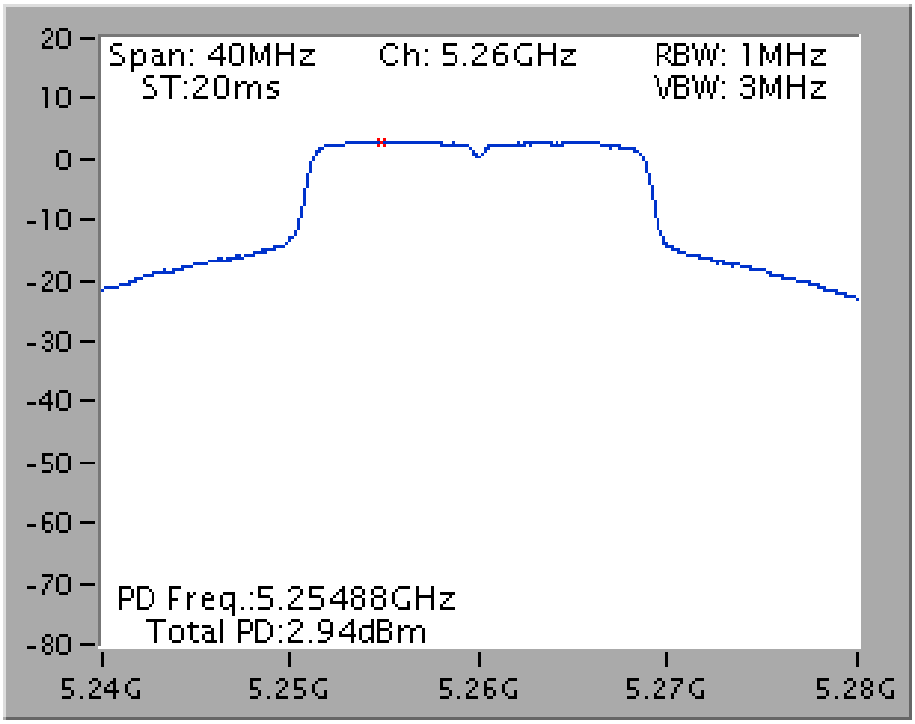
Note: All the test values were listed in the report.

For plots, only the channel with maximum results was shown.

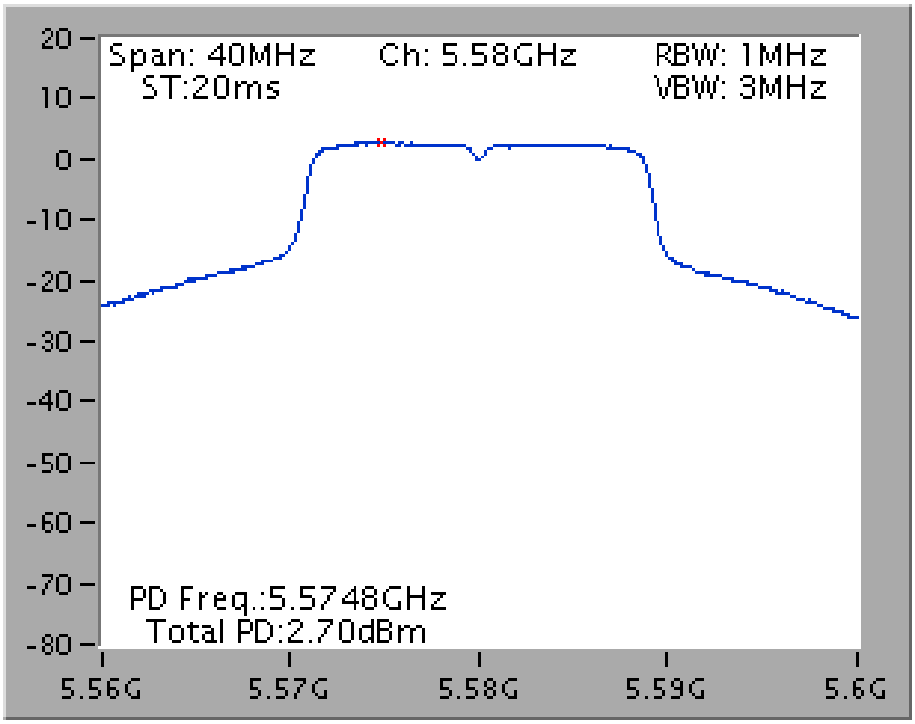
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5240 MHz



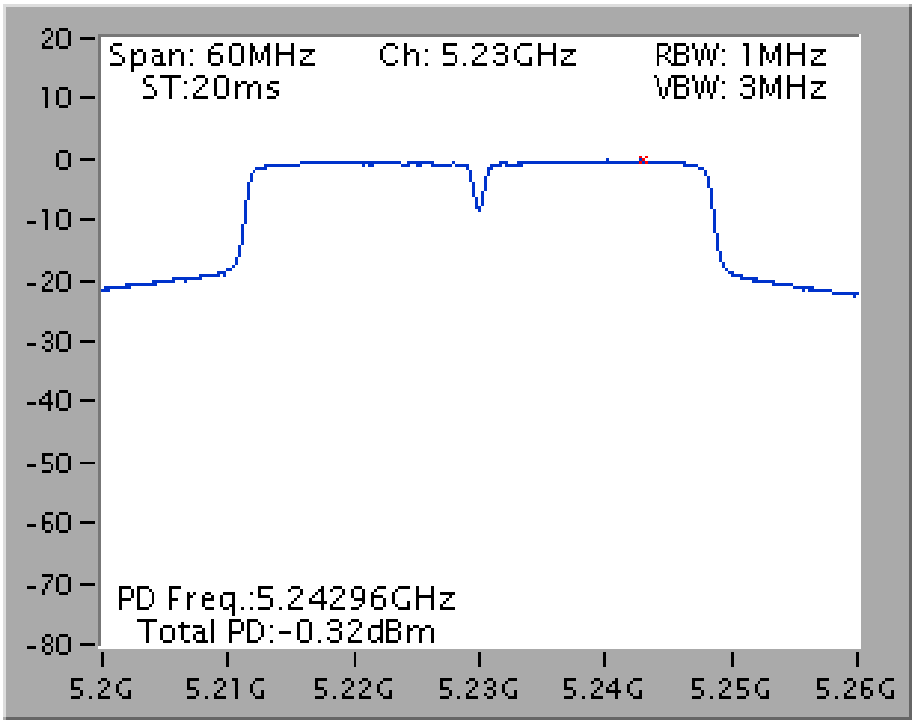
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5260 MHz



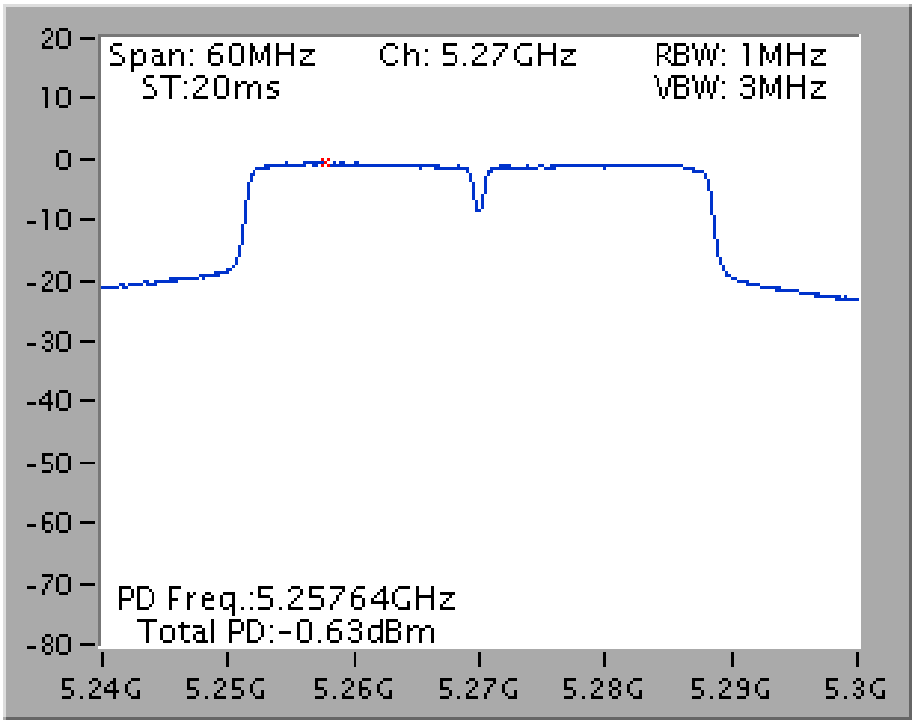
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 5580 MHz



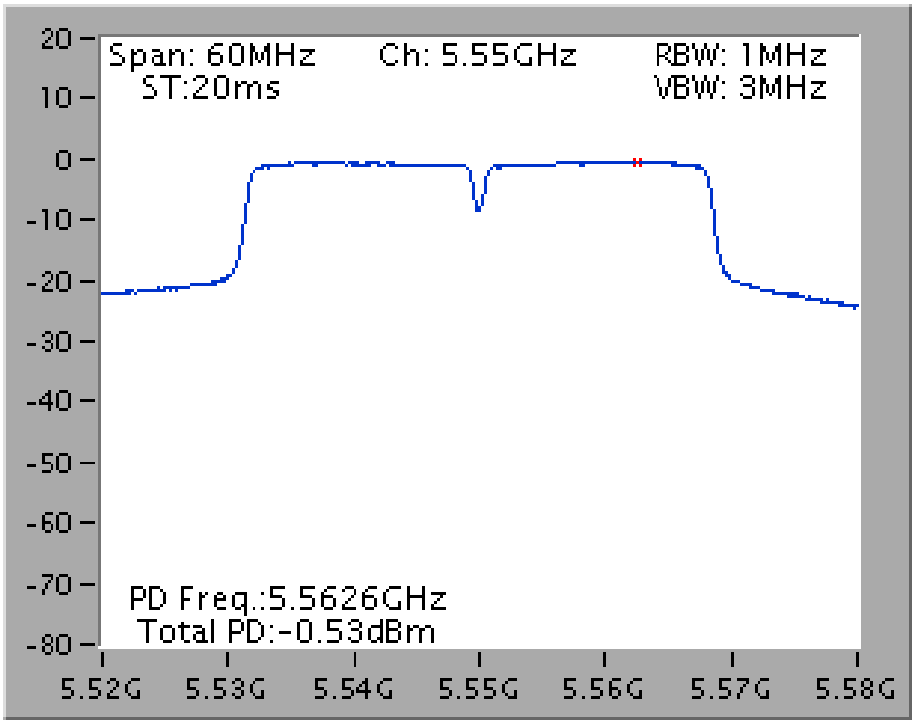
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5230 MHz



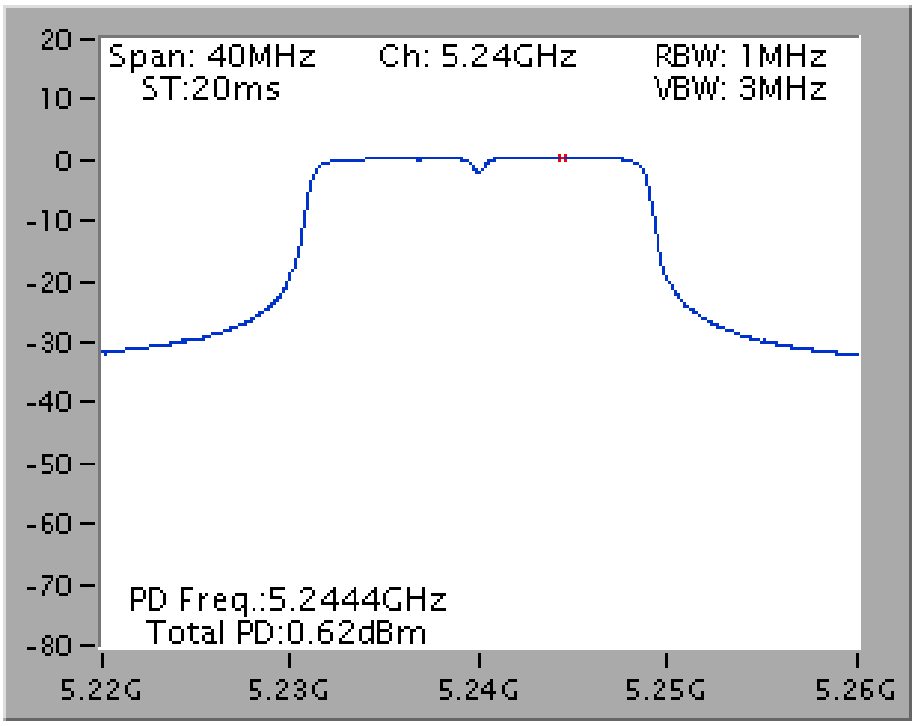
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5270 MHz



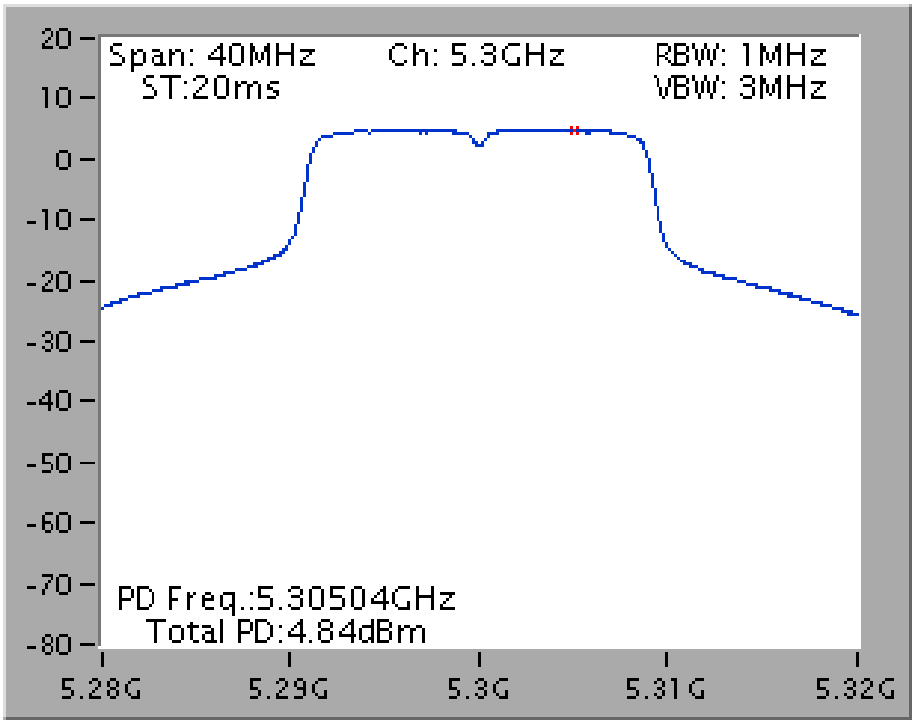
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 5550 MHz



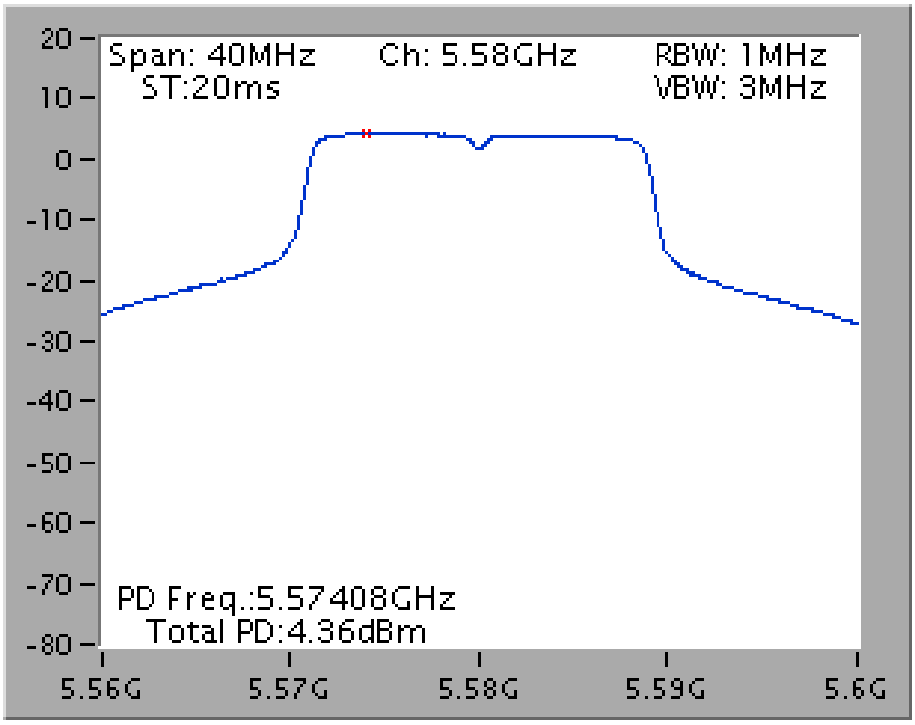
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5240 MHz



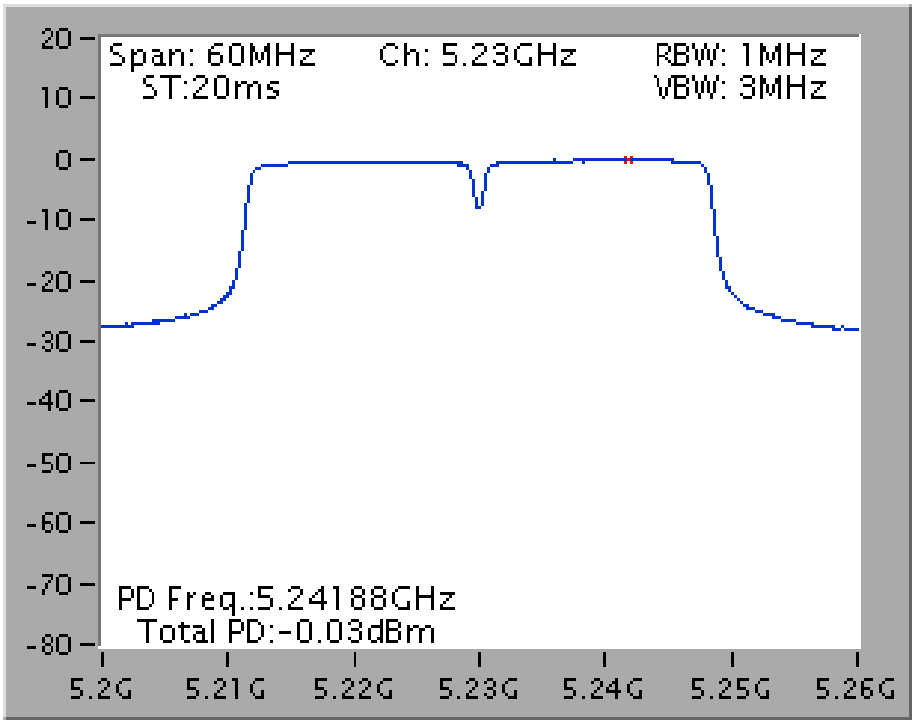
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5300 MHz



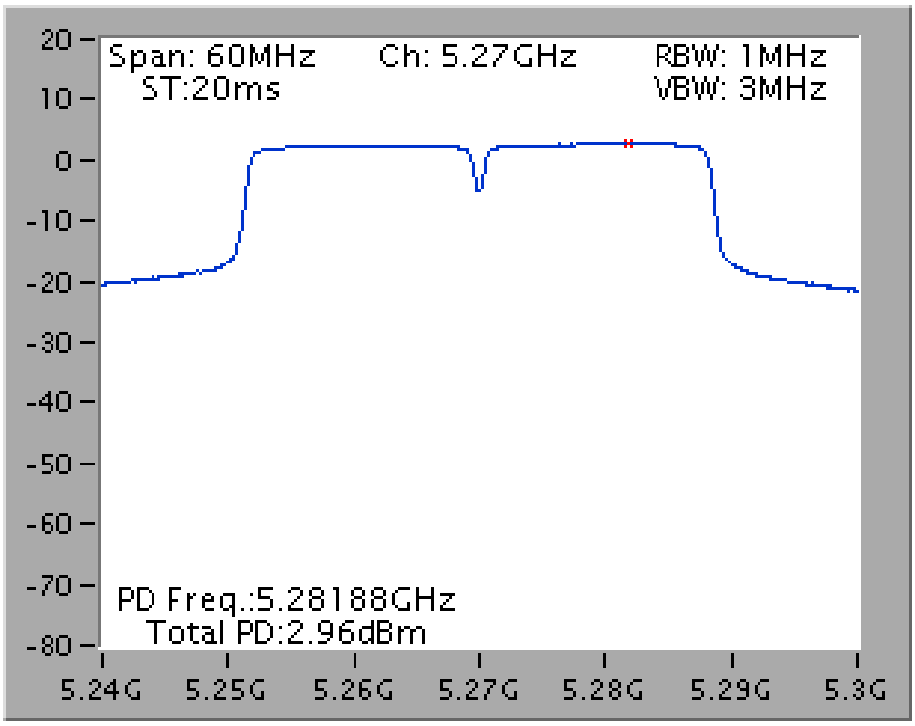
Power Density Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5580 MHz



