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FCC RADIO TEST REPORT

Applicant's company	**ASUSTeK COMPUTER INC.**
Applicant Address	4F, No. 150, Li-Te Rd., Peitou, Taipei 112, Taiwan
FCC ID	**MSQ-RTAC87U**
Manufacturer's company	**Compal Networking (KunShan) Co., LTD.**
Manufacturer Address	No. 520, Nabbang Rd., Economic & Technical Development Zone Kunshan, Jiangsu Province China

Product Name	Dual-band Wireless-AC Router
Brand Name	ASUS
Model No.	RT-AC87U, RT-AC87R
Test Rule Part(s)	47 CFR FCC Part 15 Subpart C § 15.247
Test Freq. Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Received Date	May 05, 2014
Final Test Date	Jun. 09, 2014
Submission Type	Original Equipment

Statement

Test result included is only for the IEEE 802.11n, IEEE 802.11b/g and IEEE 802.11a/ac 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 C**, **KDB 558074 D01 v03r02**, **KDB 662911 D01 v02r01**, **KDB644545 D01v01r02.**

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

Testing Laboratory
1190

Table of Contents

History of This Test Report

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR450542AA	Rev. 01	Initial issue of report	Jun. 24, 2014

Certificate No.: CB10306051

1. CERTIFICATE OF COMPLIANCE

Product Name	:	Dual-band Wireless-AC Router
Brand Name	:	ASUS
Model No.	:	RT-AC87U, RT-AC87R
Applicant	:	ASUSTeK COMPUTER INC.
Test Rule Part(s)	:	47 CFR FCC Part 15 Subpart C § 15.247

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on May 05, 2014 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 C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
4.1	15.207	AC Power Line Conducted Emissions	Complies	8.55 dB
4.2	15.247(b)(3)	Maximum Conducted Output Power	Complies	0.14 dB
4.3	15.247(e)	Power Spectral Density	Complies	1.36 dB
4.4	15.247(a)(2)	6dB Spectrum Bandwidth	Complies	-
4.5	15.247(d)	Radiated Emissions	Complies	2.03 dB
4.6	15.247(d)	Band Edge Emissions	Complies	1.00 dB
4.7	15.203	Antenna Requirements	Complies	-

3. GENERAL INFORMATION

3.1. Product Details

IEEE 802.11n/ac

Items	Description
Product Type	For 2.4GHz: WLAN (3TX, 3RX) For 5GHz: WLAN (4TX, 4RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	see the below table for IEEE 802.11n/ac
Data Modulation	For 802.11n: OFDM (BPSK / QPSK / 16QAM / 64QAM) For 802.11ac: OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)
Data Rate (Mbps)	see the below table for IEEE 802.11n/ac
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	For 2.4GHz Band: 11 for 20MHz bandwidth ; 7 for 40MHz bandwidth For 5GHz Band: 5 for 20MHz bandwidth ; 2 for 40MHz bandwidth ; 1 for 80MHz bandwidth
Channel Band Width (99%)	For 2.4GHz Band: <For Non-Beamforming Mode> MCS0/Nss1 (VHT20): 17.76 MHz ; MCS0/Nss1 (VHT40): 36.32 MHz <For Beamforming Mode> MCS0/Nss1 (VHT20): 17.76 MHz ; MCS0/Nss1 (VHT40): 36.32 MHz For 5GHz Band: <For Non-Beamforming Mode> 802.11ac MCS0/Nss1 (VHT20): 18.08 MHz ; 802.11ac MCS0/Nss1 (VHT40): 36.32 MHz ; 802.11ac MCS0/Nss1 (VHT80): 74.24 MHz <For Beamforming Mode> 802.11ac MCS0/Nss1 (VHT20): 17.84 MHz ; 802.11ac MCS0/Nss1 (VHT40): 36.48 MHz ; 802.11ac MCS0/Nss1 (VHT80): 75.52 MHz