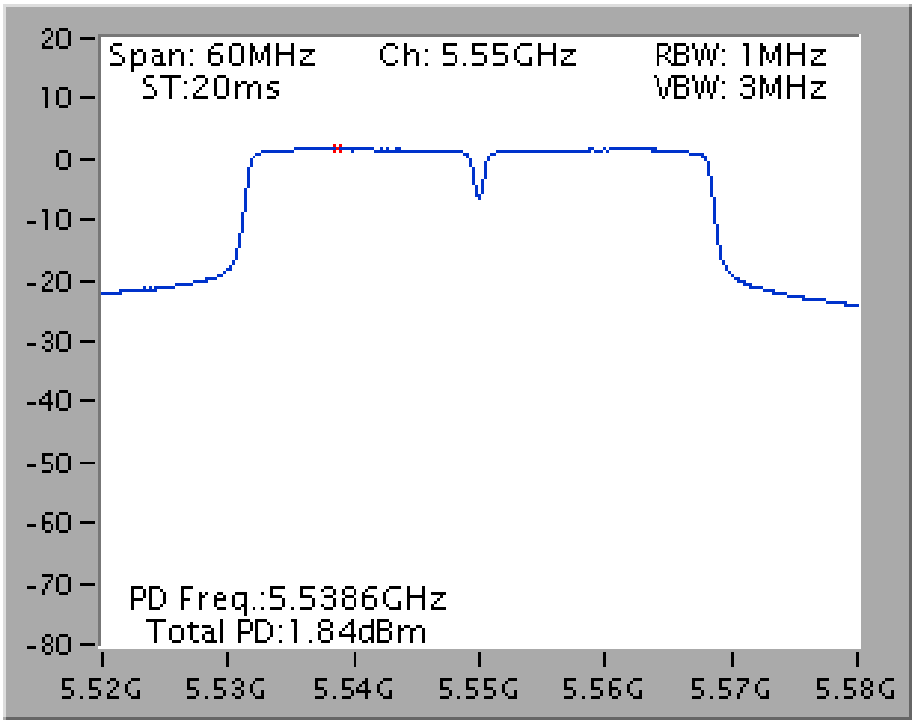
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5230 MHz



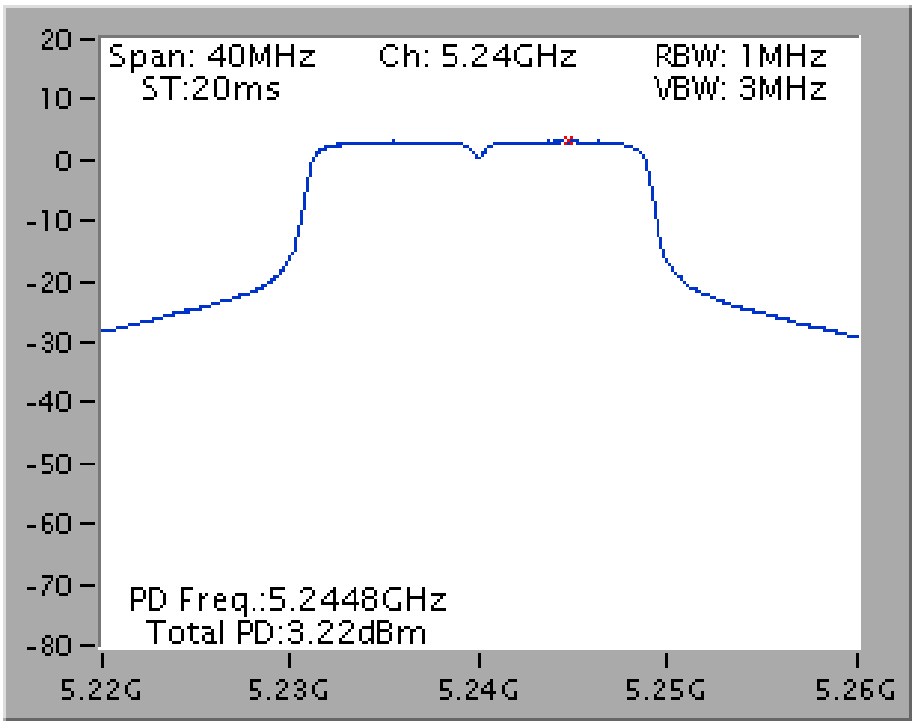
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5270 MHz



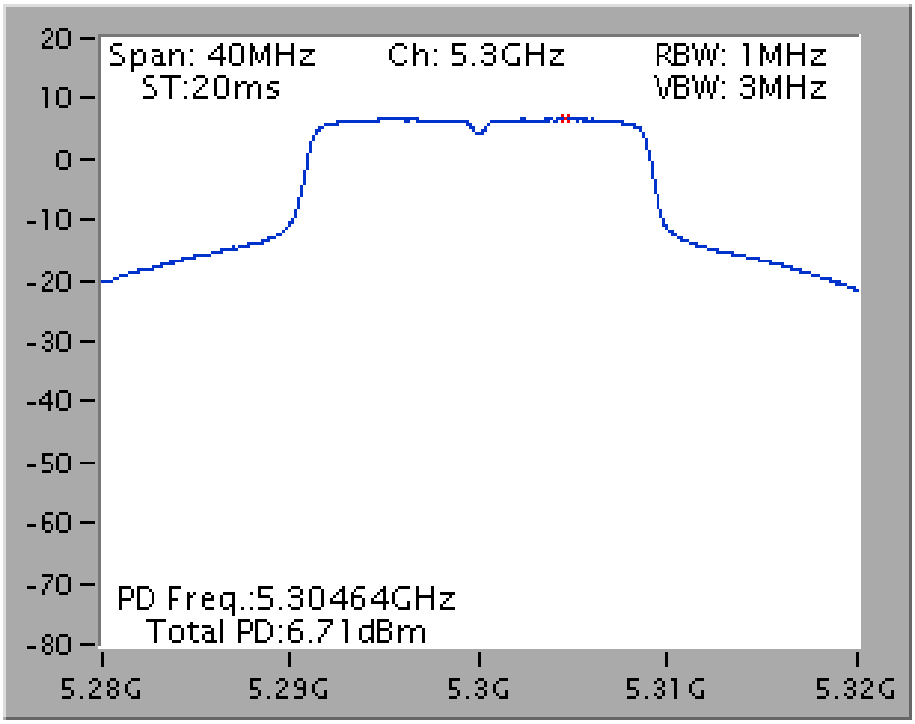
Power Density Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5550 MHz



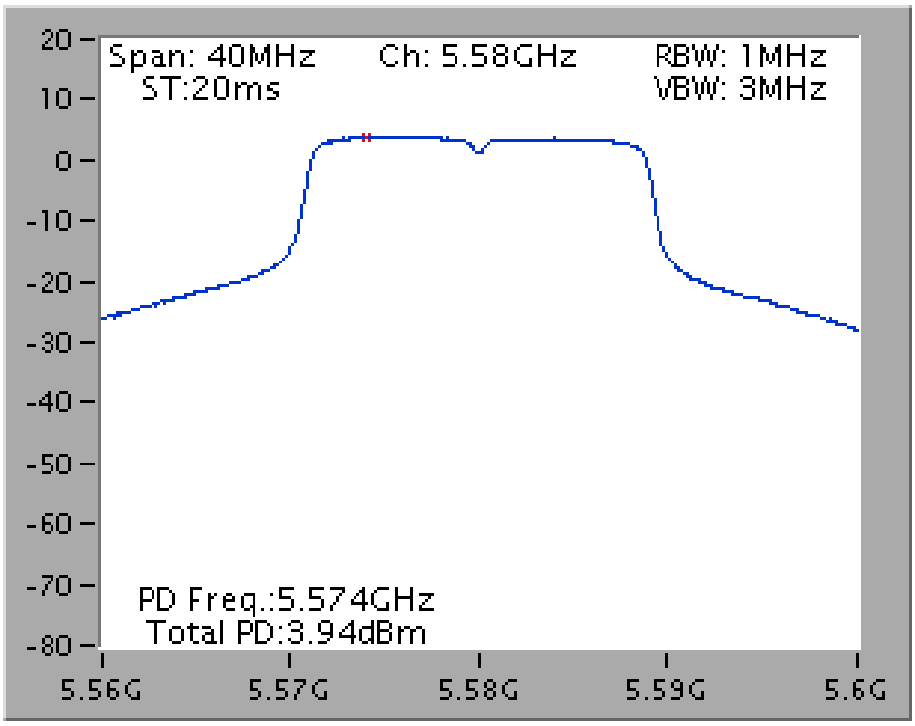
Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5240 MHz



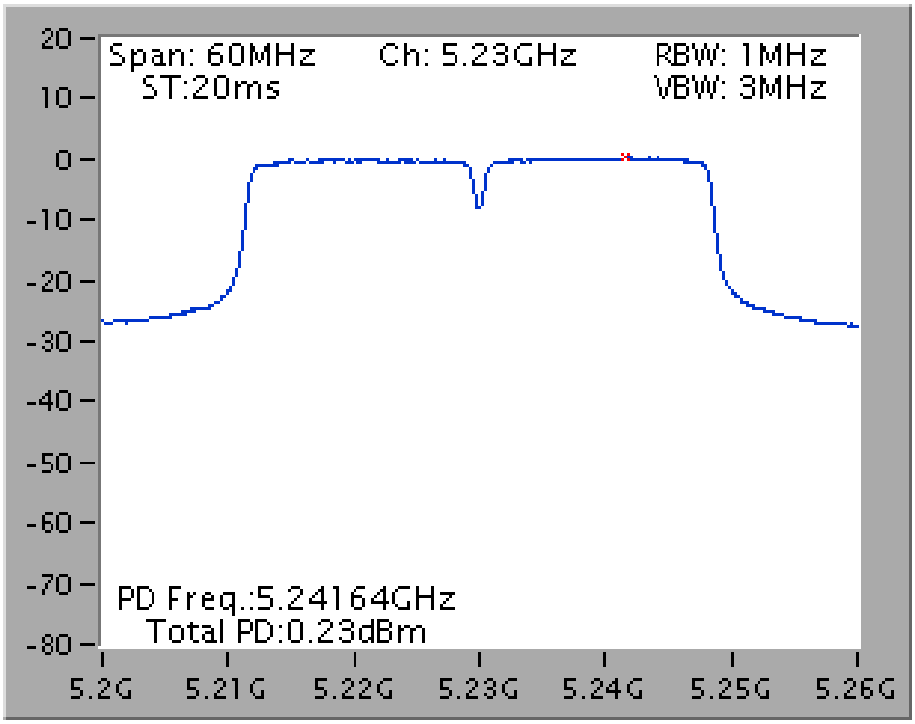
Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5300 MHz



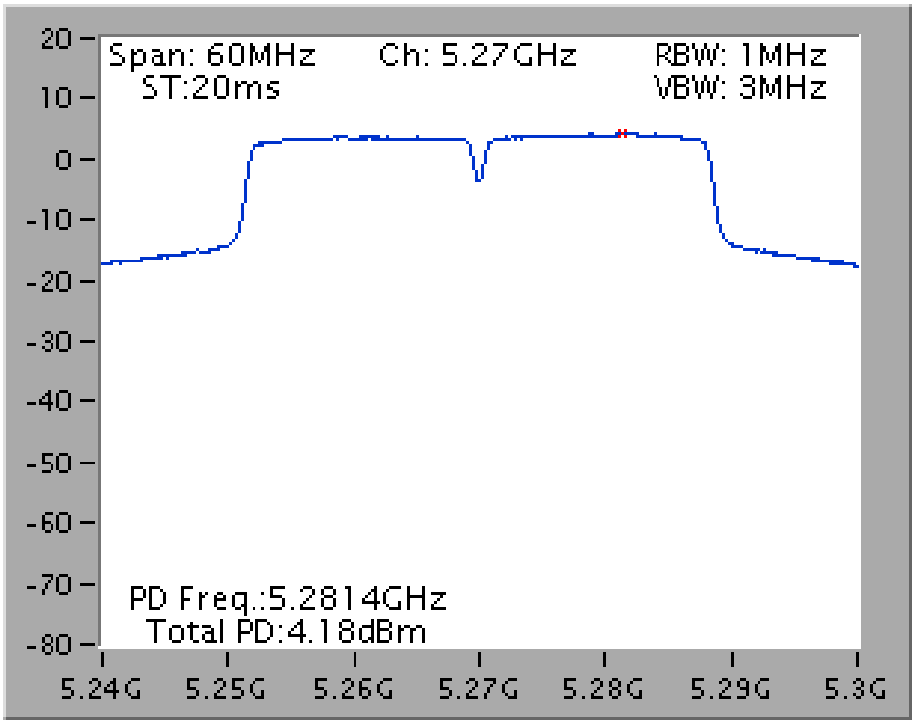
Power Density Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5580 MHz



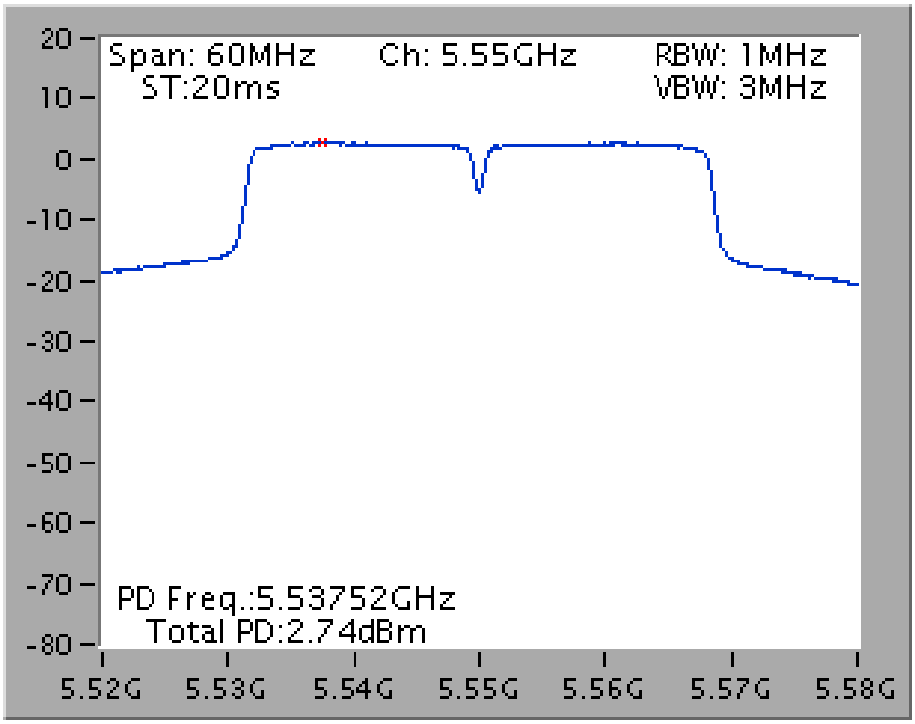
Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5230 MHz



Power Density Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5270 MHz



Power Density Plot on Configuration IEEE 802.11n MCS80 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 5550 MHz



4.5. Peak Excursion Measurement

4.5.1. Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the maximum conducted output power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emissions bandwidth whichever is less.

4.5.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Encompass the entire emissions bandwidth (EBW) of the signal
RBW	1MHz (Peak Trace) / 1MHz (Average Trace)
VBW	≥ 3MHz (Peak Trace) / ≥ 3MHz (Average Trace)
Detector	Peak (Peak Trace) / RMS (Average Trace)
Trace	Trace: Max hold (Peak Trace) / Trace Average Sweep Count 100 (Average Trace)
Sweep Time	AUTO

4.5.3. Test Procedures

1. Trace A, Set RBW =1MHz, VBW = 3MHz, Span >26dB bandwidth, Max. hold.
2. Delta Mark trace A Maximum frequency and trace B same frequency.
3. Repeat the above procedure until measurements for all frequencies were complete.
4. Testing each modulation mode on a single channel in single operating band at single output port. All signal types need test (DSSS, OFDM). All modulation types need test (BPSK, QPSK, 16-QAM, 64-QAM). All bandwidth modes need test.

4.5.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.4.4.

4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.5.7. Test Result of Peak Excursion

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Configurations	IEEE 802.11n

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX)

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK (MCS0)	5240 MHz	8.74	13	Complies
QPSK (MCS1)	5240 MHz	8.88	13	Complies
16QAM (MCS3)	5240 MHz	9.89	13	Complies
64QAM (MCS5)	5240 MHz	9.64	13	Complies
BSPK (MCS0)	5260 MHz	8.96	13	Complies
QPSK (MCS1)	5260 MHz	8.65	13	Complies
16QAM (MCS3)	5260 MHz	8.94	13	Complies
64QAM (MCS5)	5260 MHz	8.94	13	Complies
BSPK (MCS0)	5580 MHz	8.77	13	Complies
QPSK (MCS1)	5580 MHz	9.00	13	Complies
16QAM (MCS3)	5580 MHz	8.68	13	Complies
64QAM (MCS5)	5580 MHz	9.83	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX)

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK (MCS0)	5230 MHz	9.00	13	Complies
QPSK (MCS1)	5230 MHz	9.13	13	Complies
16QAM (MCS3)	5230 MHz	8.93	13	Complies
64QAM (MCS5)	5230 MHz	9.70	13	Complies
BSPK (MCS0)	5270 MHz	8.95	13	Complies
QPSK (MCS1)	5270 MHz	8.97	13	Complies
16QAM (MCS3)	5270 MHz	9.26	13	Complies
64QAM (MCS5)	5270 MHz	9.79	13	Complies
BSPK (MCS0)	5550 MHz	8.62	13	Complies
QPSK (MCS1)	5550 MHz	9.21	13	Complies
16QAM (MCS3)	5550 MHz	9.87	13	Complies
64QAM (MCS5)	5550 MHz	9.33	13	Complies

Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK (MCS0)	5180 MHz	8.23	13	Complies
QPSK (MCS1)	5180 MHz	8.70	13	Complies
16QAM (MCS3)	5180 MHz	8.67	13	Complies
64QAM (MCS5)	5180 MHz	10.18	13	Complies
BSPK (MCS0)	5300 MHz	8.69	13	Complies
QPSK (MCS1)	5300 MHz	8.76	13	Complies
16QAM (MCS3)	5300 MHz	9.86	13	Complies
64QAM (MCS5)	5300 MHz	9.47	13	Complies
BSPK (MCS0)	5580 MHz	8.32	13	Complies
QPSK (MCS1)	5580 MHz	9.19	13	Complies
16QAM (MCS3)	5580 MHz	9.19	13	Complies
64QAM (MCS5)	5580 MHz	10.27	13	Complies

Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK (MCS0)	5230 MHz	8.79	13	Complies
QPSK (MCS1)	5230 MHz	8.95	13	Complies
16QAM (MCS3)	5230 MHz	9.61	13	Complies
64QAM (MCS5)	5230 MHz	9.89	13	Complies
BSPK (MCS0)	5270 MHz	9.52	13	Complies
QPSK (MCS1)	5270 MHz	8.86	13	Complies
16QAM (MCS3)	5270 MHz	9.91	13	Complies
64QAM (MCS5)	5270 MHz	9.74	13	Complies
BSPK (MCS0)	5550 MHz	9.62	13	Complies
QPSK (MCS1)	5550 MHz	9.49	13	Complies
16QAM (MCS3)	5550 MHz	9.51	13	Complies
64QAM (MCS5)	5550 MHz	10.36	13	Complies

Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

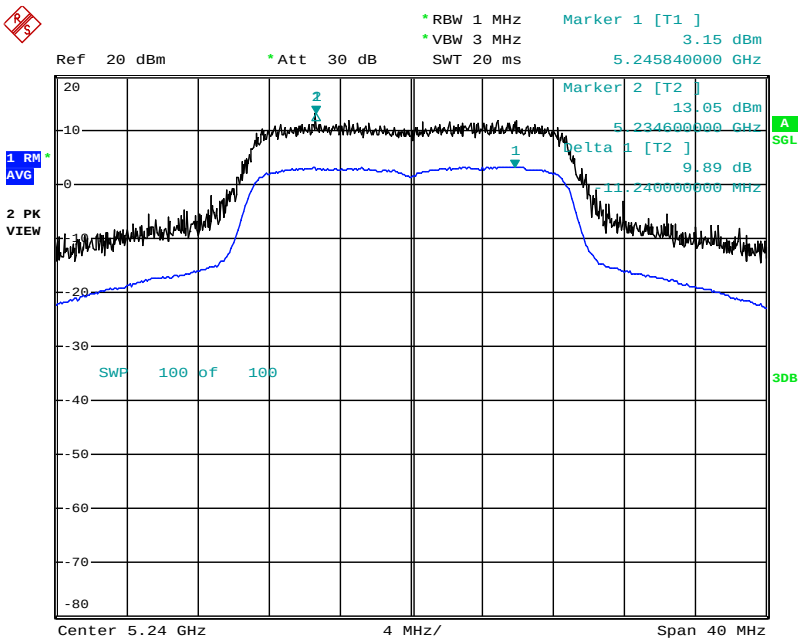
Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK (MCS8)	5240 MHz	10.34	13	Complies
QPSK (MCS9)	5240 MHz	9.07	13	Complies
16QAM (MCS11)	5240 MHz	9.18	13	Complies
64QAM (MCS13)	5240 MHz	9.70	13	Complies
BSPK (MCS8)	5300 MHz	9.53	13	Complies
QPSK (MCS9)	5300 MHz	9.45	13	Complies
16QAM (MCS11)	5300 MHz	9.77	13	Complies
64QAM (MCS13)	5300 MHz	9.99	13	Complies
BSPK (MCS8)	5580 MHz	9.32	13	Complies
QPSK (MCS9)	5580 MHz	8.96	13	Complies
16QAM (MCS11)	5580 MHz	9.63	13	Complies
64QAM (MCS13)	5580 MHz	10.74	13	Complies

Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX)

Modulation	Frequency	Peak Excursion (dB)	Max. Limit (dB)	Result
BSPK (MCS8)	5230 MHz	10.40	13	Complies
QPSK (MCS9)	5230 MHz	10.02	13	Complies
16QAM (MCS11)	5230 MHz	10.36	13	Complies
64QAM (MCS13)	5230 MHz	10.62	13	Complies
BSPK (MCS8)	5270 MHz	9.54	13	Complies
QPSK (MCS9)	5270 MHz	9.35	13	Complies
16QAM (MCS11)	5270 MHz	10.02	13	Complies
64QAM (MCS13)	5270 MHz	9.99	13	Complies
BSPK (MCS8)	5550 MHz	9.46	13	Complies
QPSK (MCS9)	5550 MHz	9.47	13	Complies
16QAM (MCS11)	5550 MHz	10.27	13	Complies
64QAM (MCS13)	5550 MHz	10.37	13	Complies

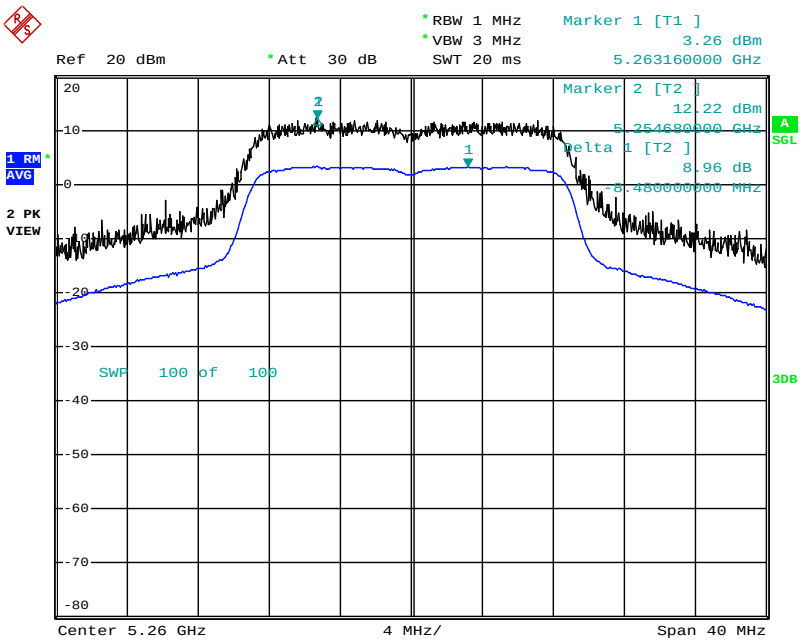
Note: Only the channel with maximum results was listed in the report.

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 16QAM (MCS3) / 5240 MHz



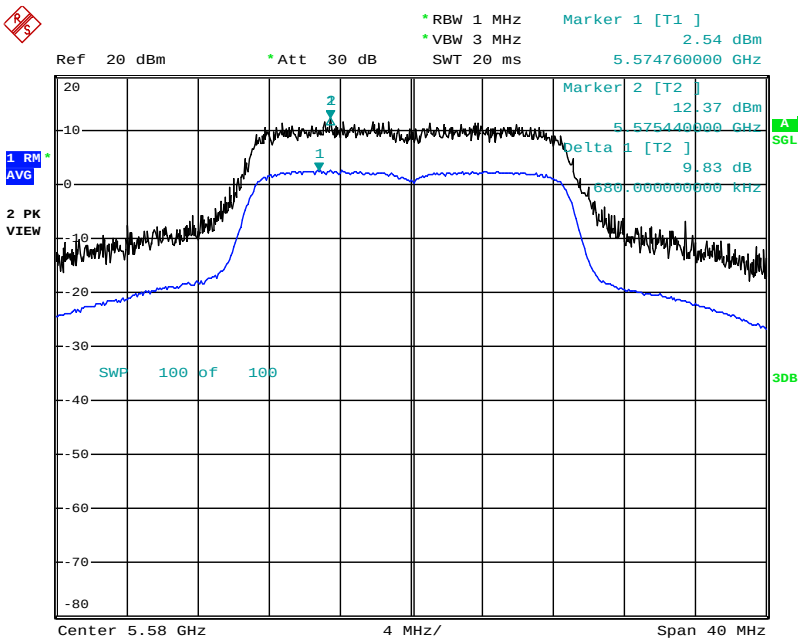
Date: 2.JUL.2013 18:51:09

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / BSPK (MCS0) / 5260 MHz



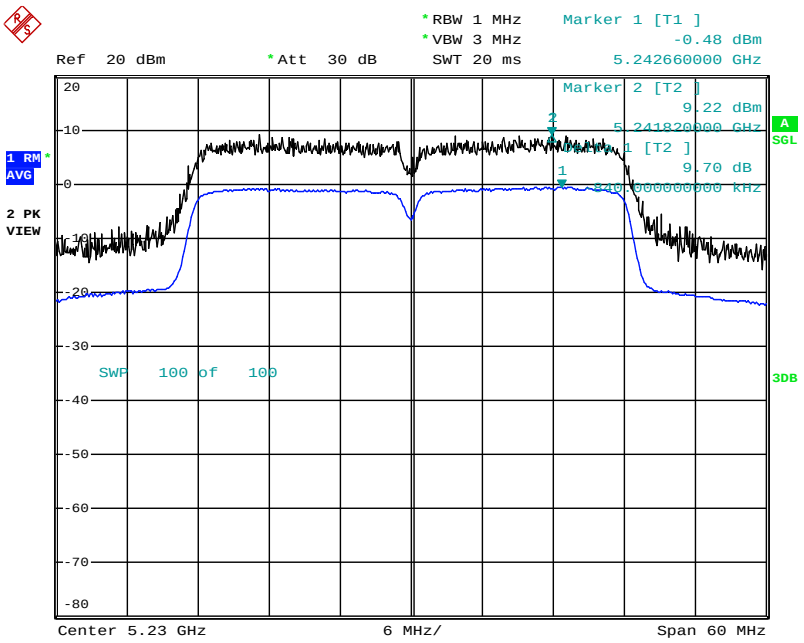
Date: 2.JUL.2013 18:53:31

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 (1TX) / 64QAM (MCS5) / 5580 MHz



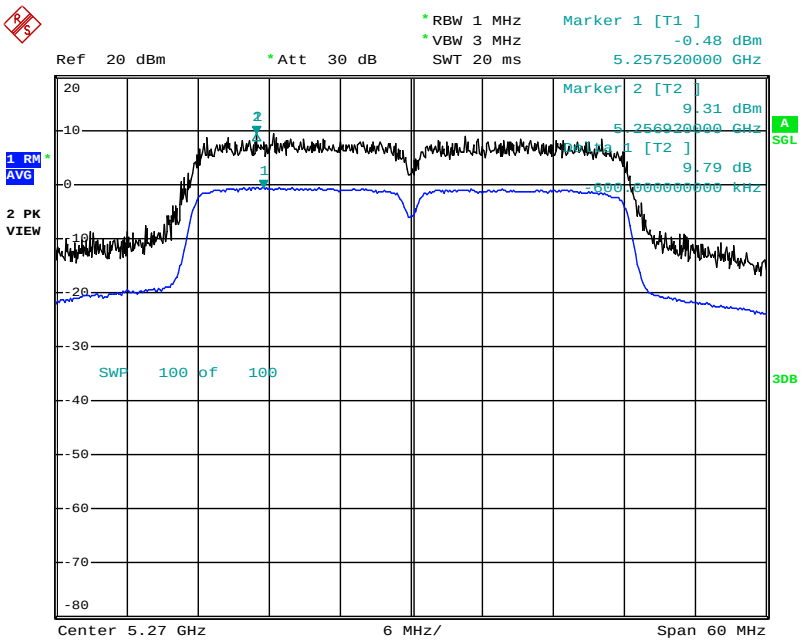
Date: 2.JUL.2013 18:55:49

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 64QAM (MCS5) / 5230 MHz



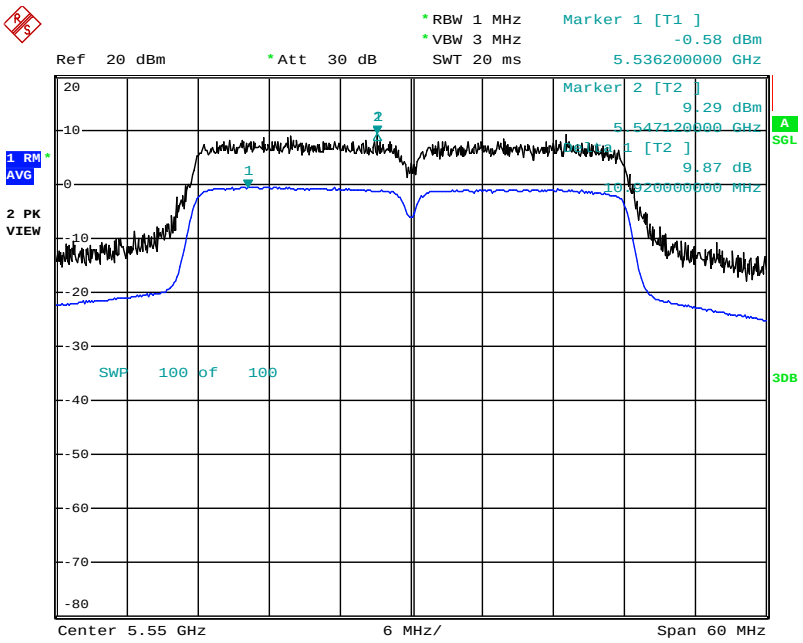
Date: 2.JUL.2013 19:02:30

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 64QAM (MCS5) / 5270 MHz



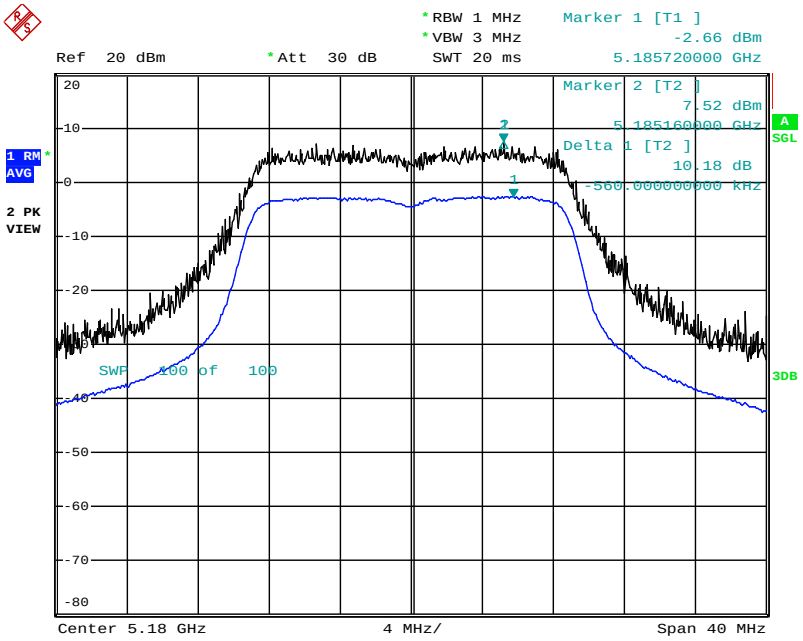
Date: 2.JUL.2013 18:59:09

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 (1TX) / 16QAM (MCS3) / 5550 MHz

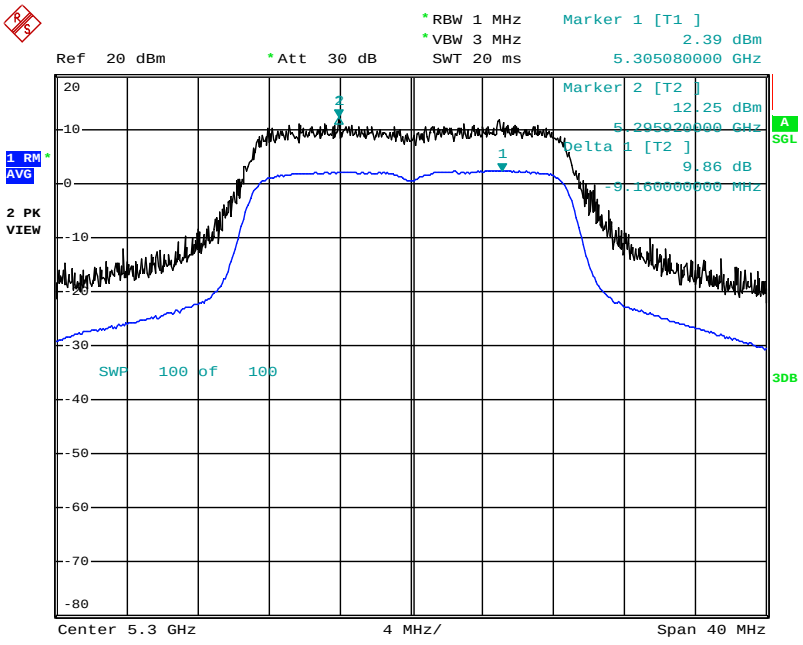


Date: 2.JUL.2013 18:57:34

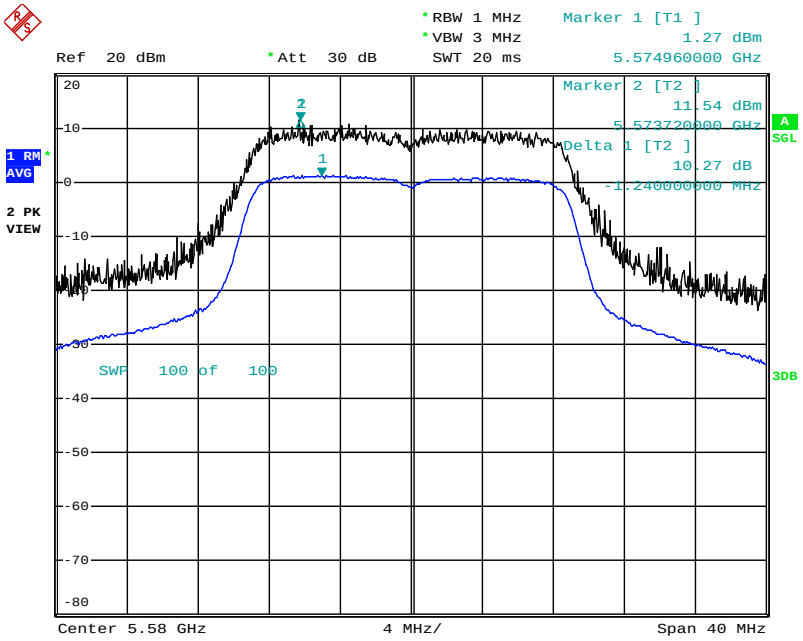
Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS5) / 5180 MHz



Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 16QAM (MCS3) / 5300 MHz

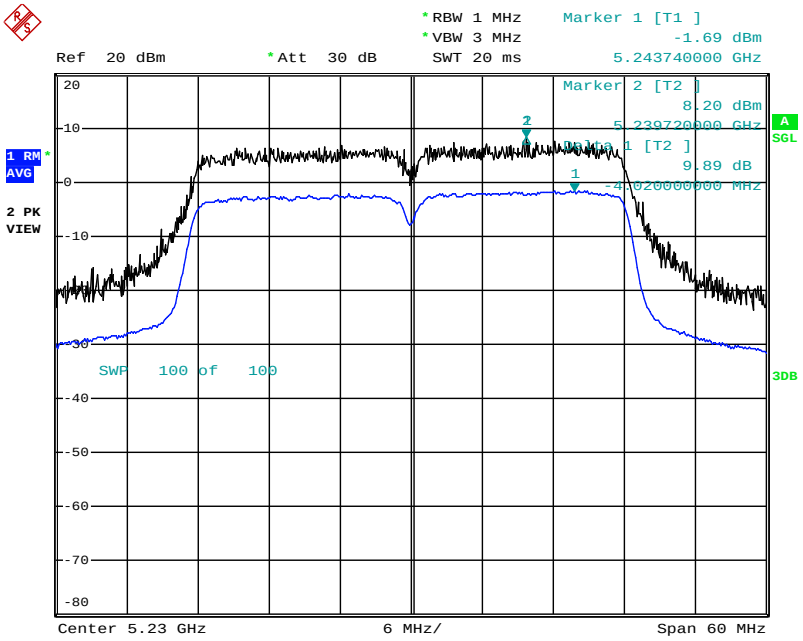


Peak Excursion Plot on Configuration IEEE 802.11n MCS0 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS5) / 5580 MHz



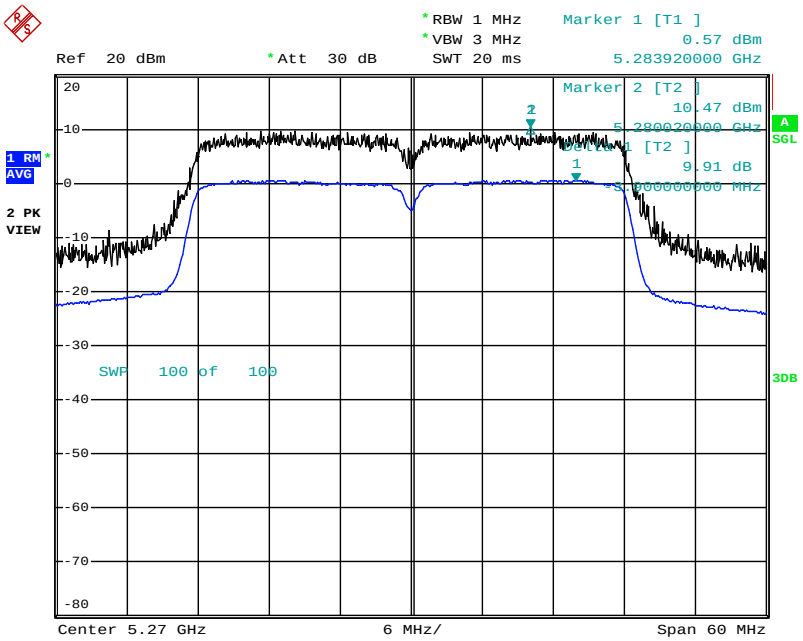
Date: 3.JUL.2013 17:22:58

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS5) / 5230 MHz



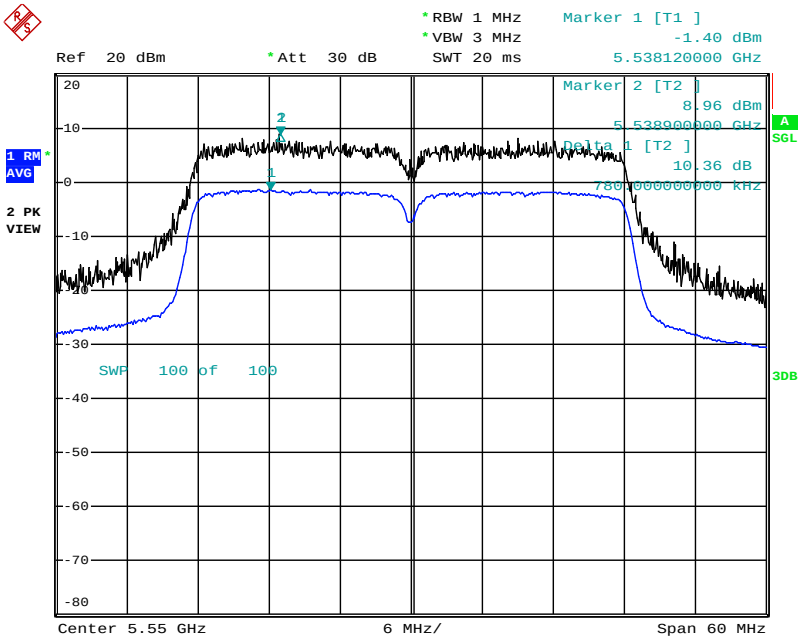
Date: 3.JUL.2013 17:25:10

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 16QAM (MCS3) / 5270 MHz



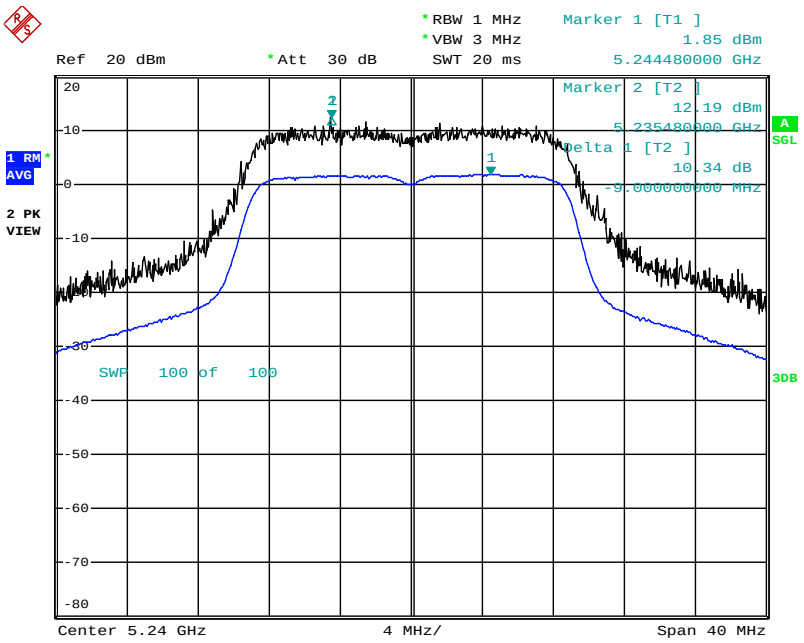
Date: 3.JUL.2013 17:26:31

Peak Excursion Plot on Configuration IEEE 802.11n MCS0 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS5) / 5550 MHz



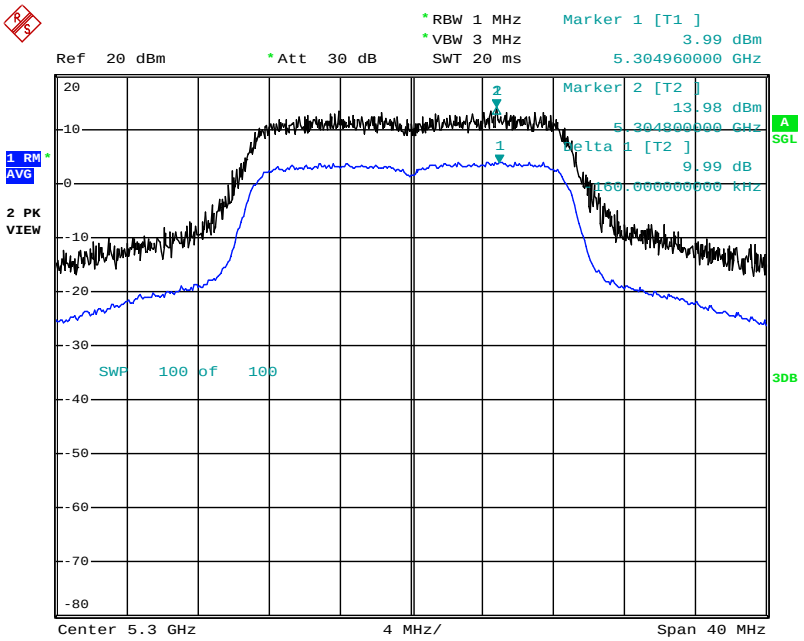
Date: 3.JUL.2013 17:29:41

Peak Excursion Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / BSPK (MCS8) / 5240 MHz