Maximum Conducted Output Power	For 2.4GHz Band: <For Non-Beamforming Mode> MCS0/Nss1 (VHT20): 27.74 dBm ; MCS0/Nss1 (VHT40): 23.16 dBm <For Beamforming Mode> MCS0/Nss1 (VHT20): 27.29 dBm ; MCS0/Nss1 (VHT40): 22.46 dBm For 5GHz Band: <For Non-Beamforming Mode> 802.11ac MCS0/Nss1 (VHT20): 28.39 dBm ; 802.11ac MCS0/Nss1 (VHT40): 28.81 dBm ; 802.11ac MCS0/Nss1 (VHT80): 28.31 dBm <For Beamforming Mode> 802.11ac MCS0/Nss1 (VHT20): 26.07 dBm ; 802.11ac MCS0/Nss1 (VHT40): 26.14 dBm ; 802.11ac MCS0/Nss1 (VHT80): 26.08 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

IEEE 802.11a/b/g

Items	Description
Product Type	802.11a: WLAN (4TX, 4RX) 802.11b/g: WLAN (3TX, 3RX)
Radio Type	Intentional Transceiver
Power Type	From power adapter
Modulation	DSSS for IEEE 802.11b ; OFDM for IEEE 802.11a/g
Data Modulation	DSSS (BPSK / QPSK / CCK) ; OFDM (BPSK / QPSK / 16QAM / 64QAM)
Data Rate (Mbps)	DSSS (1/ 2/ 5.5/11) ; OFDM (6/9/12/18/24/36/48/54)
Frequency Range	2400 ~ 2483.5MHz / 5725 ~ 5850MHz
Channel Number	11b/g: 11 ; 11a: 5
Channel Band Width (99%)	11b: 11.84 MHz ; 11g: 16.40 MHz ; 11a: 16.88 MHz
Maximum Conducted Output Power	11b: 29.86 dBm ; 11g: 27.89 dBm ; 11a: 28.42 dBm
Carrier Frequencies	Please refer to section 3.4
Antenna	Please refer to section 3.3

Items	Description	
Beamforming Function	☒ With beamforming for 802 11n/ac in 2.4GHz/5GHz.	☐ Without beamforming

Antenna and Band width

Antenna	Three (TX)			Four (TX)		
Band width Mode	20 MHz	40 MHz	80 MHz	20 MHz	40 MHz	80 MHz
IEEE 802.11a	X	X	X	V	X	X
IEEE 802.11b	V	X	X	X	X	X
IEEE 802.11g	V	X	X	X	X	X
IEEE 802.11n (2.4GHz)	V	V	X	X	X	X
IEEE 802.11n (5GHz)	X	X	X	V	V	X
IEEE 802.11ac	V	V	X	V	V	V

IEEE 11n/ac Spec.

Protocol	Number of Transmit Chains (NTX)	Data Rate / MCS
802.11n (HT20) for 2.4GHz	3	MCS0-23
802.11n (HT40) for 2.4GHz	3	MCS0-23
802.11ac (VHT20) for 2.4GHz	3	MCS 0-9/Nss1-3
802.11ac (VHT40) for 2.4GHz	3	MCS 0-9/Nss1-3
802.11n (HT20) for 5GHz	4	MCS0-31
802.11n (HT40) for 5GHz	4	MCS0-31
802.11ac (VHT20) for 5GHz	4	MCS 0-9/Nss1-4
802.11ac (VHT40) for 5GHz	4	MCS 0-9/Nss1-4
802.11ac (VHT80) for 5GHz	4	MCS 0-9/Nss1-4
Note 1: IEEE Std. 802.11n modulation consists of HT20 and HT40 (HT: High Throughput). Then EUT support HT20 and HT40. Note 2: IEEE Std. 802.11ac modulation consists of VHT20, VHT40, VHT80 and VHT160 (VHT: Very High Throughput). Then EUT supports VHT20, VHT40 in 2.4GHz and supports VHT20, VHT40, VHT80 in 5GHz. Note 3: Modulation modes consist of below configuration: HT20/HT40: IEEE 802.11n, VHT20/VHT40/VHT80: IEEE 802.11ac		