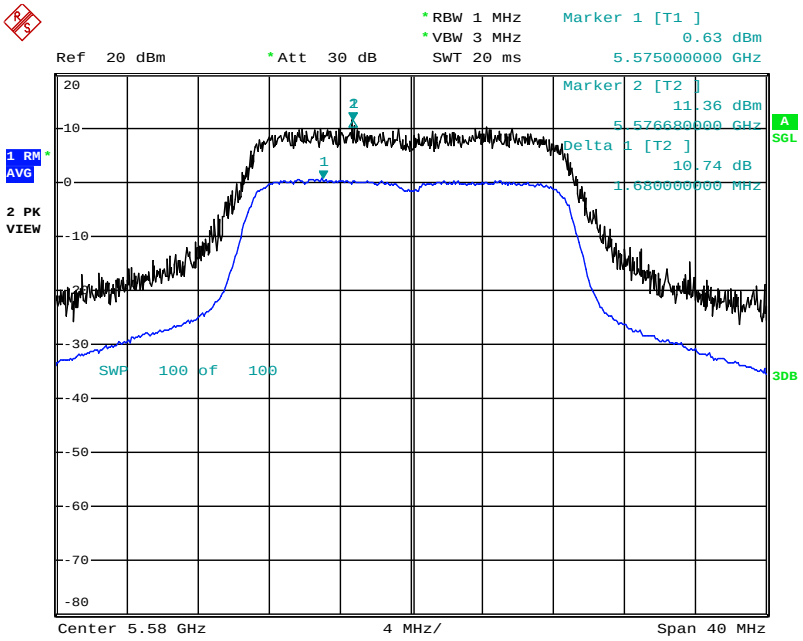
Date: 3.JUL.2013 17:30:49

Peak Excursion Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS13) / 5300 MHz



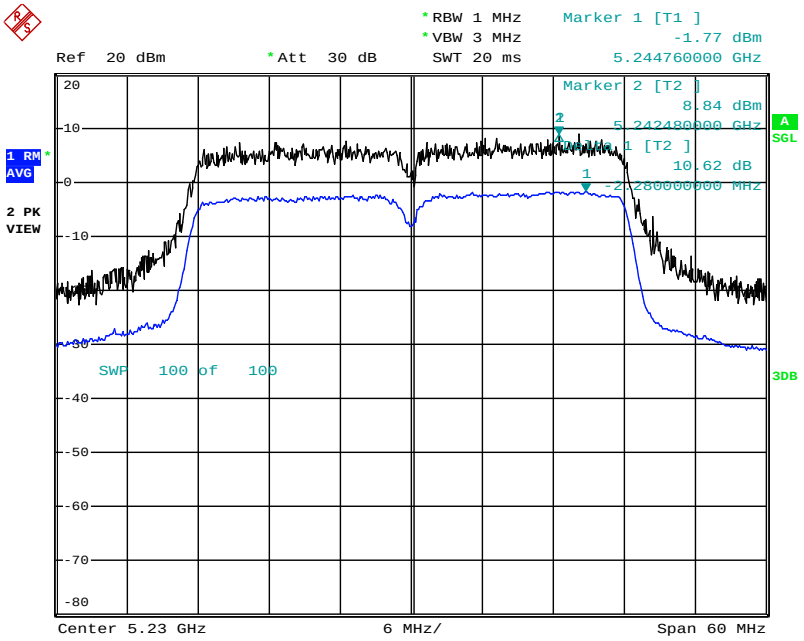
Date: 3.JUL.2013 17:33:00

Peak Excursion Plot on Configuration IEEE 802.11n MCS8 20MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS13) / 5580 MHz



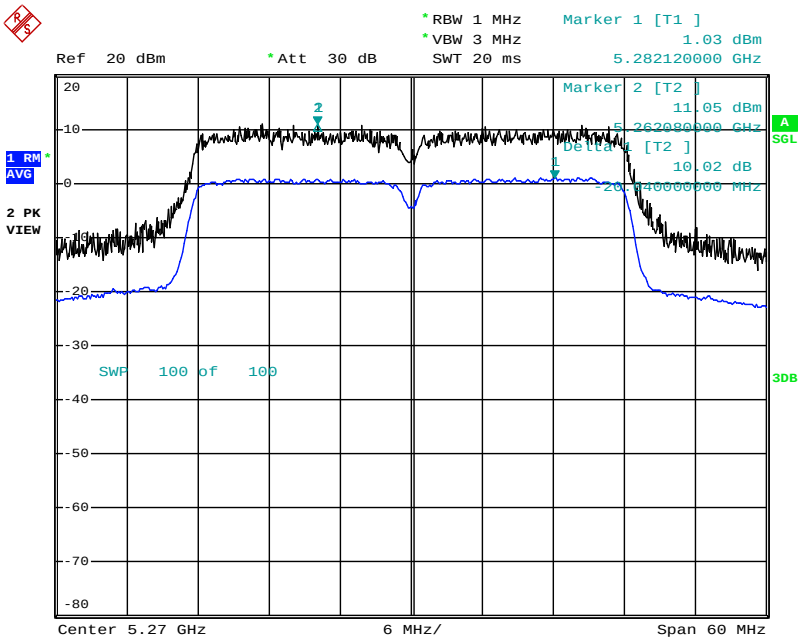
Date: 3.JUL.2013 17:36:23

Peak Excursion Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS13) / 5230 MHz



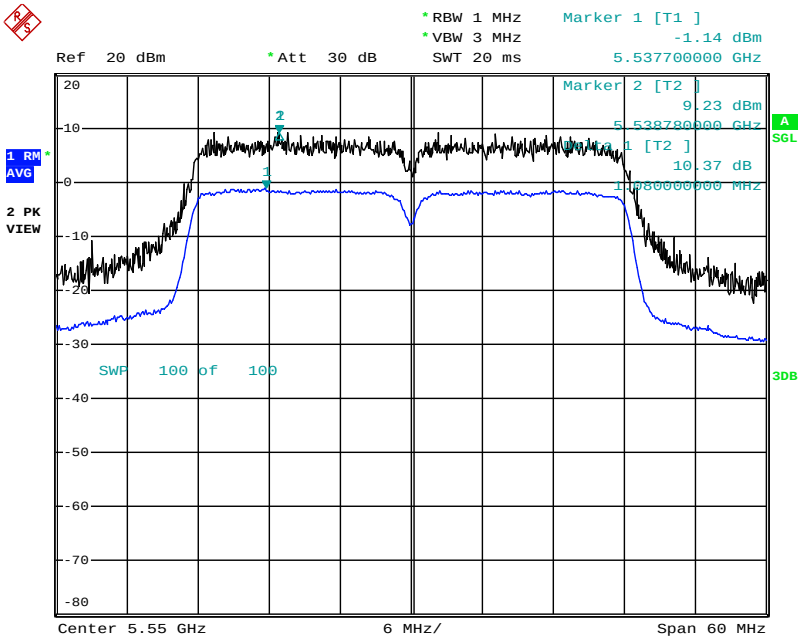
Date: 3.JUL.2013 17:38:45

Peak Excursion Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 16QAM (MCS11) / 5270 MHz



Date: 3.JUL.2013 17:40:01

Peak Excursion Plot on Configuration IEEE 802.11n MCS8 40MHz / Ant. 1 / Chain 0 + Chain 1 (2TX) / 64QAM (MCS13) / 5550 MHz



4.6. Radiated Emissions Measurement

4.6.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.6.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	40 GHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for peak

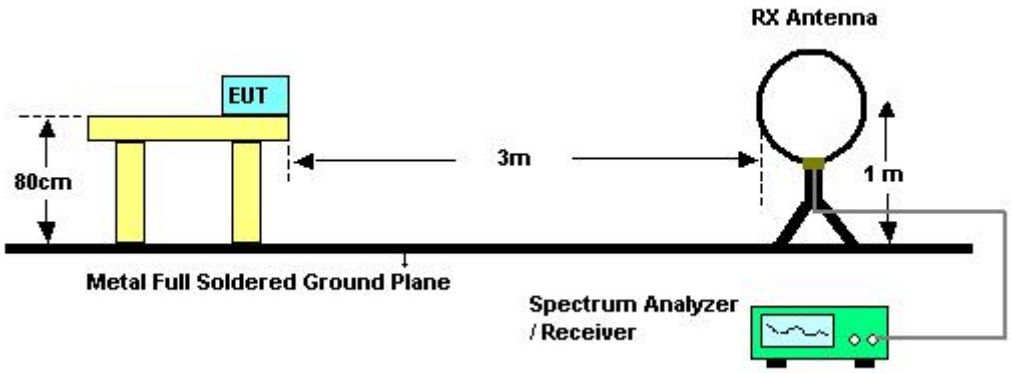
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RBW 120kHz for QP

4.6.3. Test Procedures

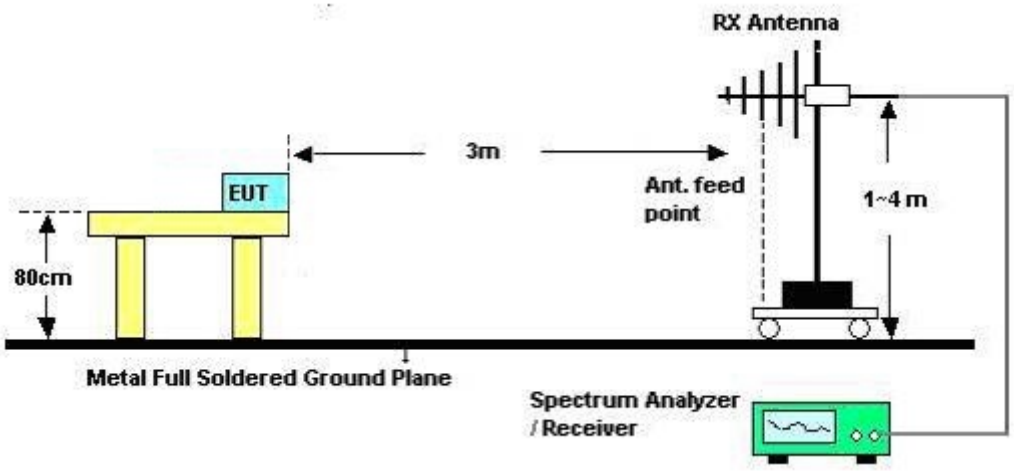
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

4.6.4. Test Setup Layout

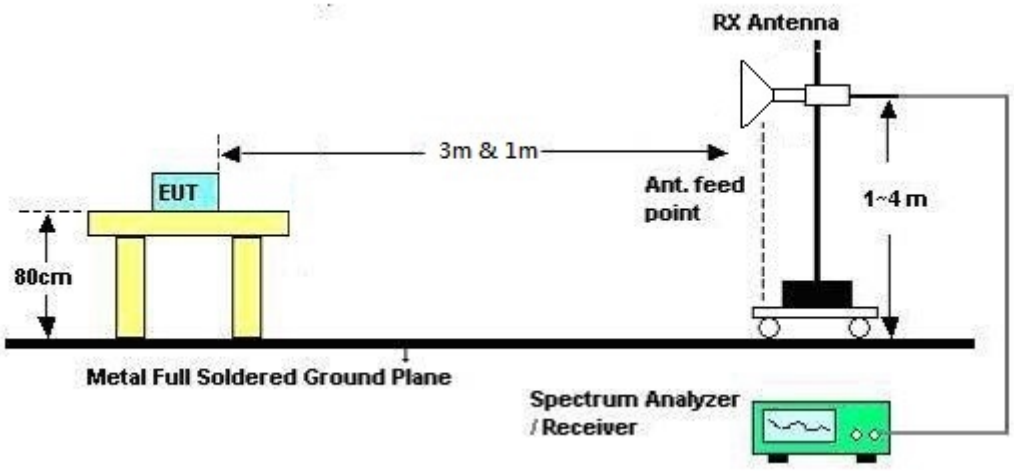
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.6.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	26°C	Humidity	55%
Test Engineer	Wen Chao	Configurations	Normal Link
Test Date	Jun. 21, 2013		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

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

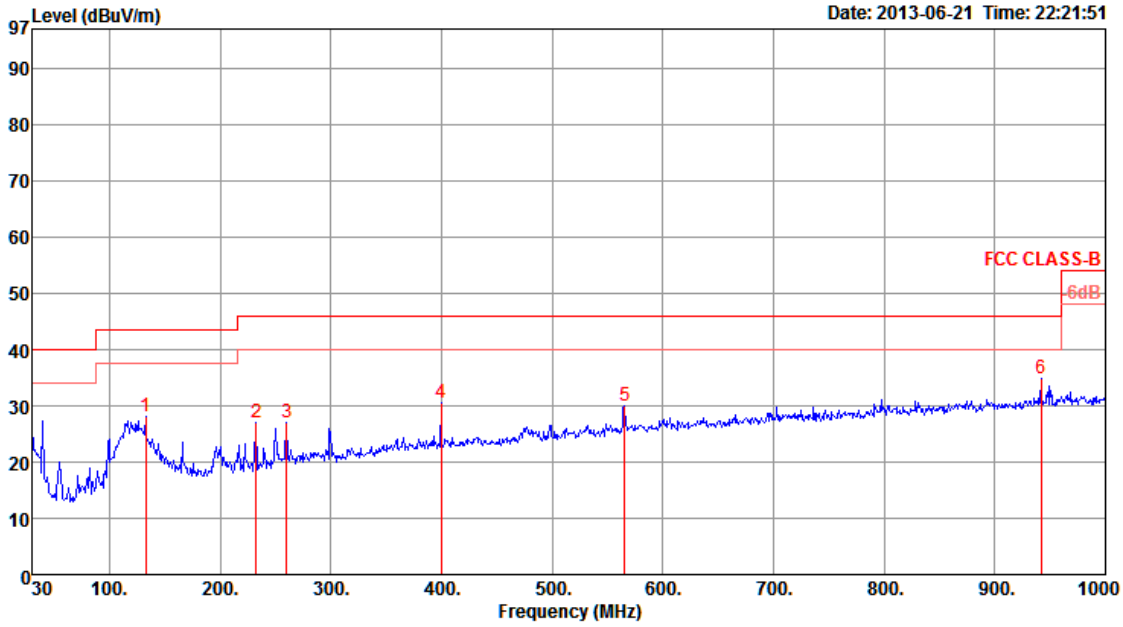
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

4.6.8. Results of Radiated Emissions (30MHz~1GHz)

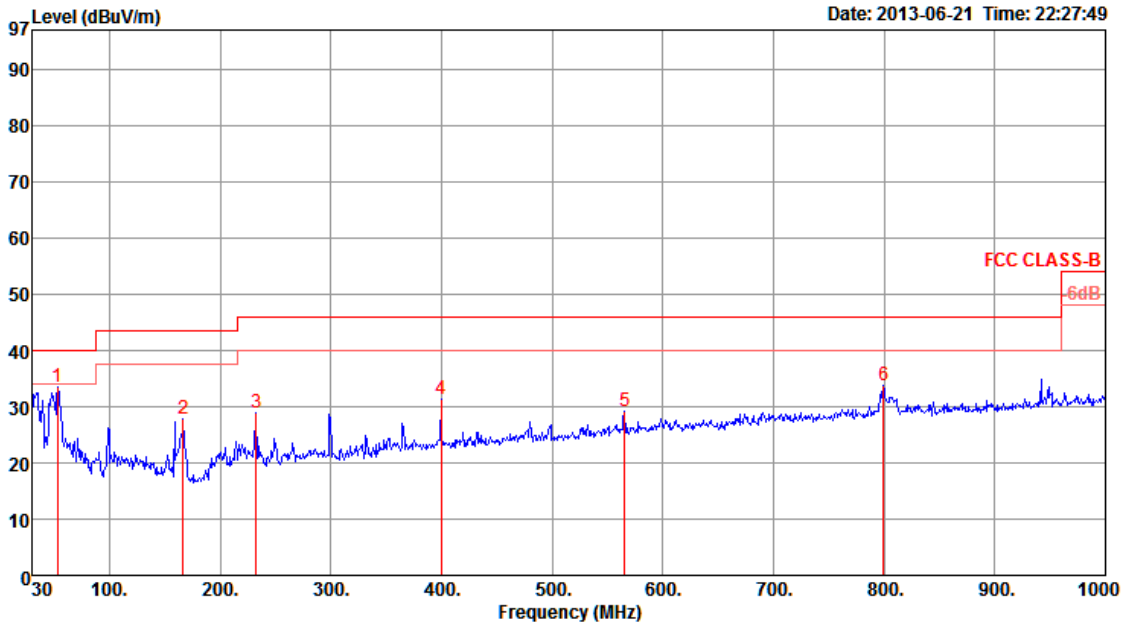
Temperature	26°C	Humidity	55%
Test Engineer	Wen Chao	Configurations	Normal Link

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	132.82	28.06	43.50	-15.44	41.40	1.68	27.61	12.59	Peak	0	400	HORIZONTAL
2	232.73	27.02	46.00	-18.98	40.20	2.29	27.01	11.54	Peak	0	400	HORIZONTAL
3	259.89	27.07	46.00	-18.93	37.96	2.44	26.93	13.60	Peak	0	400	HORIZONTAL
4	399.57	30.52	46.00	-15.48	38.49	2.99	27.46	16.50	Peak	0	400	HORIZONTAL
5	565.44	30.06	46.00	-15.94	35.30	3.60	27.79	18.95	Peak	0	400	HORIZONTAL
6 p	941.80	34.73	46.00	-11.27	34.64	4.81	26.56	21.84	Peak	0	400	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1 p	53.28	33.43	40.00	-6.57	52.08	1.10	27.91	8.16	Peak	0	100	VERTICAL
2	166.77	27.82	43.50	-15.68	42.92	1.92	27.41	10.39	Peak	0	100	VERTICAL
3	232.73	28.86	46.00	-17.14	42.04	2.29	27.01	11.54	Peak	0	100	VERTICAL
4	399.57	31.47	46.00	-14.53	39.44	2.99	27.46	16.50	Peak	0	100	VERTICAL
5	565.44	29.10	46.00	-16.90	34.34	3.60	27.79	18.95	Peak	0	100	VERTICAL
6	799.21	33.72	46.00	-12.28	35.46	4.36	26.89	20.79	Peak	0	100	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.6.9. Results for Radiated Emissions (1GHz~40GHz)