3.2. Accessories

Power	Brand	Model	Rating
Adapter 1	ASUS	AD883J20	Input: 100-240V~50-60Hz 1.0A Output: 19V, 2.37A
Adapter 2	ASUS	ADP-45BW B	Input: 100-240V~50-60Hz 1.2A Output: 19V, 2.37A
Others			
RJ-45 Cable: Shielded, 1.5m			

3.3. Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)		
					2.4GHz	5GHz Band 1	5GHz Band 4
1	M.gear	C660-510310-A	Dipole Antenna	Reversed-SMA	3.66	3.24	3.29
	PSA	RFDPA171300SBLB803	Dipole Antenna	Reversed-SMA	2.85	2.75	3.26
2	M.gear	C660-510310-A	Dipole Antenna	Reversed-SMA	3.66	3.24	3.29
	PSA	RFDPA171300SBLB803	Dipole Antenna	Reversed-SMA	2.85	2.75	3.26
3	M.gear	C660-510310-A	Dipole Antenna	Reversed-SMA	3.66	3.24	3.29
	PSA	RFDPA171300SBLB803	Dipole Antenna	Reversed-SMA	2.85	2.75	3.26
4	M.gear	C660-510310-A	Dipole Antenna	Reversed-SMA	-	3.24	3.29
	PSA	RFDPA171300SBLB803	Dipole Antenna	Reversed-SMA	-	2.75	3.26

Note: M.gear antennas and PSA antennas are the same type antennas, only the higher gain antennas "M.gear" Antenna" was tested and recorded in the report.

<For 2.4GHz Band>

For IEEE 802.11b/g/n/ac mode (3TX/3RX)

Ant. 1, Ant. 2 and Ant. 3 can be used as transmitting/receiving antenna.

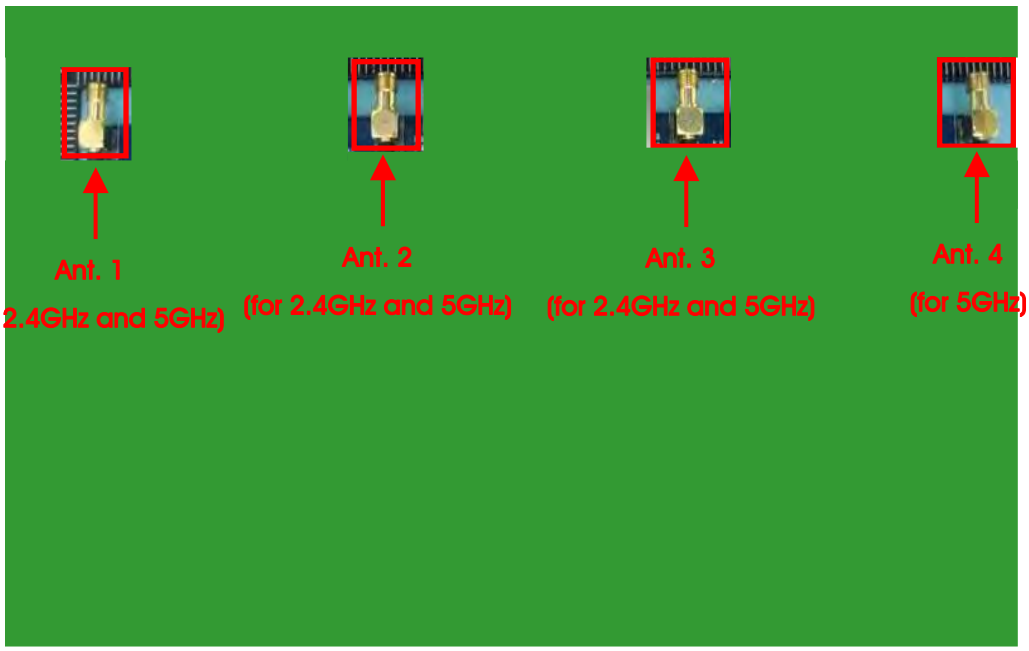
Ant. 1, Ant. 2 and Ant. 3 could transmit/receive simultaneously.

<For 5GHz Band>

For IEEE 802.11a/n/ac mode (4TX/4RX):

Ant. 1, Ant. 2, Ant. 3 and Ant. 4 can be used as transmitting/receiving antenna.

Ant. 1, Ant. 2, Ant. 3 and Ant. 4 could transmit/receive simultaneously.



3.4. Table for Carrier Frequencies

For 2.4GHz Band:

There are two bandwidth systems.

For 20MHz bandwidth systems, use Channel 1~Channel 11.

For 40MHz bandwidth systems, use Channel 3~Channel 9.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
2400~2483.5MHz	1	2412 MHz	7	2442 MHz
	2	2417 MHz	8	2447 MHz
	3	2422 MHz	9	2452 MHz
	4	2427 MHz	10	2457 MHz
	5	2432 MHz	11	2462 MHz
	6	2437 MHz	-	-

For 5GHz Band:

There are three bandwidth systems.

For 20MHz bandwidth systems, use Channel 149, 153, 157, 161, 165.

For 40MHz bandwidth systems, use Channel 151, 159.

For 80MHz bandwidth systems, use Channel 155.

Frequency Band	Channel No.	Frequency	Channel No.	Frequency
5725~5850 MHz Band 4	149	5745 MHz	157	5785 MHz
	151	5755 MHz	159	5795 MHz
	153	5765 MHz	161	5805 MHz
	155	5775 MHz	165	5825 MHz

3.5. 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.

For 2.4GHz Band:

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	CTX	-	-	-
Maximum Conducted Output Power	11ac VHT20	MCS0/Nss1	1/6/11	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	1+2+3
	11b/CCK	1 Mbps	1/6/11	1+2+3
	11g/BPSK	6 Mbps	1/6/11	1+2+3
Power Spectral Density	11ac VHT20	MCS0/Nss1	1/6/11	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	1+2+3
	11b/CCK	1 Mbps	1/6/11	1+2+3
	11g/BPSK	6 Mbps	1/6/11	1+2+3
6dB Spectrum Bandwidth	11ac VHT20	MCS0/Nss1	1/6/11	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	1+2+3
	11b/CCK	1 Mbps	1/6/11	1+2+3
	11g/BPSK	6 Mbps	1/6/11	1+2+3
Radiated Emissions Below 1GHz	CTX	-	-	-
Radiated Emissions Above 1GHz	11ac VHT20	MCS0/Nss1	1/6/11	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	1+2+3
	11b/CCK	1 Mbps	1/6/11	1+2+3
	11g/BPSK	6 Mbps	1/6/11	1+2+3
Band Edge Emissions	11ac VHT20	MCS0/Nss1	1/6/11	1+2+3
	11ac VHT40	MCS0/Nss1	3/6/9	1+2+3
	11b/CCK	1 Mbps	1/6/11	1+2+3
	11g/BPSK	6 Mbps	1/6/11	1+2+3

For 5GHz Band:

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Line Conducted Emissions	CTX	-	-	-
Maximum Conducted Output Power	11ac VHT20	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	MCS0/Nss1	155	1+2+3+4
	11a/BPSK	6 Mbps	149/157/165	1+2+3+4
Power Spectral Density	11ac VHT20	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	MCS0/Nss1	155	1+2+3+4
	11a/BPSK	6 Mbps	149/157/165	1+2+3+4
6dB Spectrum Bandwidth	11ac VHT20	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	MCS0/Nss1	155	1+2+3+4
	11a/BPSK	6 Mbps	149/157/165	1+2+3+4
Radiated Emissions Below 1GHz	CTX	-	-	-
Radiated Emissions Above 1GHz	11ac VHT20	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	MCS0/Nss1	155	1+2+3+4
	11a/BPSK	6 Mbps	149/157/165	1+2+3+4
Band Edge Emissions	11ac VHT20	MCS0/Nss1	149/157/165	1+2+3+4
	11ac VHT40	MCS0/Nss1	151/159	1+2+3+4
	11ac VHT80	MCS0/Nss1	155	1+2+3+4
	11a/BPSK	6 Mbps	149/157/165	1+2+3+4

Note 1: VHT20/VHT40 covers HT20/HT40, due to same modulation.