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 36 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10357.56	42.50	54.00	-11.50	29.53	8.54	39.75	35.32	Average	158	170	HORIZONTAL
2	10362.09	55.00	74.00	-19.00	42.03	8.54	39.75	35.32	Peak	158	170	HORIZONTAL
3	15540.46	45.53	54.00	-8.47	32.23	10.77	38.12	35.59	Average	100	288	HORIZONTAL
4	15541.15	58.58	74.00	-15.42	45.28	10.77	38.12	35.59	Peak	100	288	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10358.93	42.65	54.00	-11.35	29.68	8.54	39.75	35.32	Average	100	199	VERTICAL
2	10361.24	55.16	74.00	-18.84	42.19	8.54	39.75	35.32	Peak	100	199	VERTICAL
3	15540.30	45.73	54.00	-8.27	32.43	10.77	38.12	35.59	Average	100	221	VERTICAL
4	15541.42	58.65	74.00	-15.35	45.35	10.77	38.12	35.59	Peak	100	221	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 40 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10397.10	58.46	74.00	-15.54	45.38	8.55	39.81	35.28	Peak	156	176	HORIZONTAL
2	10400.04	45.78	54.00	-8.22	32.70	8.55	39.81	35.28	Average	156	176	HORIZONTAL
3	15599.75	45.65	54.00	-8.35	32.41	10.78	38.04	35.58	Average	100	288	HORIZONTAL
4	15602.15	59.09	74.00	-14.91	45.85	10.78	38.04	35.58	Peak	100	288	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10401.44	62.45	74.00	-11.55	49.37	8.55	39.81	35.28	Peak	100	170	VERTICAL
2	10401.70	48.19	54.00	-5.81	35.11	8.55	39.81	35.28	Average	100	170	VERTICAL
3	15599.90	60.32	74.00	-13.68	47.08	10.78	38.04	35.58	Peak	112	201	VERTICAL
4	15601.06	47.06	54.00	-6.94	33.82	10.78	38.04	35.58	Average	112	201	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 48 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10481.86	60.06	74.00	-13.94	46.75	8.56	39.97	35.22	Peak	164	158	HORIZONTAL
2	10483.06	45.87	54.00	-8.13	32.56	8.56	39.97	35.22	Average	164	158	HORIZONTAL
3	15715.96	57.05	74.00	-16.95	43.97	10.79	37.85	35.56	Peak	100	276	HORIZONTAL
4	15719.58	45.37	54.00	-8.63	32.29	10.79	37.85	35.56	Average	100	276	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10480.20	66.36	74.00	-7.64	53.05	8.56	39.97	35.22	Peak	100	197	VERTICAL
2	10480.48	50.98	54.00	-3.02	37.67	8.56	39.97	35.22	Average	100	197	VERTICAL
3	15716.82	48.12	54.00	-5.88	35.04	10.79	37.85	35.56	Average	126	177	VERTICAL
4	15719.14	62.98	74.00	-11.02	49.90	10.79	37.85	35.56	Peak	126	177	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10517.30	60.06	74.00	-13.94	46.71	8.57	39.98	35.20	Peak	161	170	HORIZONTAL
2	10518.06	44.77	54.00	-9.23	31.42	8.57	39.98	35.20	Average	161	170	HORIZONTAL
3	15777.10	45.18	54.00	-8.82	32.17	10.80	37.75	35.54	Average	102	272	HORIZONTAL
4	15777.26	58.30	74.00	-15.70	45.29	10.80	37.75	35.54	Peak	100	272	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10518.08	65.75	74.00	-8.25	52.40	8.57	39.98	35.20	Peak	101	185	VERTICAL
2	10519.54	50.72	54.00	-3.28	37.37	8.57	39.98	35.20	Average	101	185	VERTICAL
3	15776.24	46.11	54.00	-7.89	33.08	10.80	37.77	35.54	Average	111	196	VERTICAL
4	15779.14	60.47	74.00	-13.53	47.46	10.80	37.75	35.54	Peak	111	196	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.66	46.10	54.00	-7.90	32.70	8.64	39.90	35.14	Average	162	167	HORIZONTAL
2	10602.26	60.75	74.00	-13.25	47.33	8.64	39.90	35.12	Peak	162	167	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.20	50.66	54.00	-3.34	37.26	8.64	39.90	35.14	Average	100	175	VERTICAL
2	10600.74	65.33	74.00	-8.67	51.93	8.64	39.90	35.14	Peak	100	175	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10638.84	57.09	74.00	-16.91	43.66	8.66	39.86	35.09	Peak	150	159	HORIZONTAL
2	10640.06	43.87	54.00	-10.13	30.44	8.66	39.86	35.09	Average	150	159	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10640.62	46.34	54.00	-7.66	32.91	8.66	39.86	35.09	Average	100	174	VERTICAL
2	10642.00	59.59	74.00	-14.41	46.16	8.66	39.86	35.09	Peak	100	174	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10996.92	56.16	74.00	-17.84	42.53	8.93	39.50	34.80	Peak	154	145	HORIZONTAL
2	10998.84	43.12	54.00	-10.88	29.49	8.93	39.50	34.80	Average	154	145	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10999.14	61.60	74.00	-12.40	47.97	8.93	39.50	34.80	Peak	100	193	VERTICAL
2	10999.66	47.78	54.00	-6.22	34.15	8.93	39.50	34.80	Average	8955	193	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11158.36	59.36	74.00	-14.64	45.71	9.04	39.50	34.89	Peak	147	130	HORIZONTAL
2	11159.02	45.11	54.00	-8.89	31.46	9.04	39.50	34.89	Average	147	130	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11158.36	65.51	74.00	-8.49	51.86	9.04	39.50	34.89	Peak	100	299	VERTICAL
2	11159.28	50.87	54.00	-3.13	37.22	9.04	39.50	34.89	Average	100	299	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.60	42.71	54.00	-11.29	29.06	9.19	39.50	35.04	Average	149	178	HORIZONTAL
2	11403.60	55.98	74.00	-18.02	42.33	9.19	39.50	35.04	Peak	149	178	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11396.94	56.49	74.00	-17.51	42.84	9.19	39.50	35.04	Peak	100	178	VERTICAL
2	11401.78	43.50	54.00	-10.50	29.85	9.19	39.50	35.04	Average	100	178	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 38 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10375.94	42.17	54.00	-11.83	29.14	8.55	39.78	35.30	Average	154	165	HORIZONTAL
2	10379.32	54.67	74.00	-19.33	41.64	8.55	39.78	35.30	Peak	154	165	HORIZONTAL
3	15568.69	58.43	74.00	-15.57	45.14	10.78	38.09	35.58	Peak	100	288	HORIZONTAL
4	15570.19	45.79	54.00	-8.21	32.50	10.78	38.09	35.58	Average	100	288	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10378.42	54.70	74.00	-19.30	41.67	8.55	39.78	35.30	Peak	100	194	VERTICAL
2	10384.26	42.37	54.00	-11.63	29.34	8.55	39.78	35.30	Average	100	194	VERTICAL
3	15571.50	58.21	74.00	-15.79	44.92	10.78	38.09	35.58	Peak	105	196	VERTICAL
4	15571.66	45.89	54.00	-8.11	32.60	10.78	38.09	35.58	Average	105	196	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 46 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10459.86	55.92	74.00	-18.08	42.67	8.55	39.94	35.24	Peak	165	163	HORIZONTAL
2	10463.32	43.04	54.00	-10.96	29.78	8.56	39.94	35.24	Average	165	163	HORIZONTAL
3	15686.66	45.39	54.00	-8.61	32.25	10.79	37.91	35.56	Average	100	289	HORIZONTAL
4	15688.76	57.73	74.00	-16.27	44.59	10.79	37.91	35.56	Peak	100	289	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10459.58	44.44	54.00	-9.56	31.22	8.55	39.91	35.24	Average	8955	171	VERTICAL
2	10459.62	57.99	74.00	-16.01	44.77	8.55	39.91	35.24	Peak	100	171	VERTICAL
3	15690.22	58.01	74.00	-15.99	44.87	10.79	37.91	35.56	Peak	122	177	VERTICAL
4	15690.46	45.98	54.00	-8.02	32.84	10.79	37.91	35.56	Average	122	177	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10539.72	44.61	54.00	-9.39	31.23	8.59	39.97	35.18	Average	160	168	HORIZONTAL
2	10540.82	58.32	74.00	-15.68	44.94	8.59	39.97	35.18	Peak	160	168	HORIZONTAL
3	15810.18	44.72	54.00	-9.28	31.74	10.80	37.72	35.54	Average	100	282	HORIZONTAL
4	15810.48	56.97	74.00	-17.03	44.02	10.80	37.69	35.54	Peak	100	282	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10538.10	63.84	74.00	-10.16	50.46	8.59	39.97	35.18	Peak	100	198	VERTICAL
2	10538.62	47.54	54.00	-6.46	34.16	8.59	39.97	35.18	Average	100	198	VERTICAL
3	15805.36	46.16	54.00	-7.84	33.18	10.80	37.72	35.54	Average	113	200	VERTICAL
4	15810.54	59.03	74.00	-14.97	46.08	10.80	37.69	35.54	Peak	113	200	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10620.16	55.52	74.00	-18.48	42.11	8.65	39.88	35.12	Peak	150	173	HORIZONTAL
2	10621.66	42.92	54.00	-11.08	29.51	8.65	39.88	35.12	Average	150	173	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10621.40	42.99	54.00	-11.01	29.58	8.65	39.88	35.12	Average	100	201	VERTICAL
2	10623.68	55.22	74.00	-18.78	41.81	8.65	39.88	35.12	Peak	100	201	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11015.90	42.03	54.00	-11.97	28.40	8.94	39.50	34.81	Average	151	167	HORIZONTAL
2	11024.02	55.10	74.00	-18.90	41.46	8.95	39.50	34.81	Peak	151	167	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11017.36	54.93	74.00	-19.07	41.30	8.94	39.50	34.81	Peak	100	180	VERTICAL
2	11022.60	42.49	54.00	-11.51	28.85	8.95	39.50	34.81	Average	100	180	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11097.86	58.51	74.00	-15.49	44.88	8.99	39.50	34.86	Peak	158	168	HORIZONTAL
2	11098.62	44.85	54.00	-9.15	31.22	8.99	39.50	34.86	Average	158	168	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11099.96	66.31	74.00	-7.69	52.68	8.99	39.50	34.86	Peak	101	181	VERTICAL
2	11101.26	50.97	54.00	-3.03	37.34	8.99	39.50	34.86	Average	101	181	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11339.32	41.43	54.00	-12.57	27.78	9.14	39.50	34.99	Average	156	172	HORIZONTAL
2	11342.76	53.96	74.00	-20.04	40.33	9.14	39.50	35.01	Peak	156	172	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11338.74	59.37	74.00	-14.63	45.72	9.14	39.50	34.99	Peak	103	183	VERTICAL
2	11340.36	45.87	54.00	-8.13	32.22	9.14	39.50	34.99	Average	103	183	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10357.62	42.13	54.00	-11.87	29.16	8.54	39.75	35.32	Average	152	166	HORIZONTAL
2	10359.18	54.84	74.00	-19.16	41.87	8.54	39.75	35.32	Peak	152	166	HORIZONTAL
3	15544.50	57.99	74.00	-16.01	44.68	10.78	38.12	35.59	Peak	100	271	HORIZONTAL
4	15545.00	45.73	54.00	-8.27	32.42	10.78	38.12	35.59	Average	100	271	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10357.70	55.48	74.00	-18.52	42.51	8.54	39.75	35.32	Peak	100	188	VERTICAL
2	10358.34	42.67	54.00	-11.33	29.70	8.54	39.75	35.32	Average	100	188	VERTICAL
3	15535.10	45.85	54.00	-8.15	32.52	10.77	38.15	35.59	Average	112	194	VERTICAL
4	15538.92	59.01	74.00	-14.99	45.71	10.77	38.12	35.59	Peak	112	194	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 40 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10400.02	45.41	54.00	-8.59	32.33	8.55	39.81	35.28	Average	152	174	HORIZONTAL
2	10400.88	59.60	74.00	-14.40	46.52	8.55	39.81	35.28	Peak	152	174	HORIZONTAL
3	15595.68	58.17	74.00	-15.83	44.93	10.78	38.04	35.58	Peak	100	264	HORIZONTAL
4	15604.68	45.88	54.00	-8.12	32.64	10.78	38.04	35.58	Average	151	264	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10399.82	45.58	54.00	-8.42	32.50	8.55	39.81	35.28	Average	100	170	VERTICAL
2	10400.66	62.02	74.00	-11.98	48.94	8.55	39.81	35.28	Peak	100	170	VERTICAL
3	15597.92	62.58	74.00	-11.42	49.34	10.78	38.04	35.58	Peak	120	179	VERTICAL
4	15601.86	48.91	54.00	-5.09	35.67	10.78	38.04	35.58	Average	120	179	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 48 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10478.76	61.33	74.00	-12.67	48.02	8.56	39.97	35.22	Peak	158	174	HORIZONTAL
2	10479.74	47.28	54.00	-6.72	33.97	8.56	39.97	35.22	Average	158	174	HORIZONTAL
3	15716.32	45.34	54.00	-8.66	32.26	10.79	37.85	35.56	Average	100	300	HORIZONTAL
4	15717.44	57.28	74.00	-16.72	44.20	10.79	37.85	35.56	Peak	100	300	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10477.84	65.96	74.00	-8.04	52.65	8.56	39.97	35.22	Peak	100	167	VERTICAL
2	10480.30	50.94	54.00	-3.06	37.63	8.56	39.97	35.22	Average	100	167	VERTICAL
3	15716.64	47.22	54.00	-6.78	34.14	10.79	37.85	35.56	Average	122	197	VERTICAL
4	15721.98	59.59	74.00	-14.41	46.51	10.79	37.85	35.56	Peak	122	197	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10518.46	58.24	74.00	-15.76	44.89	8.57	39.98	35.20	Peak	157	155	HORIZONTAL
2	10521.14	44.37	54.00	-9.63	31.02	8.57	39.98	35.20	Average	157	155	HORIZONTAL
3	15775.90	45.27	54.00	-8.73	32.24	10.80	37.77	35.54	Average	107	303	HORIZONTAL
4	15778.90	57.76	74.00	-16.24	44.75	10.80	37.75	35.54	Peak	100	303	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10520.28	50.92	54.00	-3.08	37.57	8.57	39.98	35.20	Average	130	184	VERTICAL
2	10520.72	68.29	74.00	-5.71	54.94	8.57	39.98	35.20	Peak	130	184	VERTICAL
3	15780.16	58.97	74.00	-15.03	45.96	10.80	37.75	35.54	Peak	108	207	VERTICAL
4	15781.28	46.03	54.00	-7.97	33.02	10.80	37.75	35.54	Average	108	207	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 60 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.64	47.87	54.00	-6.13	34.47	8.64	39.90	35.14	Average	160	164	HORIZONTAL
2	10600.88	61.16	74.00	-12.84	47.76	8.64	39.90	35.14	Peak	160	164	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.14	50.51	54.00	-3.49	37.11	8.64	39.90	35.14	Average	100	175	VERTICAL
2	10600.54	66.44	74.00	-7.56	53.04	8.64	39.90	35.14	Peak	100	175	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 64 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10639.16	44.96	54.00	-9.04	31.53	8.66	39.86	35.09	Average	152	164	HORIZONTAL
2	10639.62	57.94	74.00	-16.06	44.51	8.66	39.86	35.09	Peak	152	164	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10640.94	61.91	74.00	-12.09	48.48	8.66	39.86	35.09	Peak	100	174	VERTICAL
2	10641.04	47.38	54.00	-6.62	33.95	8.66	39.86	35.09	Average	100	174	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10998.62	44.51	54.00	-9.49	30.88	8.93	39.50	34.80	Average	162	170	HORIZONTAL
2	10998.90	57.08	74.00	-16.92	43.45	8.93	39.50	34.80	Peak	162	170	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10999.12	62.59	74.00	-11.41	48.96	8.93	39.50	34.80	Peak	100	166	VERTICAL
2	10999.60	48.79	54.00	-5.21	35.16	8.93	39.50	34.80	Average	100	166	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 116 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11157.06	60.26	74.00	-13.74	46.62	9.03	39.50	34.89	Peak	158	166	HORIZONTAL
2	11159.52	46.99	54.00	-7.01	33.34	9.04	39.50	34.89	Average	158	166	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11158.66	67.05	74.00	-6.95	53.40	9.04	39.50	34.89	Peak	100	308	VERTICAL
2	11159.28	50.94	54.00	-3.06	37.29	9.04	39.50	34.89	Average	100	308	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 140 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11396.70	43.03	54.00	-10.97	29.38	9.19	39.50	35.04	Average	150	166	HORIZONTAL
2	11398.12	55.29	74.00	-18.71	41.64	9.19	39.50	35.04	Peak	150	166	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.94	57.72	74.00	-16.28	44.07	9.19	39.50	35.04	Peak	100	214	VERTICAL
2	11400.04	44.48	54.00	-9.52	30.83	9.19	39.50	35.04	Average	101	214	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 36 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10357.40	51.50	74.00	-22.50	43.78	4.97	38.37	35.62	Peak	100	199	HORIZONTAL
2	10358.10	39.67	54.00	-14.33	31.95	4.97	38.37	35.62	Average	100	199	HORIZONTAL
3	15529.90	52.98	74.00	-21.02	44.47	6.13	37.67	35.29	Peak	100	239	HORIZONTAL
4	15548.60	39.90	54.00	-14.10	31.43	6.13	37.65	35.31	Average	100	239	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10360.70	60.62	74.00	-13.38	52.90	4.97	38.37	35.62	Peak	100	192	VERTICAL
2	10361.40	45.56	54.00	-8.44	37.84	4.97	38.37	35.62	Average	100	192	VERTICAL
3	15532.00	40.23	54.00	-13.77	31.66	6.13	37.73	35.29	Average	100	335	VERTICAL
4	15557.30	52.41	74.00	-21.59	43.94	6.13	37.65	35.31	Peak	100	335	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 40 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10398.10	44.98	54.00	-9.02	37.20	4.98	38.38	35.58	Average	182	185	HORIZONTAL
2	10398.60	58.38	74.00	-15.62	50.60	4.98	38.38	35.58	Peak	182	185	HORIZONTAL
3	15582.20	52.26	74.00	-21.74	43.85	6.13	37.61	35.33	Peak	100	290	HORIZONTAL
4	15600.60	40.12	54.00	-13.88	31.73	6.13	37.60	35.34	Average	100	290	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10400.50	49.39	54.00	-4.61	41.61	4.98	38.38	35.58	Average	100	173	VERTICAL
2	10401.90	63.81	74.00	-10.19	56.03	4.98	38.38	35.58	Peak	100	173	VERTICAL
3	15601.80	41.31	54.00	-12.69	32.92	6.13	37.60	35.34	Average	100	227	VERTICAL
4	15621.40	52.20	74.00	-21.80	43.84	6.13	37.58	35.35	Peak	100	227	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 48 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10480.70	42.24	54.00	-11.76	34.37	5.00	38.39	35.52	Average	162	273	HORIZONTAL
2	10482.80	53.77	74.00	-20.23	45.90	5.00	38.39	35.52	Peak	162	273	HORIZONTAL
3	15713.00	52.27	74.00	-21.73	44.03	6.14	37.48	35.38	Peak	100	66	HORIZONTAL
4	15716.00	39.51	54.00	-14.49	31.27	6.14	37.48	35.38	Average	100	66	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10481.30	50.37	54.00	-3.63	42.49	5.00	38.40	35.52	Average	101	349	VERTICAL
2	10482.20	64.68	74.00	-9.32	56.80	5.00	38.40	35.52	Peak	101	349	VERTICAL
3	15722.20	40.81	54.00	-13.19	32.58	6.14	37.48	35.39	Average	100	177	VERTICAL
4	15724.60	52.27	74.00	-21.73	44.04	6.14	37.48	35.39	Peak	100	177	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 52 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10520.00	41.21	54.00	-12.79	33.30	5.01	38.40	35.50	Average	100	171	HORIZONTAL
2	10521.90	53.14	74.00	-20.86	45.21	5.01	38.40	35.48	Peak	100	171	HORIZONTAL
3	15774.20	39.45	54.00	-14.55	31.31	6.14	37.42	35.42	Average	100	265	HORIZONTAL
4	15797.10	51.65	74.00	-22.35	43.55	6.14	37.39	35.43	Peak	100	265	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10518.50	64.81	74.00	-9.19	56.91	5.01	38.39	35.50	Peak	100	190	VERTICAL
2	10521.30	50.49	54.00	-3.51	42.59	5.01	38.39	35.50	Average	100	190	VERTICAL
3	15774.40	39.81	54.00	-14.19	31.67	6.14	37.42	35.42	Average	100	172	VERTICAL
4	15775.60	51.70	74.00	-22.30	43.56	6.14	37.42	35.42	Peak	100	172	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 60 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10599.90	43.17	54.00	-10.83	35.20	5.01	38.38	35.42	Average	100	162	HORIZONTAL
2	10600.90	56.13	74.00	-17.87	48.16	5.01	38.38	35.42	Peak	100	162	HORIZONTAL
3	15910.80	39.93	54.00	-14.07	31.93	6.15	37.29	35.44	Average	100	88	HORIZONTAL
4	15916.20	52.78	74.00	-21.22	44.80	6.15	37.27	35.44	Peak	100	88	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.00	50.47	54.00	-3.53	42.50	5.01	38.38	35.42	Average	101	206	VERTICAL
2	10600.30	65.69	74.00	-8.31	57.72	5.01	38.38	35.42	Peak	101	206	VERTICAL
3	15910.60	40.34	54.00	-13.66	32.34	6.15	37.29	35.44	Average	100	175	VERTICAL
4	15910.60	53.07	74.00	-20.93	45.07	6.15	37.29	35.44	Peak	100	175	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 64 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10640.70	57.51	74.00	-16.49	49.52	5.01	38.37	35.39	Peak	166	163	HORIZONTAL
2	10641.40	44.79	54.00	-9.21	36.80	5.01	38.37	35.39	Average	166	163	HORIZONTAL
3	15951.00	52.09	74.00	-21.91	44.15	6.15	37.23	35.44	Peak	100	176	HORIZONTAL
4	15976.50	39.94	54.00	-14.06	32.00	6.15	37.22	35.43	Average	100	176	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10637.60	61.83	74.00	-12.17	53.84	5.01	38.37	35.39	Peak	100	212	VERTICAL
2	10638.70	47.92	54.00	-6.08	39.93	5.01	38.37	35.39	Average	100	212	VERTICAL
3	15967.60	39.87	54.00	-14.13	31.94	6.15	37.22	35.44	Average	100	314	VERTICAL
4	15982.80	52.92	74.00	-21.08	44.97	6.15	37.23	35.43	Peak	100	314	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 100 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10997.40	39.95	54.00	-14.05	31.72	5.01	38.32	35.10	Average	100	187	HORIZONTAL
2	10999.00	52.80	74.00	-21.20	44.57	5.01	38.32	35.10	Peak	100	187	HORIZONTAL
3	16493.60	51.90	74.00	-22.10	42.15	6.25	38.50	35.00	Peak	100	68	HORIZONTAL
4	16524.10	39.13	54.00	-14.87	29.27	6.25	38.58	34.97	Average	100	68	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10998.80	61.69	74.00	-12.31	53.48	5.01	38.30	35.10	Peak	100	198	VERTICAL
2	11000.80	46.44	54.00	-7.56	38.23	5.01	38.30	35.10	Average	100	198	VERTICAL
3	16496.00	38.01	54.00	-15.99	28.23	6.25	38.53	35.00	Average	100	191	VERTICAL
4	16508.40	50.29	74.00	-23.71	40.48	6.25	38.53	34.97	Peak	100	191	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 116 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11157.00	44.91	54.00	-9.09	36.58	5.04	38.45	35.16	Average	159	257	HORIZONTAL
2	11158.20	56.80	74.00	-17.20	48.48	5.04	38.45	35.17	Peak	159	257	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11160.20	49.57	54.00	-4.43	41.23	5.04	38.47	35.17	Average	105	2	VERTICAL
2	11161.00	63.48	74.00	-10.52	55.14	5.04	38.47	35.17	Peak	105	2	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 140 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11395.50	36.61	54.00	-17.39	28.08	5.10	38.68	35.25	Average	100	220	HORIZONTAL
2	11415.50	48.91	74.00	-25.09	40.35	5.10	38.72	35.26	Peak	100	220	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11394.10	55.72	74.00	-18.28	47.19	5.10	38.68	35.25	Peak	100	182	VERTICAL
2	11396.30	42.78	54.00	-11.22	34.25	5.10	38.68	35.25	Average	100	182	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 38 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10378.20	50.30	74.00	-23.70	42.54	4.98	38.38	35.60	Peak	100	206	HORIZONTAL
2	10385.90	36.68	54.00	-17.32	28.92	4.98	38.38	35.60	Average	100	206	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10380.50	51.80	74.00	-22.20	44.04	4.98	38.38	35.60	Peak	100	354	VERTICAL
2	10381.30	38.90	54.00	-15.10	31.14	4.98	38.38	35.60	Average	100	354	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 46 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10457.30	53.10	74.00	-20.90	45.25	5.00	38.39	35.54	Peak	165	188	HORIZONTAL
2	10460.20	41.18	54.00	-12.82	33.33	5.00	38.39	35.54	Average	165	188	HORIZONTAL
3	15711.60	39.23	54.00	-14.77	30.99	6.14	37.48	35.38	Average	100	227	HORIZONTAL
4	15713.40	51.28	74.00	-22.72	43.04	6.14	37.48	35.38	Peak	100	227	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10460.40	44.90	54.00	-9.10	37.05	5.00	38.39	35.54	Average	101	198	VERTICAL
2	10463.00	58.35	74.00	-15.65	50.50	5.00	38.39	35.54	Peak	101	198	VERTICAL
3	15690.20	51.56	74.00	-22.44	43.28	6.14	37.51	35.37	Peak	100	306	VERTICAL
4	15696.00	39.64	54.00	-14.36	31.39	6.14	37.49	35.38	Average	100	306	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 54 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10541.40	44.43	54.00	-9.57	36.51	5.01	38.39	35.48	Average	155	180	HORIZONTAL
2	10542.00	57.94	74.00	-16.06	50.02	5.01	38.39	35.48	Peak	155	180	HORIZONTAL
3	15852.20	39.00	54.00	-15.00	30.97	6.14	37.34	35.45	Average	100	324	HORIZONTAL
4	15854.00	51.18	74.00	-22.82	43.15	6.14	37.34	35.45	Peak	100	324	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10537.60	64.48	74.00	-9.52	56.56	5.01	38.39	35.48	Peak	106	351	VERTICAL
2	10538.60	49.89	54.00	-4.11	41.97	5.01	38.39	35.48	Average	106	351	VERTICAL
3	15761.60	39.04	54.00	-14.96	30.89	6.14	37.42	35.41	Average	100	246	VERTICAL
4	15762.20	51.50	74.00	-22.50	43.35	6.14	37.42	35.41	Peak	100	246	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 62 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10574.20	36.94	54.00	-17.06	28.98	5.01	38.39	35.44	Average	100	49	HORIZONTAL
2	10576.40	48.14	74.00	-25.86	40.18	5.01	38.39	35.44	Peak	100	49	HORIZONTAL
3	15977.40	50.28	74.00	-23.72	42.34	6.15	37.22	35.43	Peak	100	143	HORIZONTAL
4	15978.60	40.06	54.00	-13.94	32.12	6.15	37.22	35.43	Average	100	143	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10618.80	52.75	74.00	-21.25	44.78	5.01	38.38	35.42	Peak	100	213	VERTICAL
2	10619.80	40.09	54.00	-13.91	32.12	5.01	38.38	35.42	Average	100	213	VERTICAL
3	15964.80	39.98	54.00	-14.02	32.05	6.15	37.22	35.44	Average	100	281	VERTICAL
4	15966.80	52.28	74.00	-21.72	44.35	6.15	37.22	35.44	Peak	100	281	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 102 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11062.00	36.68	54.00	-17.32	28.41	5.03	38.37	35.13	Average	100	208	HORIZONTAL
2	11062.60	46.55	74.00	-27.45	38.28	5.03	38.37	35.13	Peak	100	208	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11019.60	37.61	54.00	-16.39	29.38	5.02	38.32	35.11	Average	100	63	VERTICAL
2	11039.80	48.95	74.00	-25.05	40.70	5.02	38.35	35.12	Peak	100	63	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 110 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11099.20	38.40	54.00	-15.60	30.11	5.03	38.40	35.14	Average	100	314	HORIZONTAL
2	11117.20	49.19	74.00	-24.81	40.88	5.04	38.42	35.15	Peak	100	314	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11099.60	62.19	74.00	-11.81	53.90	5.03	38.40	35.14	Peak	100	185	VERTICAL
2	11101.60	47.51	54.00	-6.49	39.22	5.03	38.40	35.14	Average	100	185	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 134 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11332.80	38.77	54.00	-15.23	30.29	5.08	38.63	35.23	Average	100	57	HORIZONTAL
2	11336.20	50.29	74.00	-23.71	41.81	5.08	38.63	35.23	Peak	100	57	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11335.60	59.19	74.00	-14.81	50.71	5.08	38.63	35.23	Peak	100	186	VERTICAL
2	11337.00	45.06	54.00	-8.94	36.59	5.08	38.63	35.24	Average	100	186	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		10360.40	52.21	74.00	-21.79	42.57	6.53	35.31	38.42	Peak	57	100	HORIZONTAL
2		10363.60	40.12	54.00	-13.88	30.48	6.53	35.31	38.42	Average	57	100	HORIZONTAL
3	a	15542.04	41.14	54.00	-12.86	29.59	7.85	34.79	38.49	Average	313	100	HORIZONTAL
4	p	15542.80	54.22	74.00	-19.78	42.67	7.85	34.79	38.49	Peak	313	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	10360.60	48.17	54.00	-5.83	38.53	6.53	35.31	38.42	Average	189	101	VERTICAL
2	p	10362.00	61.88	74.00	-12.12	52.24	6.53	35.31	38.42	Peak	189	101	VERTICAL
3		15547.40	41.54	54.00	-12.46	29.98	7.86	34.79	38.49	Average	251	100	VERTICAL
4		15559.40	54.49	74.00	-19.51	42.95	7.86	34.81	38.49	Peak	251	100	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 40 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	10399.40	46.15	54.00	-7.85	36.41	6.56	35.26	38.44	Average	169	162	HORIZONTAL
2	p	10399.80	60.62	74.00	-13.38	50.88	6.56	35.26	38.44	Peak	169	162	HORIZONTAL
3		15591.80	41.60	54.00	-12.40	30.08	7.87	34.83	38.48	Average	294	100	HORIZONTAL
4		15607.80	55.00	74.00	-19.00	43.50	7.88	34.86	38.48	Peak	294	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	10400.30	50.03	54.00	-3.97	40.29	6.56	35.26	38.44	Average	188	103	VERTICAL
2	p	10400.50	64.53	74.00	-9.47	54.79	6.56	35.26	38.44	Peak	188	103	VERTICAL
3		15596.40	41.86	54.00	-12.14	30.33	7.88	34.83	38.48	Average	169	100	VERTICAL
4		15608.90	54.18	74.00	-19.82	42.68	7.88	34.86	38.48	Peak	169	100	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 48 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	10479.80	60.22	74.00	-13.78	50.30	6.63	35.20	38.49	Peak	168	154	HORIZONTAL
2	a	10480.20	46.62	54.00	-7.38	36.70	6.63	35.20	38.49	Average	168	154	HORIZONTAL
3		15714.70	53.78	74.00	-20.22	42.34	7.92	34.94	38.46	Peak	220	100	HORIZONTAL
4		15739.10	42.06	54.00	-11.94	30.65	7.92	34.96	38.45	Average	220	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	10480.40	63.20	74.00	-10.80	53.28	6.63	35.20	38.49	Peak	172	100	VERTICAL
2	a	10480.80	50.14	54.00	-3.86	40.22	6.63	35.20	38.49	Average	172	100	VERTICAL
3		15718.32	55.04	74.00	-18.96	43.60	7.92	34.94	38.46	Peak	358	100	VERTICAL
4		15722.54	43.25	54.00	-10.75	31.81	7.92	34.94	38.46	Average	358	100	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	10520.30	45.39	54.00	-8.61	35.44	6.63	35.18	38.50	Average	168	155	HORIZONTAL
2	p	10520.70	60.38	74.00	-13.62	50.43	6.63	35.18	38.50	Peak	168	155	HORIZONTAL
3		15797.00	43.10	54.00	-10.90	31.73	7.94	35.01	38.44	Average	254	100	HORIZONTAL
4		15799.80	55.65	74.00	-18.35	44.27	7.95	35.01	38.44	Peak	254	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	10520.30	65.99	74.00	-8.01	56.04	6.63	35.18	38.50	Peak	173	106	VERTICAL
2	a	10520.60	50.67	54.00	-3.33	40.72	6.63	35.18	38.50	Average	173	106	VERTICAL
3		15781.00	43.30	54.00	-10.70	31.94	7.93	35.01	38.44	Average	277	100	VERTICAL
4		15786.60	55.74	74.00	-18.26	44.37	7.94	35.01	38.44	Peak	277	100	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 60 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	10600.20	47.03	54.00	-6.97	37.07	6.60	35.12	38.48	Average	166	154	HORIZONTAL
2	p	10600.80	60.83	74.00	-13.17	50.85	6.60	35.10	38.48	Peak	166	154	HORIZONTAL
3		15894.90	42.98	54.00	-11.02	31.68	7.97	35.09	38.42	Average	45	100	HORIZONTAL
4		15907.40	55.91	74.00	-18.09	44.63	7.98	35.12	38.42	Peak	45	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	10600.20	66.46	74.00	-7.54	56.50	6.60	35.12	38.48	Peak	188	100	VERTICAL
2	a	10600.40	50.69	54.00	-3.31	40.73	6.60	35.12	38.48	Average	188	100	VERTICAL
3		15884.30	56.03	74.00	-17.97	44.73	7.97	35.09	38.42	Peak	128	100	VERTICAL
4		15896.60	43.16	54.00	-10.84	31.86	7.97	35.09	38.42	Average	128	100	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 64 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	10634.90	58.75	74.00	-15.25	48.77	6.59	35.08	38.47	Peak	167	152	HORIZONTAL
2	a	10640.20	45.12	54.00	-8.88	35.14	6.59	35.08	38.47	Average	167	152	HORIZONTAL
3		15946.60	42.34	54.00	-11.66	31.08	7.99	35.14	38.41	Average	336	100	HORIZONTAL
4		15969.20	55.10	74.00	-18.90	43.86	8.00	35.16	38.40	Peak	336	100	HORIZONTAL

Vertical

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	10640.00	48.95	54.00	-5.05	38.97	6.59	35.08	38.47	Average	190	100	VERTICAL
2	p	10640.40	64.01	74.00	-9.99	54.03	6.59	35.08	38.47	Peak	190	100	VERTICAL
3		15954.20	55.32	74.00	-18.68	44.05	8.00	35.14	38.41	Peak	259	100	VERTICAL
4		15960.80	42.47	54.00	-11.53	31.22	8.00	35.16	38.41	Average	259	100	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 10998.50	40.83	54.00	-13.17	30.78	6.46	34.81	38.40	Average	65	100	HORIZONTAL
2	p 10999.50	54.07	74.00	-19.93	44.02	6.46	34.81	38.40	Peak	65	100	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 10998.60	64.06	74.00	-9.94	54.01	6.46	34.81	38.40	Peak	89	100	VERTICAL
2	a 10999.40	50.53	54.00	-3.47	40.48	6.46	34.81	38.40	Average	89	100	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 116 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11159.20	43.15	54.00	-10.85	32.97	6.56	34.81	38.43	Average	135	144	HORIZONTAL
2	p 11160.10	57.57	74.00	-16.43	47.39	6.56	34.81	38.43	Peak	135	144	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 11159.50	64.27	74.00	-9.73	54.09	6.56	34.81	38.43	Peak	180	150	VERTICAL
2	a 11159.60	50.35	54.00	-3.65	40.17	6.56	34.81	38.43	Average	180	150	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 140 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p 11398.70	57.98	74.00	-16.02	47.63	6.69	34.82	38.48	Peak	194	157	HORIZONTAL
2	a 11398.80	44.33	54.00	-9.67	33.98	6.69	34.82	38.48	Average	194	157	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a 11398.60	44.49	54.00	-9.51	34.14	6.69	34.82	38.48	Average	106	101	VERTICAL
2	p 11403.00	57.63	74.00	-16.37	47.28	6.69	34.82	38.48	Peak	106	101	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 36 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10358.50	38.47	54.00	-15.53	30.75	4.97	38.37	35.62	Average	100	56	HORIZONTAL
2	10364.80	50.69	74.00	-23.31	42.97	4.97	38.37	35.62	Peak	100	56	HORIZONTAL
3	15540.60	40.00	54.00	-14.00	31.53	6.13	37.65	35.31	Average	100	159	HORIZONTAL
4	15548.60	52.71	74.00	-21.29	44.24	6.13	37.65	35.31	Peak	100	159	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10360.10	62.73	74.00	-11.27	55.01	4.97	38.37	35.62	Peak	100	219	VERTICAL
2	10360.70	47.38	54.00	-6.62	39.66	4.97	38.37	35.62	Average	100	219	VERTICAL
3	15541.70	40.02	54.00	-13.98	31.51	6.13	37.69	35.31	Average	100	279	VERTICAL
4	15542.10	51.19	74.00	-22.81	42.68	6.13	37.69	35.31	Peak	100	279	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 40 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10399.80	57.10	74.00	-16.90	49.32	4.98	38.38	35.58	Peak	100	225	HORIZONTAL
2	10400.50	43.72	54.00	-10.28	35.94	4.98	38.38	35.58	Average	100	225	HORIZONTAL
3	15584.60	50.97	74.00	-23.03	42.56	6.13	37.61	35.33	Peak	100	252	HORIZONTAL
4	15601.70	39.98	54.00	-14.02	31.59	6.13	37.60	35.34	Average	100	252	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10399.90	64.15	74.00	-9.85	56.37	4.98	38.38	35.58	Peak	100	197	VERTICAL
2	10400.20	48.73	54.00	-5.27	40.95	4.98	38.38	35.58	Average	100	197	VERTICAL
3	15608.90	51.70	74.00	-22.30	43.33	6.13	37.58	35.34	Peak	100	79	VERTICAL
4	15609.70	39.93	54.00	-14.07	31.56	6.13	37.58	35.34	Average	100	79	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 48 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10475.90	58.62	74.00	-15.38	50.75	5.00	38.39	35.52	Peak	160	188	HORIZONTAL
2	10479.30	45.65	54.00	-8.35	37.78	5.00	38.39	35.52	Average	160	188	HORIZONTAL
3	15722.80	39.54	54.00	-14.46	31.31	6.14	37.48	35.39	Average	100	79	HORIZONTAL
4	15728.50	52.03	74.00	-21.97	43.82	6.14	37.46	35.39	Peak	100	79	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10480.00	66.11	74.00	-7.89	58.23	5.00	38.40	35.52	Peak	100	11	VERTICAL
2	10481.90	50.72	54.00	-3.28	42.84	5.00	38.40	35.52	Average	100	11	VERTICAL
3	15717.20	52.96	74.00	-21.04	44.73	6.14	37.48	35.39	Peak	100	199	VERTICAL
4	15719.80	41.19	54.00	-12.81	32.96	6.14	37.48	35.39	Average	100	199	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 52 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10520.70	43.97	54.00	-10.03	36.06	5.01	38.40	35.50	Average	157	194	HORIZONTAL
2	10522.20	56.40	74.00	-17.60	48.47	5.01	38.40	35.48	Peak	157	194	HORIZONTAL
3	15772.60	39.07	54.00	-14.93	30.93	6.14	37.42	35.42	Average	100	240	HORIZONTAL
4	15782.40	51.06	74.00	-22.94	42.93	6.14	37.41	35.42	Peak	100	240	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10519.10	50.85	54.00	-3.15	42.95	5.01	38.39	35.50	Average	100	356	VERTICAL
2	10520.30	64.19	74.00	-9.81	56.29	5.01	38.39	35.50	Peak	100	356	VERTICAL
3	15770.90	51.69	74.00	-22.31	43.55	6.14	37.42	35.42	Peak	100	68	VERTICAL
4	15782.90	40.19	54.00	-13.81	32.06	6.14	37.41	35.42	Average	100	68	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 60 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10600.00	59.31	74.00	-14.69	51.34	5.01	38.38	35.42	Peak	163	181	HORIZONTAL
2	10600.50	45.89	54.00	-8.11	37.92	5.01	38.38	35.42	Average	163	181	HORIZONTAL
3	15903.40	40.13	54.00	-13.87	32.13	6.15	37.29	35.44	Average	100	216	HORIZONTAL
4	15917.10	52.62	74.00	-21.38	44.64	6.15	37.27	35.44	Peak	100	216	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10598.50	64.27	74.00	-9.73	56.30	5.01	38.38	35.42	Peak	100	3	VERTICAL
2	10600.40	50.84	54.00	-3.16	42.87	5.01	38.38	35.42	Average	100	3	VERTICAL
3	15900.50	41.62	54.00	-12.38	33.62	6.15	37.29	35.44	Average	100	97	VERTICAL
4	15902.60	52.31	74.00	-21.69	44.31	6.15	37.29	35.44	Peak	100	97	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 64 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10641.50	52.38	74.00	-21.62	44.39	5.01	38.37	35.39	Peak	100	207	HORIZONTAL
2	10642.20	39.86	54.00	-14.14	31.87	5.01	38.37	35.39	Average	100	207	HORIZONTAL
3	15975.90	39.99	54.00	-14.01	32.05	6.15	37.22	35.43	Average	100	92	HORIZONTAL
4	15976.40	51.83	74.00	-22.17	43.89	6.15	37.22	35.43	Peak	100	92	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10637.50	59.17	74.00	-14.83	51.18	5.01	38.37	35.39	Peak	102	220	VERTICAL
2	10638.80	45.31	54.00	-8.69	37.32	5.01	38.37	35.39	Average	102	220	VERTICAL
3	15977.20	39.92	54.00	-14.08	31.98	6.15	37.22	35.43	Average	100	262	VERTICAL
4	15977.50	49.93	74.00	-24.07	41.99	6.15	37.22	35.43	Peak	100	262	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 100 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10998.80	52.68	74.00	-21.32	44.45	5.01	38.32	35.10	Peak	170	224	HORIZONTAL
2	11001.50	40.56	54.00	-13.44	32.33	5.01	38.32	35.10	Average	170	224	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11000.60	48.03	54.00	-5.97	39.82	5.01	38.30	35.10	Average	100	28	VERTICAL
2	11001.20	62.69	74.00	-11.31	54.48	5.01	38.30	35.10	Peak	100	28	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 116 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11154.80	51.22	74.00	-22.78	42.89	5.04	38.45	35.16	Peak	100	146	HORIZONTAL
2	11158.40	39.02	54.00	-14.98	30.70	5.04	38.45	35.17	Average	100	146	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11155.20	61.89	74.00	-12.11	53.56	5.04	38.45	35.16	Peak	100	316	VERTICAL
2	11159.40	48.60	54.00	-5.40	40.26	5.04	38.47	35.17	Average	100	316	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 140 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11357.60	47.92	74.00	-26.08	39.42	5.09	38.65	35.24	Peak	100	32	HORIZONTAL
2	11370.80	36.13	54.00	-17.87	27.62	5.09	38.67	35.25	Average	100	32	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11399.20	42.36	54.00	-11.64	33.81	5.10	38.70	35.25	Average	101	210	VERTICAL
2	11400.00	55.44	74.00	-18.56	46.89	5.10	38.70	35.25	Peak	101	210	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 38 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10393.80	36.58	54.00	-17.42	28.82	4.98	38.38	35.60	Average	100	131	HORIZONTAL
2	10394.20	47.46	74.00	-26.54	39.70	4.98	38.38	35.60	Peak	100	131	HORIZONTAL
3	15525.20	39.82	54.00	-14.18	31.31	6.13	37.67	35.29	Average	100	243	HORIZONTAL
4	15526.20	50.80	74.00	-23.20	42.29	6.13	37.67	35.29	Peak	100	243	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10379.60	49.89	74.00	-24.11	42.13	4.98	38.38	35.60	Peak	100	15	VERTICAL
2	10379.80	38.39	54.00	-15.61	30.63	4.98	38.38	35.60	Average	100	15	VERTICAL
3	15547.60	39.81	54.00	-14.19	31.30	6.13	37.69	35.31	Average	100	115	VERTICAL
4	15554.20	51.78	74.00	-22.22	43.27	6.13	37.69	35.31	Peak	100	115	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 46 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10460.20	39.67	54.00	-14.33	31.82	5.00	38.39	35.54	Average	100	232	HORIZONTAL
2	10460.20	51.04	74.00	-22.96	43.19	5.00	38.39	35.54	Peak	100	232	HORIZONTAL
3	15688.20	50.96	74.00	-23.04	42.68	6.14	37.51	35.37	Peak	100	137	HORIZONTAL
4	15689.20	39.28	54.00	-14.72	31.00	6.14	37.51	35.37	Average	100	137	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10460.20	44.15	54.00	-9.85	36.30	5.00	38.39	35.54	Average	100	201	VERTICAL
2	10461.20	56.89	74.00	-17.11	49.04	5.00	38.39	35.54	Peak	100	201	VERTICAL
3	15703.40	39.21	54.00	-14.79	30.96	6.14	37.49	35.38	Average	100	264	VERTICAL
4	15704.80	49.84	74.00	-24.16	41.59	6.14	37.49	35.38	Peak	100	264	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 54 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10537.80	53.56	74.00	-20.44	45.64	5.01	38.39	35.48	Peak	162	235	HORIZONTAL
2	10546.80	43.75	54.00	-10.25	35.83	5.01	38.39	35.48	Average	162	235	HORIZONTAL
3	15836.60	51.71	74.00	-22.29	43.65	6.14	37.36	35.44	Peak	100	82	HORIZONTAL
4	15849.20	39.03	54.00	-14.97	31.00	6.14	37.34	35.45	Average	100	82	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10538.80	48.31	54.00	-5.69	40.39	5.01	38.39	35.48	Average	109	29	VERTICAL
2	10543.00	61.65	74.00	-12.35	53.73	5.01	38.39	35.48	Peak	109	29	VERTICAL
3	15812.60	39.44	54.00	-14.56	31.36	6.14	37.37	35.43	Average	100	157	VERTICAL
4	15842.80	50.97	74.00	-23.03	42.91	6.14	37.36	35.44	Peak	100	157	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 62 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10575.00	49.96	74.00	-24.04	42.00	5.01	38.39	35.44	Peak	101	86	HORIZONTAL
2	10586.80	37.04	54.00	-16.96	29.09	5.01	38.38	35.44	Average	101	86	HORIZONTAL
3	15910.70	39.68	54.00	-14.32	31.68	6.15	37.29	35.44	Average	101	194	HORIZONTAL
4	15911.10	51.10	74.00	-22.90	43.10	6.15	37.29	35.44	Peak	101	194	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	10616.00	49.12	74.00	-24.88	41.15	5.01	38.38	35.42	Peak	101	205	VERTICAL
2	10620.80	37.39	54.00	-16.61	29.42	5.01	38.38	35.42	Average	101	205	VERTICAL
3	15910.50	39.65	54.00	-14.35	31.65	6.15	37.29	35.44	Average	101	290	VERTICAL
4	15911.70	51.65	74.00	-22.35	43.65	6.15	37.29	35.44	Peak	101	290	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 102 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11058.20	46.54	74.00	-27.46	38.28	5.02	38.37	35.13	Peak	101	82	HORIZONTAL
2	11059.80	36.47	54.00	-17.53	28.20	5.03	38.37	35.13	Average	101	82	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11022.80	36.83	54.00	-17.17	28.59	5.02	38.33	35.11	Average	101	152	VERTICAL
2	11042.00	48.60	74.00	-25.40	40.35	5.02	38.35	35.12	Peak	101	152	VERTICAL

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 110 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11100.00	57.41	74.00	-16.59	49.12	5.03	38.40	35.14	Peak	169	245	HORIZONTAL
2	11101.40	42.63	54.00	-11.37	34.34	5.03	38.40	35.14	Average	169	245	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11099.00	48.43	54.00	-5.57	40.14	5.03	38.40	35.14	Average	100	33	VERTICAL
2	11099.80	64.90	74.00	-9.10	56.61	5.03	38.40	35.14	Peak	100	33	VERTICAL

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 134 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11322.00	48.73	74.00	-25.27	40.26	5.08	38.62	35.23	Peak	100	206	HORIZONTAL
2	11341.40	37.39	54.00	-16.61	28.91	5.09	38.63	35.24	Average	100	206	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	11339.40	43.04	54.00	-10.96	34.57	5.08	38.63	35.24	Average	100	6	VERTICAL
2	11340.00	60.36	74.00	-13.64	51.89	5.08	38.63	35.24	Peak	100	6	VERTICAL

Note:

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

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

4.7. Band Edge Emissions Measurement

4.7.1. Limit

For transmitters operating in the 5.15-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. For transmitters operating in the 5.470-5.725 GHz band: all emissions outside of the 5.470-5.725 GHz band shall not exceed a -27dBm peak limit or average 54dBuV/m and peak 74dBuV/m limits. In addition, In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(kHz)	300
0.490~1.705	24000/F(kHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

4.7.2. Measuring Instruments and Setting

Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	1MHz / 3MHz for Peak

4.7.3. Test Procedures

1. The test procedure is the same as section 4.6.3, only the frequency range investigated is limited to 100MHz around bandedges.