Note 2: There are two modes of EUT, one is beamforming mode, and the other is non-beamforming mode for 802 11n/ac in 2.4GHz / 5GHz. Beamforming mode and non-beamforming mode has been test and record in this test report.

The following test modes were performed for all tests:

For Conducted Emission test:

Mode 1. CTX with Adapter 1

Mode 2. CTX With Adapter 2

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission test<Below 1GHz>:

Mode 1. 2.4GHz CTX With Adapter 2

Mode 2. 5GHz CTX With Adapter 2

Mode 2 has been evaluated to be the worst case among Mode 1~2, thus measurement for Mode 3 will follow this same test mode.

Mode 3. 5GHz CTX With Adapter 1

Mode 2 is the worst case, so it was selected to record in this test report.

For Radiated Emission test<Above 1GHz>:

Mode 1. CTX

For Co-location MPE and Radiated Emission Co-location Test:

The EUT could be applied with 2.4GHz WLAN function and 5GHz WLAN function; therefore Co-location Maximum Permissible Exposure (Please refer to Appendix C) and Radiated Emission Co-location (please refer to Appendix D) tests are added for simultaneously transmit between 2.4GHz WLAN function and 5GHz WLAN function.

3.6. 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).

3.7. Table for Multiple List

1. The EUT has two model names which are identical to each other in all aspects except for the following table:

Model Name	Description
RT-AC87U	All the models are identical, the difference model served as marketing strategy.
RT-AC87R	

RT-AC87U was selected as representative model for the test and its data was recorded in this report.

3.8. Table for Supporting Units

For Test Site No: CO01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC

For Test Site No: 03CH01-CB <Below 1GHz>

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC

For Test Site No: 03CH01-CB / Above 1GHz <For Non-Beamforming Mode>:

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC

For Test Site No: 03CH01-CB / Above 1GHz <For Beamforming Mode>:

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC
Notebook	DELL	E6220	DoC
WLAN ac Dongle	Netgear	A6200	PY312200200

For Test Site No: TH01-CB

Support Unit	Brand	Model	FCC ID
Notebook	DELL	E6430	DoC

3.9. Table for Parameters of Test Software Setting

During testing, Channel and 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.

<For Non-Beamforming Mode>

For 2.4GHz Band

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	Mtool 2.0.0.7		
Frequency	2412 MHz	2437 MHz	2462 MHz
MCS0/Nss1 VHT20	58	88	66

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	Mtool 2.0.0.7		
Frequency	2422 MHz	2437 MHz	2452 MHz
MCS0/Nss1 VHT40	50	74	56

Power Parameters of IEEE 802.11b/g

Test Software Version	Mtool 2.0.0.7		
Frequency	2412 MHz	2437 MHz	2462 MHz
IEEE 802.11b	84	99	87
IEEE 802.11g	63	89	70

For 5GHz Band

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	DOS		
Frequency	5745 MHz	5785 MHz	5825 MHz
MCS0/Nss1 VHT20	23	23	23

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	DOS	
Frequency	5755 MHz	5795 MHz
MCS0/Nss1 VHT40	23	23

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT80

Test Software Version	DOS
Frequency	5775 MHz
MCS0/Nss1 VHT80	23

Power Parameters of IEEE 802.11a

Test Software Version	DOS		
Frequency	5745 MHz	5785 MHz	5825 MHz
IEEE 802.11a	23	23	21