4.7.4. Test Setup Layout

This test setup layout is the same as that shown in section 4.6.4.

4.7.5. Test Deviation

There is no deviation with the original standard.

4.7.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

4.7.7. Test Result of Band Edge and Fundamental Emissions

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 36, 40, 48 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.20	72.90	74.00	-1.10	32.76	6.13	34.01	0.00	Peak	104	215	VERTICAL
2	5150.00	50.68	54.00	-3.32	10.54	6.13	34.01	0.00	Average	104	215	VERTICAL
3	5184.60	101.39			61.16	6.15	34.08	0.00	Average	104	215	VERTICAL
4	5187.00	112.47			72.24	6.15	34.08	0.00	Peak	104	215	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	52.91	54.00	-1.09	12.77	6.13	34.01	0.00	Average	102	319	VERTICAL
2	5150.00	72.99	74.00	-1.01	32.85	6.13	34.01	0.00	Peak	102	319	VERTICAL
3	5205.60	106.12			65.85	6.16	34.11	0.00	Average	102	319	VERTICAL
4	5206.80	116.76			76.49	6.16	34.11	0.00	Peak	102	319	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	44.13	54.00	-9.87	3.99	6.13	34.01	0.00	Average	104	218	VERTICAL
2	5150.00	54.81	74.00	-19.19	14.67	6.13	34.01	0.00	Peak	104	218	VERTICAL
3	5244.20	117.61			77.23	6.20	34.18	0.00	Peak	104	218	VERTICAL
4	5246.00	106.78			66.36	6.20	34.22	0.00	Average	104	218	VERTICAL
5	5350.00	44.05	54.00	-9.95	3.37	6.26	34.42	0.00	Average	104	218	VERTICAL
6	5350.00	56.13	74.00	-17.87	15.45	6.26	34.42	0.00	Peak	104	218	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 52, 60, 64 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	43.87	54.00	-10.13	3.73	6.13	34.01	0.00	Average	100	323	VERTICAL
2	5150.00	55.61	74.00	-18.39	15.47	6.13	34.01	0.00	Peak	100	323	VERTICAL
3	5254.60	104.56			64.14	6.20	34.22	0.00	Average	100	323	VERTICAL
4	5257.00	115.40			74.98	6.20	34.22	0.00	Peak	100	323	VERTICAL
5	5350.00	44.39	54.00	-9.61	3.71	6.26	34.42	0.00	Average	100	323	VERTICAL
6	5355.40	56.39	74.00	-17.61	15.71	6.26	34.42	0.00	Peak	100	323	VERTICAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5294.80	103.57			63.05	6.23	34.29	0.00	Average	100	319	VERTICAL
2	5303.20	113.87			73.32	6.23	34.32	0.00	Peak	100	319	VERTICAL
3	5350.00	47.71	54.00	-6.29	7.03	6.26	34.42	0.00	Average	100	319	VERTICAL
4	5350.00	66.80	74.00	-7.20	26.12	6.26	34.42	0.00	Peak	100	319	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5314.80	100.62			60.02	6.24	34.36	0.00	Average	100	323	VERTICAL
2	5316.80	112.09			71.49	6.24	34.36	0.00	Peak	100	323	VERTICAL
3	5350.00	51.49	54.00	-2.51	10.81	6.26	34.42	0.00	Average	100	323	VERTICAL
4	5350.00	72.91	74.00	-1.09	32.23	6.26	34.42	0.00	Peak	100	323	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 100, 140 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	45.36	54.00	-8.64	4.40	6.33	34.63	0.00	Average	100	323	VERTICAL
2	5460.00	62.77	74.00	-11.23	21.81	6.33	34.63	0.00	Peak	100	323	VERTICAL
3	5469.20	72.74	74.00	-1.26	31.73	6.34	34.67	0.00	Peak	100	323	VERTICAL
4	5470.00	51.29	54.00	-2.71	10.28	6.34	34.67	0.00	Average	100	323	VERTICAL
5	5504.40	102.15			61.08	6.36	34.71	0.00	Average	100	323	VERTICAL
6	5506.60	112.98			71.91	6.36	34.71	0.00	Peak	100	323	VERTICAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5695.60	101.10			59.81	6.43	34.86	0.00	Average	100	91	VERTICAL
2	5696.20	111.33			70.04	6.43	34.86	0.00	Peak	100	91	VERTICAL
3	5725.00	52.93	54.00	-1.07	11.59	6.45	34.89	0.00	Average	100	91	VERTICAL
4	5725.60	68.86	74.00	-5.14	27.52	6.45	34.89	0.00	Peak	100	91	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 38, 46 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 38

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5148.40	70.25	74.00	-3.75	30.11	6.13	34.01	0.00	Peak	106	218	VERTICAL
2	5150.00	52.97	54.00	-1.03	12.83	6.13	34.01	0.00	Average	106	218	VERTICAL
3	5195.60	105.37			65.10	6.16	34.11	0.00	Peak	106	218	VERTICAL
4	5202.00	93.81			53.54	6.16	34.11	0.00	Average	106	218	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5146.80	72.65	74.00	-1.35	32.51	6.13	34.01	0.00	Peak	105	219	VERTICAL
2	5150.00	52.95	54.00	-1.05	12.81	6.13	34.01	0.00	Average	105	219	VERTICAL
3	5237.60	112.60			72.24	6.18	34.18	0.00	Peak	105	219	VERTICAL
4	5240.40	101.99			61.63	6.18	34.18	0.00	Average	105	219	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 54, 62 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5257.20	101.11			60.69	6.20	34.22	0.00	Average	100	323	VERTICAL
2	5258.00	111.76			71.34	6.20	34.22	0.00	Peak	100	323	VERTICAL
3	5350.00	53.00	54.00	-1.00	12.32	6.26	34.42	0.00	Average	100	323	VERTICAL
4	5350.00	70.97	74.00	-3.03	30.29	6.26	34.42	0.00	Peak	100	323	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5297.60	93.54			52.99	6.23	34.32	0.00	Average	100	324	VERTICAL
2	5304.40	103.98			63.43	6.23	34.32	0.00	Peak	100	324	VERTICAL
3	5350.00	52.92	54.00	-1.08	12.24	6.26	34.42	0.00	Average	100	324	VERTICAL
4	5350.00	70.85	74.00	-3.15	30.17	6.26	34.42	0.00	Peak	100	324	VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 102, 110, 134 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	47.46	54.00	-6.54	6.50	6.33	34.63	0.00	Average	110	216	VERTICAL
2	5460.00	60.85	74.00	-13.15	19.89	6.33	34.63	0.00	Peak	110	216	VERTICAL
3	5470.00	52.82	54.00	-1.18	11.81	6.34	34.67	0.00	Average	110	216	VERTICAL
4	5470.00	69.55	74.00	-4.45	28.54	6.34	34.67	0.00	Peak	110	216	VERTICAL
5	5498.40	94.26			53.20	6.36	34.70	0.00	Average	110	216	VERTICAL
6	5499.20	105.63			64.57	6.36	34.70	0.00	Peak	110	216	VERTICAL

Item 5, 6 are the fundamental frequency at 5510MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5459.60	72.50	74.00	-1.50	31.54	6.33	34.63	0.00	Peak	100	218	VERTICAL
2	5460.00	49.95	54.00	-4.05	8.99	6.33	34.63	0.00	Average	100	218	VERTICAL
3	5465.20	72.84	74.00	-1.16	31.87	6.34	34.63	0.00	Peak	100	218	VERTICAL
4	5470.00	52.94	54.00	-1.06	11.93	6.34	34.67	0.00	Average	100	218	VERTICAL
5	5533.60	100.90			59.80	6.37	34.73	0.00	Average	100	218	VERTICAL
6	5536.40	111.26			70.15	6.37	34.74	0.00	Peak	100	218	VERTICAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5655.60	110.52			69.27	6.42	34.83	0.00	Peak	100	92	VERTICAL
2	5656.00	99.22			57.97	6.42	34.83	0.00	Average	100	92	VERTICAL
3	5725.00	52.84	54.00	-1.16	11.50	6.45	34.89	0.00	Average	100	92	VERTICAL
4	5725.00	72.83	74.00	-1.17	31.49	6.45	34.89	0.00	Peak	100	92	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36, 40, 48 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	51.28	54.00	-2.72	11.14	6.13	34.01	0.00	Average	108	218	VERTICAL
2	5150.00	72.98	74.00	-1.02	32.84	6.13	34.01	0.00	Peak	108	218	VERTICAL
3	5185.00	102.06			61.83	6.15	34.08	0.00	Average	108	218	VERTICAL
4	5185.60	112.74			72.51	6.15	34.08	0.00	Peak	108	218	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5148.00	72.79	74.00	-1.21	32.65	6.13	34.01	0.00	Peak	104	218	VERTICAL
2	5150.00	50.39	54.00	-3.61	10.25	6.13	34.01	0.00	Average	104	218	VERTICAL
3	5196.00	106.28			66.01	6.16	34.11	0.00	Average	104	218	VERTICAL
4	5204.80	117.68			77.41	6.16	34.11	0.00	Peak	104	218	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5135.60	57.17	74.00	-16.83	17.07	6.12	33.98	0.00	Peak	104	218	VERTICAL
2	5150.00	44.01	54.00	-9.99	3.87	6.13	34.01	0.00	Average	104	218	VERTICAL
3	5237.00	107.00			66.64	6.18	34.18	0.00	Average	104	218	VERTICAL
4	5241.20	117.63			77.27	6.18	34.18	0.00	Peak	104	218	VERTICAL
5	5350.00	44.05	54.00	-9.95	3.37	6.26	34.42	0.00	Average	104	218	VERTICAL
6	5351.20	55.21	74.00	-18.79	14.53	6.26	34.42	0.00	Peak	104	218	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52, 60, 64 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5143.40	57.13	74.00	-16.87	16.99	6.13	34.01	0.00	Peak	100	323	VERTICAL
2	5150.00	43.86	54.00	-10.14	3.72	6.13	34.01	0.00	Average	100	323	VERTICAL
3	5254.60	104.84			64.42	6.20	34.22	0.00	Average	100	323	VERTICAL
4	5256.40	115.27			74.85	6.20	34.22	0.00	Peak	100	323	VERTICAL
5	5350.00	44.37	54.00	-9.63	3.69	6.26	34.42	0.00	Average	100	323	VERTICAL
6	5350.00	56.18	74.00	-17.82	15.50	6.26	34.42	0.00	Peak	100	323	VERTICAL

Item 3, 4 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5294.00	115.08			74.56	6.23	34.29	0.00	Peak	100	323	VERTICAL
2	5303.60	104.00			63.45	6.23	34.32	0.00	Average	100	323	VERTICAL
3	5350.00	46.68	54.00	-7.32	6.00	6.26	34.42	0.00	Average	100	323	VERTICAL
4	5350.00	65.54	74.00	-8.46	24.86	6.26	34.42	0.00	Peak	100	323	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5313.80	111.97			71.37	6.24	34.36	0.00	Peak	100	322	VERTICAL
2	5314.80	101.39			60.79	6.24	34.36	0.00	Average	100	322	VERTICAL
3	5350.00	51.77	54.00	-2.23	11.09	6.26	34.42	0.00	Average	100	322	VERTICAL
4	5351.20	72.84	74.00	-1.16	32.16	6.26	34.42	0.00	Peak	100	322	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25.6℃	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100, 140 / Ant. 1 / Chain 0 (1TX)
Test Date	Jun. 22, 2013		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	45.14	54.00	-8.86	4.18	6.33	34.63	0.00	Average	100	222	VERTICAL
2	5460.00	61.83	74.00	-12.17	20.87	6.33	34.63	0.00	Peak	100	222	VERTICAL
3	5469.80	72.92	74.00	-1.08	31.91	6.34	34.67	0.00	Peak	100	222	VERTICAL
4	5470.00	51.15	54.00	-2.85	10.14	6.34	34.67	0.00	Average	100	222	VERTICAL
5	5495.20	103.04			61.99	6.35	34.70	0.00	Average	100	222	VERTICAL
6	5504.00	113.84			72.77	6.36	34.71	0.00	Peak	100	222	VERTICAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5695.60	102.63			61.34	6.43	34.86	0.00	Average	100	91	VERTICAL
2	5696.00	112.57			71.28	6.43	34.86	0.00	Peak	100	91	VERTICAL
3	5725.00	52.69	54.00	-1.31	11.35	6.45	34.89	0.00	Average	100	91	VERTICAL
4	5725.80	71.99	74.00	-2.01	30.65	6.45	34.89	0.00	Peak	100	91	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 36, 40, 48 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5148.60	72.95	74.00	-1.05	35.85	3.43	33.67	0.00	Peak	100	0	VERTICAL
2	5150.00	50.90	54.00	-3.10	13.80	3.43	33.67	0.00	Average	100	0	VERTICAL
3	5186.60	103.28			66.11	3.44	33.73	0.00	Average	100	0	VERTICAL
4	5186.80	114.03			76.86	3.44	33.73	0.00	Peak	100	0	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5148.80	60.50	74.00	-13.50	23.40	3.43	33.67	0.00	Peak	110	334	VERTICAL
2	5150.00	43.22	54.00	-10.78	6.12	3.43	33.67	0.00	Average	110	334	VERTICAL
3	5207.20	105.45			68.24	3.45	33.76	0.00	Average	110	334	VERTICAL
4	5208.00	115.60			78.39	3.45	33.76	0.00	Peak	110	334	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	40.45	54.00	-13.55	3.35	3.43	33.67	0.00	Average	100	154	VERTICAL
2	5150.00	51.04	74.00	-22.96	13.94	3.43	33.67	0.00	Peak	100	154	VERTICAL
3	5234.80	105.96			68.68	3.46	33.82	0.00	Average	100	154	VERTICAL
4	5236.40	115.70			78.42	3.46	33.82	0.00	Peak	100	154	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 52, 60, 64 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5261.20	114.06			76.75	3.46	33.85	0.00	Peak	100	353	VERTICAL
2	5262.40	103.79			66.48	3.46	33.85	0.00	Average	100	353	VERTICAL
3	5351.60	54.84	74.00	-19.16	17.32	3.49	34.03	0.00	Peak	100	353	VERTICAL
4	5360.00	43.42	54.00	-10.58	5.90	3.49	34.03	0.00	Average	100	353	VERTICAL

Item 1, 2 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5305.60	114.96			77.54	3.48	33.94	0.00	Peak	100	42	VERTICAL
2	5307.20	104.61			67.19	3.48	33.94	0.00	Average	100	42	VERTICAL
3	5350.00	42.68	54.00	-11.32	5.16	3.49	34.03	0.00	Average	100	42	VERTICAL
4	5350.80	59.00	74.00	-15.00	21.48	3.49	34.03	0.00	Peak	100	42	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5326.60	105.33			67.87	3.49	33.97	0.00	Average	100	334	VERTICAL
2	5327.00	115.94			78.48	3.49	33.97	0.00	Peak	100	334	VERTICAL
3	5350.00	51.68	54.00	-2.32	14.16	3.49	34.03	0.00	Average	100	334	VERTICAL
4	5350.60	72.53	74.00	-1.47	35.01	3.49	34.03	0.00	Peak	100	334	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 20MHz Ch 100, 140 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	44.41	54.00	-9.59	6.68	3.52	34.21	0.00	Average	100	317	VERTICAL
2	5460.00	60.51	74.00	-13.49	22.78	3.52	34.21	0.00	Peak	100	317	VERTICAL
3	5469.00	72.22	74.00	-1.78	34.46	3.52	34.24	0.00	Peak	100	317	VERTICAL
4	5470.00	48.81	54.00	-5.19	11.05	3.52	34.24	0.00	Average	100	317	VERTICAL
5	5498.00	117.24			79.45	3.53	34.26	0.00	Peak	100	317	VERTICAL
6	5498.40	105.90			68.11	3.53	34.26	0.00	Average	100	317	VERTICAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5701.20	104.04			66.11	3.59	34.34	0.00	Average	100	143	VERTICAL
2	5702.40	114.29			76.36	3.59	34.34	0.00	Peak	100	143	VERTICAL
3	5725.00	52.56	54.00	-1.44	14.62	3.60	34.34	0.00	Average	100	143	VERTICAL
4	5725.00	71.01	74.00	-2.99	33.07	3.60	34.34	0.00	Peak	100	143	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 38, 46 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 38

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5145.60	72.93	74.00	-1.07	35.83	3.43	33.67	0.00	Peak	100	32	VERTICAL
2	5146.40	52.36	54.00	-1.64	15.26	3.43	33.67	0.00	Average	100	32	VERTICAL
3	5202.40	96.48			59.27	3.45	33.76	0.00	Average	100	32	VERTICAL
4	5203.20	107.52			70.31	3.45	33.76	0.00	Peak	100	32	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.20	69.54	74.00	-4.46	32.44	3.43	33.67	0.00	Peak	107	11	VERTICAL
2	5150.00	47.63	54.00	-6.37	10.53	3.43	33.67	0.00	Average	107	11	VERTICAL
3	5232.00	102.50			65.22	3.46	33.82	0.00	Average	107	11	VERTICAL
4	5233.20	113.89			76.61	3.46	33.82	0.00	Peak	107	11	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 54, 62 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5262.80	102.46			65.12	3.46	33.88	0.00	Average	100	189	VERTICAL
2	5264.40	114.30			76.96	3.46	33.88	0.00	Peak	100	189	VERTICAL
3	5350.00	49.41	54.00	-4.59	11.89	3.49	34.03	0.00	Average	100	189	VERTICAL
4	5350.00	68.91	74.00	-5.09	31.39	3.49	34.03	0.00	Peak	100	189	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5318.40	108.78			71.33	3.48	33.97	0.00	Peak	100	335	VERTICAL
2	5320.40	97.72			60.27	3.48	33.97	0.00	Average	100	335	VERTICAL
3	5354.40	72.95	74.00	-1.05	35.43	3.49	34.03	0.00	Peak	100	335	VERTICAL
4	5356.40	51.08	54.00	-2.92	13.56	3.49	34.03	0.00	Average	100	335	VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS0 40MHz Ch 102, 110, 134 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	43.99	54.00	-10.01	6.26	3.52	34.21	0.00	Average	100	318	VERTICAL
2	5460.00	59.81	74.00	-14.19	22.08	3.52	34.21	0.00	Peak	100	318	VERTICAL
3	5468.80	72.57	74.00	-1.43	34.81	3.52	34.24	0.00	Peak	100	318	VERTICAL
4	5470.00	52.89	54.00	-1.11	15.13	3.52	34.24	0.00	Average	100	318	VERTICAL
5	5492.40	96.21			58.42	3.53	34.26	0.00	Average	100	318	VERTICAL
6	5492.40	106.84			69.05	3.53	34.26	0.00	Peak	100	318	VERTICAL

Item 5, 6 are the fundamental frequency at 5510MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5454.80	60.08	74.00	-13.92	22.35	3.52	34.21	0.00	Peak	100	11	VERTICAL
2	5455.60	45.11	54.00	-8.89	7.38	3.52	34.21	0.00	Average	100	11	VERTICAL
3	5469.20	72.96	74.00	-1.04	35.20	3.52	34.24	0.00	Peak	100	11	VERTICAL
4	5470.00	48.13	54.00	-5.87	10.37	3.52	34.24	0.00	Average	100	11	VERTICAL
5	5547.60	113.81			75.95	3.55	34.31	0.00	Peak	100	11	VERTICAL
6	5548.40	101.91			64.05	3.55	34.31	0.00	Average	100	11	VERTICAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5659.60	113.90			75.98	3.59	34.33	0.00	Peak	100	46	VERTICAL
2	5661.20	102.85			64.93	3.59	34.33	0.00	Average	100	46	VERTICAL
3	5725.00	52.54	54.00	-1.46	14.60	3.60	34.34	0.00	Average	100	46	VERTICAL
4	5725.00	72.42	74.00	-1.58	34.48	3.60	34.34	0.00	Peak	100	46	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 36, 40, 48 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 36

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	!	5149.20	72.75	74.00	-1.25	35.27	4.34	0.00	33.14	Peak	291	100	VERTICAL
2	!	5150.00	51.34	54.00	-2.66	13.86	4.34	0.00	33.14	Average	291	100	VERTICAL
3	a	5173.00	103.44			65.92	4.35	0.00	33.17	Average	291	100	VERTICAL
4	p	5173.20	114.65			77.13	4.35	0.00	33.17	Peak	291	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5112.40	41.77	54.00	-12.23	4.36	4.32	0.00	33.09	Average	286	100	VERTICAL
2		5147.20	58.64	74.00	-15.36	21.16	4.34	0.00	33.14	Peak	286	100	VERTICAL
3	p	5203.20	116.26			78.67	4.37	0.00	33.22	Peak	286	100	VERTICAL
4	a	5203.20	105.51			67.92	4.37	0.00	33.22	Average	286	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	50.96	74.00	-23.04	13.48	4.34	0.00	33.14	Peak	34	100	VERTICAL
2		5150.00	40.40	54.00	-13.60	2.92	4.34	0.00	33.14	Average	34	100	VERTICAL
3	p	5246.60	116.01			78.31	4.40	0.00	33.30	Peak	34	100	VERTICAL
4	a	5246.60	105.36			67.66	4.40	0.00	33.30	Average	34	100	VERTICAL
5		5350.00	52.08	74.00	-21.92	14.15	4.47	0.00	33.46	Peak	34	100	VERTICAL
6		5350.00	41.26	54.00	-12.74	3.33	4.47	0.00	33.46	Average	34	100	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 52, 60, 64 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 52

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5150.00	52.33	74.00	-21.67	14.85	4.34	0.00	33.14	Peak	0	100	VERTICAL
2		5150.00	40.30	54.00	-13.70	2.82	4.34	0.00	33.14	Average	0	100	VERTICAL
3	p	5254.00	113.74			76.04	4.40	0.00	33.30	Peak	0	100	VERTICAL
4	a	5254.00	103.55			65.85	4.40	0.00	33.30	Average	0	100	VERTICAL
5		5350.00	51.49	74.00	-22.51	13.56	4.47	0.00	33.46	Peak	0	100	VERTICAL
6		5350.00	40.85	54.00	-13.15	2.92	4.47	0.00	33.46	Average	0	100	VERTICAL

Item 1, 2 are the fundamental frequency at 5260 MHz.