<For Beamforming Mode>

For 2.4GHz Band

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	Mtool 2.0.0.7		
Frequency	2412 MHz	2437 MHz	2462 MHz
MCS0/Nss1 VHT20	70	86	66

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	Mtool 2.0.0.7		
Frequency	2422 MHz	2437 MHz	2452 MHz
MCS0/Nss1 VHT40	64	70	70

For 5GHz Band

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT20

Test Software Version	DOS		
Frequency	5745 MHz	5785 MHz	5825 MHz
MCS0/Nss1 VHT20	20	20	20

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT40

Test Software Version	DOS	
Frequency	5755 MHz	5795 MHz
MCS0/Nss1 VHT40	20	20

Power Parameters of IEEE 802.11ac MCS0/Nss1 VHT80

Test Software Version	DOS
Frequency	5775 MHz
MCS0/Nss1 VHT80	20

3.10. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

For Conducted Mode:

The EUT was programmed to be in continuously transmitting mode.

For Radiated Mode:

During the test, the following programs under WIN XP were executed.

The program was executed as follows:

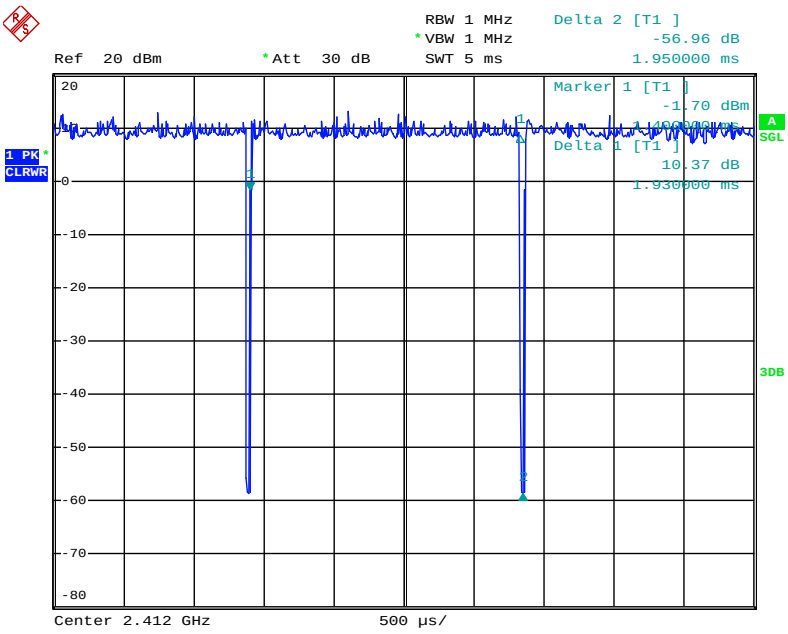
1. During the test, the EUT operation to normal function.
2. Executed command fixed test channel under DOS.
3. Executed "Lantest.exe " to link with the remote workstation to receive and transmit packet by WLAN ac Dongle and transmit duty cycle no less 98%

3.11. Duty Cycle

For non-beamforming mode:

For 2.4GHz Band:

IEEE 802.11ac MCS0/Nss1 VHT20



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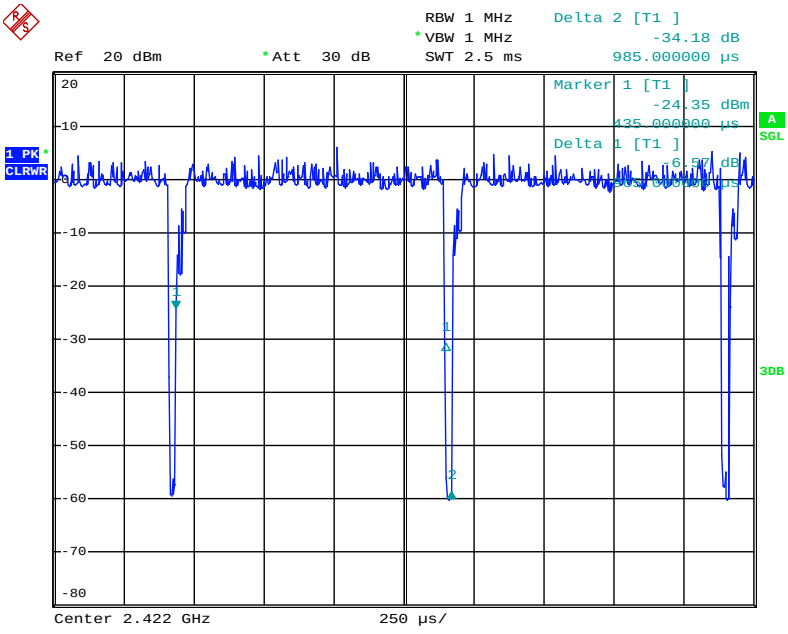
IEEE 802.11ac MCS0/Nss1 VHT40



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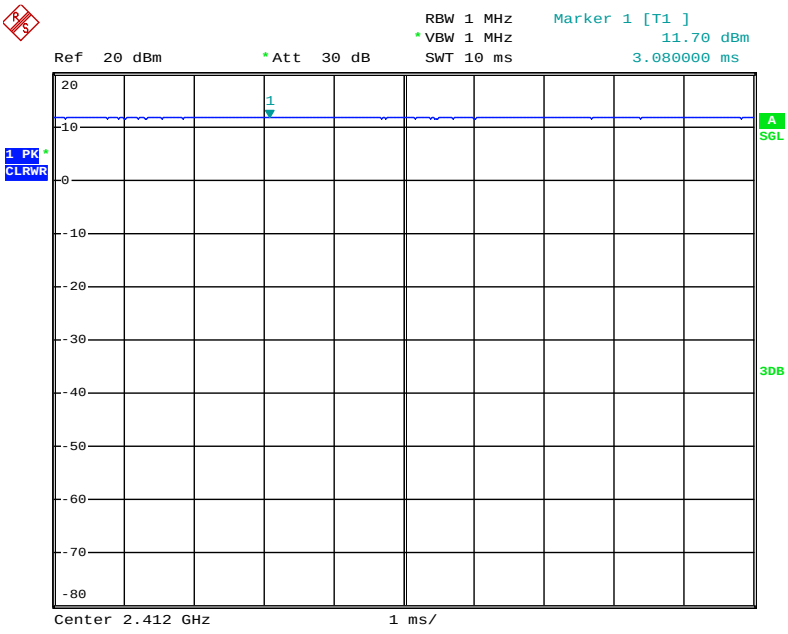
IEEE 802.11b



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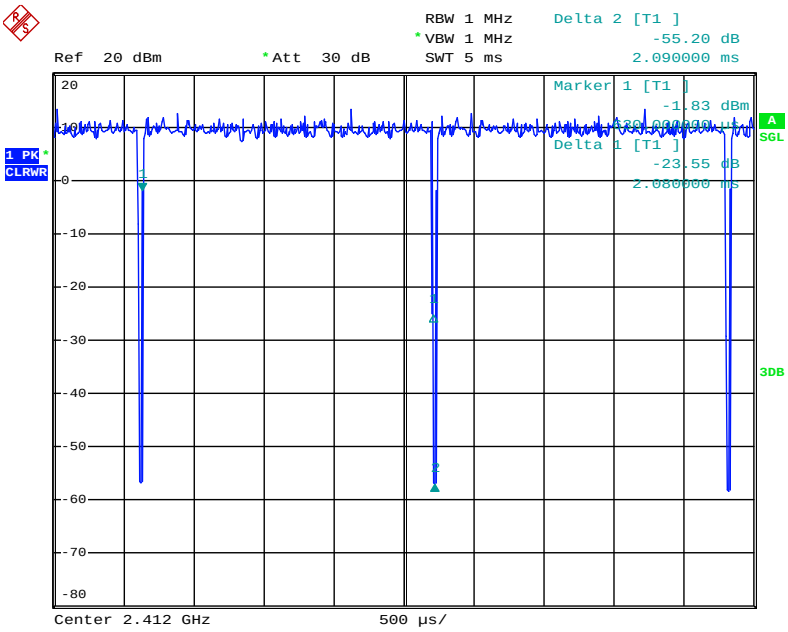
IEEE 802.11g