Channel 60

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	a	5294.00	104.50			66.68	4.44	0.00	33.38	Average	34	100	VERTICAL
2	p	5294.40	114.61			76.79	4.44	0.00	33.38	Peak	34	100	VERTICAL
3		5350.00	57.38	74.00	-16.62	19.45	4.47	0.00	33.46	Peak	34	100	VERTICAL
4		5378.40	43.27	54.00	-10.73	5.27	4.49	0.00	33.51	Average	34	100	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5323.80	114.71			76.85	4.45	0.00	33.41	Peak	180	100	VERTICAL
2	a	5324.00	103.87			66.01	4.45	0.00	33.41	Average	180	100	VERTICAL
3	!	5350.00	72.75	74.00	-1.25	34.82	4.47	0.00	33.46	Peak	180	100	VERTICAL
4	!	5350.00	51.20	54.00	-2.80	13.27	4.47	0.00	33.46	Average	180	100	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11a Ch 100, 140 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 100

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1		5455.80	45.67	54.00	-8.33	7.51	4.54	0.00	33.62	Average	44	100	VERTICAL
2		5460.00	58.73	74.00	-15.27	20.57	4.54	0.00	33.62	Peak	44	100	VERTICAL
3	!	5469.60	71.22	74.00	-2.78	33.02	4.55	0.00	33.65	Peak	44	100	VERTICAL
4	!	5470.00	49.06	54.00	-4.94	10.86	4.55	0.00	33.65	Average	44	100	VERTICAL
5	p	5495.20	115.32			77.09	4.56	0.00	33.67	Peak	44	100	VERTICAL
6	a	5495.60	104.70			66.47	4.56	0.00	33.67	Average	44	100	VERTICAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

		Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Preamp Factor	Antenna Factor	Remark	T/Pos	A/Pos	Pol/Phase
		MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB	dB/m		deg	cm	
1	p	5695.00	113.30			74.33	4.70	0.00	34.27	Peak	321	102	VERTICAL
2	a	5695.40	102.72			63.75	4.70	0.00	34.27	Average	321	102	VERTICAL
3	!	5725.00	72.23	74.00	-1.77	33.14	4.72	0.00	34.37	Peak	321	102	VERTICAL
4	!	5725.00	50.74	54.00	-3.26	11.65	4.72	0.00	34.37	Average	321	102	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 36, 40, 48 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 36

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.80	71.01	74.00	-2.99	33.91	3.43	33.67	0.00	Peak	100	39	VERTICAL
2	5150.00	52.43	54.00	-1.57	15.33	3.43	33.67	0.00	Average	100	39	VERTICAL
3	5184.60	102.30			65.13	3.44	33.73	0.00	Average	100	39	VERTICAL
4	5185.00	115.72			78.55	3.44	33.73	0.00	Peak	100	39	VERTICAL

Item 3, 4 are the fundamental frequency at 5180 MHz.

Channel 40

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.60	64.30	74.00	-9.70	27.20	3.43	33.67	0.00	Peak	100	284	VERTICAL
2	5150.00	46.17	54.00	-7.83	9.07	3.43	33.67	0.00	Average	100	284	VERTICAL
3	5202.80	116.74			79.53	3.45	33.76	0.00	Peak	100	284	VERTICAL
4	5204.00	104.28			67.07	3.45	33.76	0.00	Average	100	284	VERTICAL

Item 3, 4 are the fundamental frequency at 5200 MHz.

Channel 48

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5150.00	40.55	54.00	-13.45	3.45	3.43	33.67	0.00	Average	100	199	VERTICAL
2	5150.00	51.67	74.00	-22.33	14.57	3.43	33.67	0.00	Peak	100	199	VERTICAL
3	5234.80	105.69			68.41	3.46	33.82	0.00	Average	100	199	VERTICAL
4	5235.20	118.40			81.12	3.46	33.82	0.00	Peak	100	199	VERTICAL

Item 3, 4 are the fundamental frequency at 5240 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 52, 60, 64 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 52

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5257.20	103.65			66.34	3.46	33.85	0.00	Average	102	6	VERTICAL
2	5257.20	115.83			78.52	3.46	33.85	0.00	Peak	102	6	VERTICAL
3	5358.80	54.16	74.00	-19.84	16.64	3.49	34.03	0.00	Peak	102	6	VERTICAL
4	5360.00	41.92	54.00	-12.08	4.40	3.49	34.03	0.00	Average	102	6	VERTICAL

Item 1, 2 are the fundamental frequency at 5260 MHz.

Channel 60

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5304.00	103.85			66.43	3.48	33.94	0.00	Average	100	355	VERTICAL
2	5304.80	116.94			79.52	3.48	33.94	0.00	Peak	100	355	VERTICAL
3	5350.00	46.36	54.00	-7.64	8.84	3.49	34.03	0.00	Average	100	355	VERTICAL
4	5350.80	62.69	74.00	-11.31	25.17	3.49	34.03	0.00	Peak	100	355	VERTICAL

Item 1, 2 are the fundamental frequency at 5300 MHz.

Channel 64

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5325.00	115.85			78.39	3.49	33.97	0.00	Peak	100	174	VERTICAL
2	5326.20	103.49			66.03	3.49	33.97	0.00	Average	100	174	VERTICAL
3	5350.00	52.48	54.00	-1.52	14.96	3.49	34.03	0.00	Average	100	174	VERTICAL
4	5351.80	68.89	74.00	-5.11	31.37	3.49	34.03	0.00	Peak	100	174	VERTICAL

Item 1, 2 are the fundamental frequency at 5320 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 20MHz Ch 100, 140 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 100

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5459.00	64.19	74.00	-9.81	26.46	3.52	34.21	0.00	Peak	100	334	VERTICAL
2	5460.00	44.75	54.00	-9.25	7.02	3.52	34.21	0.00	Average	100	334	VERTICAL
3	5469.00	72.59	74.00	-1.41	34.83	3.52	34.24	0.00	Peak	100	334	VERTICAL
4	5470.00	52.29	54.00	-1.71	14.53	3.52	34.24	0.00	Average	100	334	VERTICAL
5	5495.60	116.60			78.81	3.53	34.26	0.00	Peak	100	334	VERTICAL
6	5496.40	103.35			65.56	3.53	34.26	0.00	Average	100	334	VERTICAL

Item 5, 6 are the fundamental frequency at 5500 MHz.

Channel 140

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5695.20	100.92			62.99	3.59	34.34	0.00	Average	100	15	VERTICAL
2	5697.40	113.11			75.18	3.59	34.34	0.00	Peak	100	15	VERTICAL
3	5725.00	52.39	54.00	-1.61	14.45	3.60	34.34	0.00	Average	100	15	VERTICAL
4	5725.00	71.50	74.00	-2.50	33.56	3.60	34.34	0.00	Peak	100	15	VERTICAL

Item 1, 2 are the fundamental frequency at 5700 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 38, 46 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 38

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5148.80	67.60	74.00	-6.40	30.50	3.43	33.67	0.00	Peak	100	352	VERTICAL
2	5150.00	52.22	54.00	-1.78	15.12	3.43	33.67	0.00	Average	100	352	VERTICAL
3	5194.80	106.18			68.97	3.45	33.76	0.00	Peak	100	352	VERTICAL
4	5198.40	92.80			55.59	3.45	33.76	0.00	Average	100	352	VERTICAL

Item 3, 4 are the fundamental frequency at 5190 MHz.

Channel 46

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5149.20	71.67	74.00	-2.33	34.57	3.43	33.67	0.00	Peak	100	15	VERTICAL
2	5150.00	49.55	54.00	-4.45	12.45	3.43	33.67	0.00	Average	100	15	VERTICAL
3	5238.80	99.82			62.54	3.46	33.82	0.00	Average	100	15	VERTICAL
4	5238.80	113.28			76.00	3.46	33.82	0.00	Peak	100	15	VERTICAL

Item 3, 4 are the fundamental frequency at 5230 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 54, 62 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 54

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5258.80	99.81			62.50	3.46	33.85	0.00	Average	100	355	VERTICAL
2	5261.20	112.91			75.60	3.46	33.85	0.00	Peak	100	355	VERTICAL
3	5350.00	49.98	54.00	-4.02	12.46	3.49	34.03	0.00	Average	100	355	VERTICAL
4	5351.20	67.78	74.00	-6.22	30.26	3.49	34.03	0.00	Peak	100	355	VERTICAL

Item 1, 2 are the fundamental frequency at 5270 MHz.

Channel 62

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5326.00	94.52			57.06	3.49	33.97	0.00	Average	100	172	VERTICAL
2	5326.80	107.77			70.31	3.49	33.97	0.00	Peak	100	172	VERTICAL
3	5350.00	52.89	54.00	-1.11	15.37	3.49	34.03	0.00	Average	100	172	VERTICAL
4	5350.00	68.09	74.00	-5.91	30.57	3.49	34.03	0.00	Peak	100	172	VERTICAL

Item 1, 2 are the fundamental frequency at 5310 MHz.

Temperature	25.6°C	Humidity	56%
Test Engineer	Kenneth Huang	Configurations	IEEE 802.11n MCS8 40MHz Ch 102, 110, 134 / Ant. 1 / Chain 0 + Chain 1 (2TX)
Test Date	Jun. 29, 2013		

Channel 102

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5460.00	46.40	54.00	-7.60	8.67	3.52	34.21	0.00	Average	100	337	VERTICAL
2	5460.00	60.45	74.00	-13.55	22.72	3.52	34.21	0.00	Peak	100	337	VERTICAL
3	5467.20	71.00	74.00	-3.00	33.24	3.52	34.24	0.00	Peak	100	337	VERTICAL
4	5470.00	52.64	54.00	-1.36	14.88	3.52	34.24	0.00	Average	100	337	VERTICAL
5	5518.80	94.33			56.49	3.54	34.30	0.00	Average	100	337	VERTICAL
6	5527.20	106.99			69.14	3.55	34.30	0.00	Peak	100	337	VERTICAL

Item 5, 6 are the fundamental frequency at 5510MHz.

Channel 110

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5457.60	67.84	74.00	-6.16	30.11	3.52	34.21	0.00	Peak	100	12	VERTICAL
2	5460.00	47.07	54.00	-6.93	9.34	3.52	34.21	0.00	Average	100	12	VERTICAL
3	5468.40	71.26	74.00	-2.74	33.50	3.52	34.24	0.00	Peak	100	12	VERTICAL
4	5470.00	52.62	54.00	-1.38	14.86	3.52	34.24	0.00	Average	100	12	VERTICAL
5	5535.60	114.64			76.78	3.55	34.31	0.00	Peak	100	12	VERTICAL
6	5538.80	102.11			64.25	3.55	34.31	0.00	Average	100	12	VERTICAL

Item 5, 6 are the fundamental frequency at 5550 MHz.

Channel 134

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	A/Pos	T/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		cm	deg	
1	5657.20	111.15			73.23	3.59	34.33	0.00	Peak	100	334	VERTICAL
2	5658.80	98.47			60.55	3.59	34.33	0.00	Average	100	334	VERTICAL
3	5725.00	50.79	54.00	-3.21	12.85	3.60	34.34	0.00	Average	100	334	VERTICAL
4	5727.00	69.78	74.00	-4.22	31.84	3.60	34.34	0.00	Peak	100	334	VERTICAL

Item 1, 2 are the fundamental frequency at 5670 MHz.

Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m)

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level

4.8. Frequency Stability Measurement

4.8.1. Limit

In-band emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be ± 20 ppm maximum for the 5 GHz band (IEEE 802.11n specification).

4.8.2. Measuring Instruments and Setting

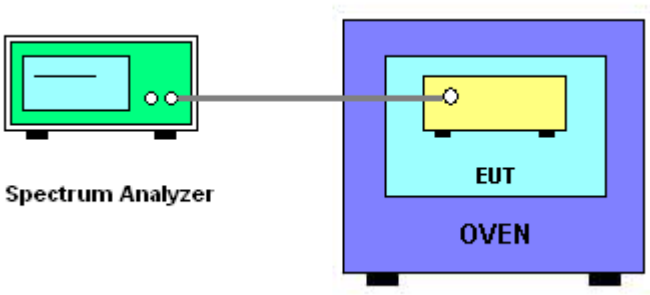
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Entire absence of modulation emissions bandwidth
RBW	10 kHz
VBW	10 kHz
Sweep Time	Auto

4.8.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5. fc is declaring of channel frequency. Then the frequency error formula is (fc-f)/fc × 10^6 ppm and the limit is less than ±20ppm (IEEE 802.11nspecification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is -30°C~50°C.

4.8.4. Test Setup Layout



4.8.5. Test Deviation

There is no deviation with the original standard.

4.8.6. EUT Operation during Test

The EUT was programmed to be in continuously un-modulation transmitting mode.

4.8.7. Test Result of Frequency Stability

Temperature	25°C	Humidity	56%
Test Engineer	Benson Peng	Test Date	Jul. 03, 2013

Voltage vs. Frequency Stability / Ant. 1 / Chain 0 (1TX)

Voltage	Measurement Frequency (MHz)		
(V)	5200	5300	5500
126.50	5199.9530	5299.9518	5499.9524
110.00	5199.9524	5299.9514	5499.9520
93.50	5199.9520	5299.9514	5499.9512
Max. Deviation (MHz)	0.048000	0.048600	0.048800
Max. Deviation (ppm)	9.23	9.17	8.87

Temperature vs. Frequency Stability / Ant. 1 / Chain 0 (1TX)

Temperature	Measurement Frequency (MHz)		
(°C)	5200	5300	5500
-30	5199.9595	5299.9586	5499.9596
-20	5199.9583	5299.9579	5499.9589
-10	5199.9571	5299.9573	5499.9586
0	5199.9552	5299.9568	5499.9580
10	5199.9554	5299.9562	5499.9582
20	5199.9550	5299.9560	5499.9568
30	5199.9542	5299.9550	5499.9560
40	5199.9528	5299.9552	5499.9556
50	5199.9532	5299.9542	5499.9530
Max. Deviation (MHz)	0.047200	0.045800	0.047000
Max. Deviation (ppm)	9.08	8.64	8.55

Voltage vs. Frequency Stability / Ant. 1 / Chain 0 + Chain 1 (2TX)

Voltage	Measurement Frequency (MHz)		
(V)	5200	5300	5500
126.50	5199.9530	5299.9518	5499.9524
110.00	5199.9524	5299.9514	5499.9520
93.50	5199.9520	5299.9514	5499.9512
Max. Deviation (MHz)	0.048000	0.048600	0.048800
Max. Deviation (ppm)	9.23	9.17	8.87

Temperature vs. Frequency Stability / Ant. 1 / Chain 0 + Chain 1 (2TX)

Temperature	Measurement Frequency (MHz)		
(°C)	5200	5300	5500
-30	5199.9568	5299.9782	5499.9602
-20	5199.9564	5299.9780	5499.9590
-10	5199.9556	5299.9784	5499.9586
0	5199.9552	5299.9568	5499.9580
10	5199.9554	5299.9562	5499.9582
20	5199.9550	5299.9560	5499.9568
30	5199.9542	5299.9550	5499.9560
40	5199.9528	5299.9552	5499.9556
50	5199.9532	5299.9542	5499.9530
Max. Deviation (MHz)	0.047200	0.045800	0.047000
Max. Deviation (ppm)	9.08	8.64	8.55

4.9. Antenna Requirements

4.9.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

4.9.2. Antenna Connector Construction

Please refer to section 3.3 in this test report; antenna connector complied with the requirements.

5. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMI Test Receiver	R&S	ESCS 30	100377	9kHz ~ 2.75GHz	Oct. 23, 2012	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150kHz ~ 100MHz	Nov. 26, 2012	Conduction (CO01-CB)
V- LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Jun. 26, 2012	Conduction (CO01-CB)
Impulsbegrenzer Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100430	9kHz~30MHz	Feb. 21, 2013	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	0.15MHz~30MHz	Dec. 04, 2012	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	-	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112D	22021	20MHz ~ 2GHz	Apr. 16, 2013	Radiation (03CH01-CB)
Loop Antenna	Teseq	HLA 6120	24155	9 kHz - 30 MHz	Nov. 05, 2012*	Radiation (03CH01-CB)
Horn Antenna	EMCO	3115	00075790	750MHz~18GHz	Nov. 27, 2012	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Nov. 23, 2012	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 27, 2012	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Nov. 23, 2012	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26.5GHz ~ 40GHz	Jul. 31, 2012	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100056	9KHz~40GHz	Nov. 16, 2012	Radiation (03CH01-CB)
EMI Test Receiver	R&S	ESCS 30	100355	9KHz ~ 2.75GHz	Apr. 12, 2013	Radiation (03CH01-CB)
Turn Table	INN CO	CO 2000	N/A	0 ~ 360 degree	N.C.R	Radiation (03CH01-CB)
Antenna Mast	INN CO	CO2000	N/A	1 m - 4 m	N.C.R	Radiation (03CH01-CB)
RF Cable-low	Woken	Low Cable-1	N/A	30 MHz - 1 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 18, 2012	Radiation (03CH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Oct. 08, 2012	Conducted (TH01-CB)
Temp. and Humidity Chamber	Ten Billion	TTH-D3SP	TBN-931011	-30~100 degree	Jun. 04, 2013	Conducted (TH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Power Divider	Woken	2 Way	0120A02056002D	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Power Divider	Woken	3 Way	MDC2366	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Power Divider	Woken	4 Way	0120A04056002D	2GHz ~ 18GHz	Nov. 18, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 19, 2012	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Nov. 28, 2012	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Nov. 27, 2012	Conducted (TH01-CB)

Note: Calibration Interval of instruments listed above is one year.

"*" Calibration Interval of instruments listed above is two years.

N.C.R. means Non-Calibration required.

6. MEASUREMENT UNCERTAINTY

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.026	dB	normal(k=2)	0.013
Cable loss	0.002	dB	normal(k=2)	0.001
AMN/LISN specification	1.200	dB	normal(k=2)	0.600
Mismatch Receiver VSWR 1= AMN/LISN VSWR 2=	-0.080	dB	U-shaped	0.060
combined standard uncertainty Ue(y)	1.2			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.4			

Uncertainty of Conducted Emission Measurement

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Cable loss	0.038	dB	normal(k=2)	0.019
Attenuator	0.047	dB	normal(k=2)	0.024
Power Meter specification	0.300	dB	normal(k=2)	0.150
Power Sensor specification	0.300	dB	normal(k=2)	0.150
Mismatch Receiver VSWR 1= Antenna VSWR 2= Pre Amplifier VSWR 3=	-0.080	dB	U-shaped	0.060
combined standard uncertainty Ue(y)	0.403			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	0.806			

Uncertainty of Radiated Emission Measurement (30MHz ~ 1,000MHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1727	dB	normal(k=1)	0.1727
Cable loss	0.1736	dB	normal(k=2)	0.0868
Antenna gain	0.1687	dB	normal(k=2)	0.0843
Site imperfection	0.4898	dB	Triangular	0.2
Pre-amplifier gain	0.3661	dB	normal(k=2)	0.183
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.5	dB	rectangular	0.2887
combined standard uncertainty Ue(y)	1.1434			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.2869			

Uncertainty of Radiated Emission Measurement (1GHz ~ 18GHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1908	dB	normal(k=1)	0.1908
Cable loss	0.1685	dB	normal(k=2)	0.0843
Antenna gain	0.1912	dB	normal(k=2)	0.0956
Site imperfection	1.3091	dB	Triangular	0.5344
Pre-amplifier gain	0.3043	dB	normal(k=2)	0.1521
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.8	dB	rectangular	0.4619
combined standard uncertainty Ue(y)	1.2965			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.593			

Uncertainty of Radiated Emission Measurement (18GHz ~ 40GHz)

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	0.1864	dB	normal(k=1)	0.1864
Cable loss	0.1666	dB	normal(k=2)	0.0833
Antenna gain	0.1904	dB	normal(k=2)	0.0952
Site imperfection	0.4882	dB	Triangular	0.1993
Pre-amplifier gain	0.2688	dB	normal(k=2)	0.1344
Transmitter antenna	1.7	dB	rectangular	0.9815
Signal generator	0.5	dB	rectangular	0.2887
Mismatch	0.08	dB	u-shape	0.244
Spectrum analyzer	0.8	dB	rectangular	0.4619
combined standard uncertainty Ue(y)	1.1874			
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	2.3749			