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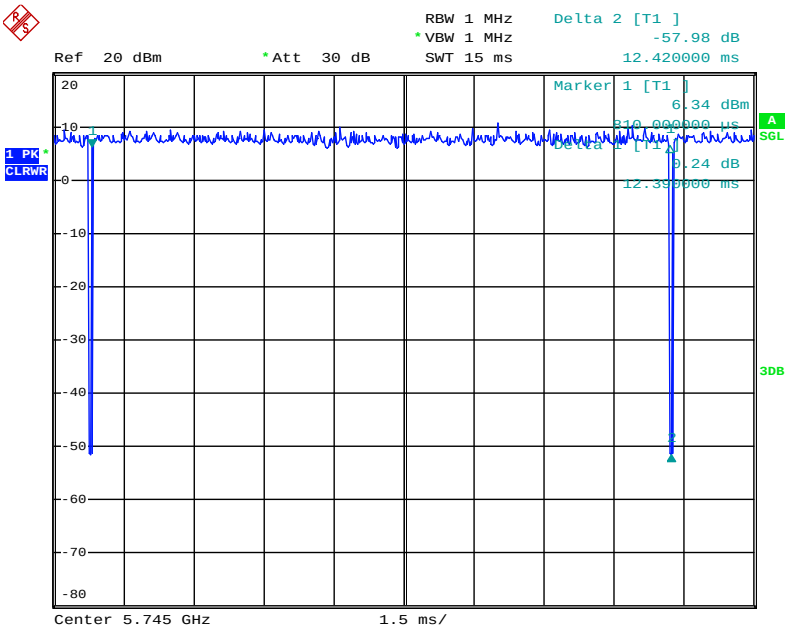
For 5GHz Band:

IEEE 802.11ac MCS0/Nss1 VHT20



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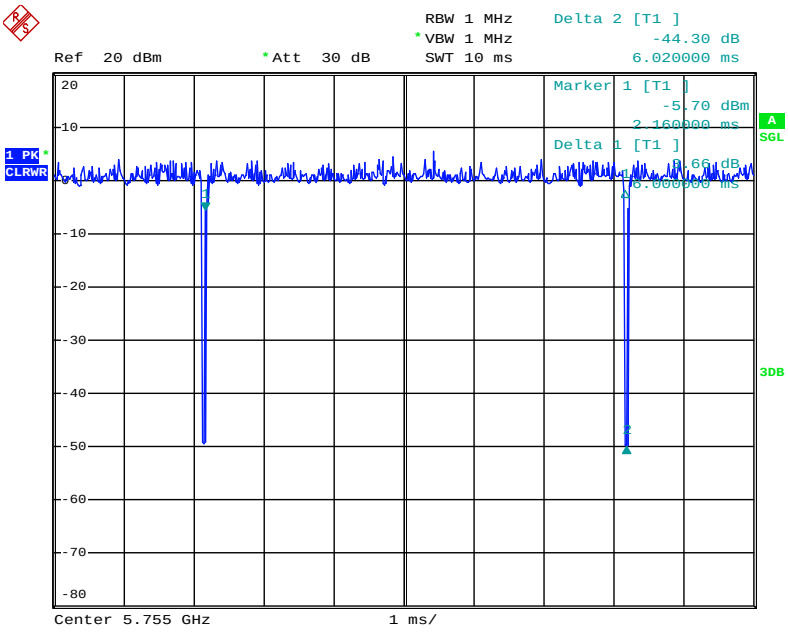
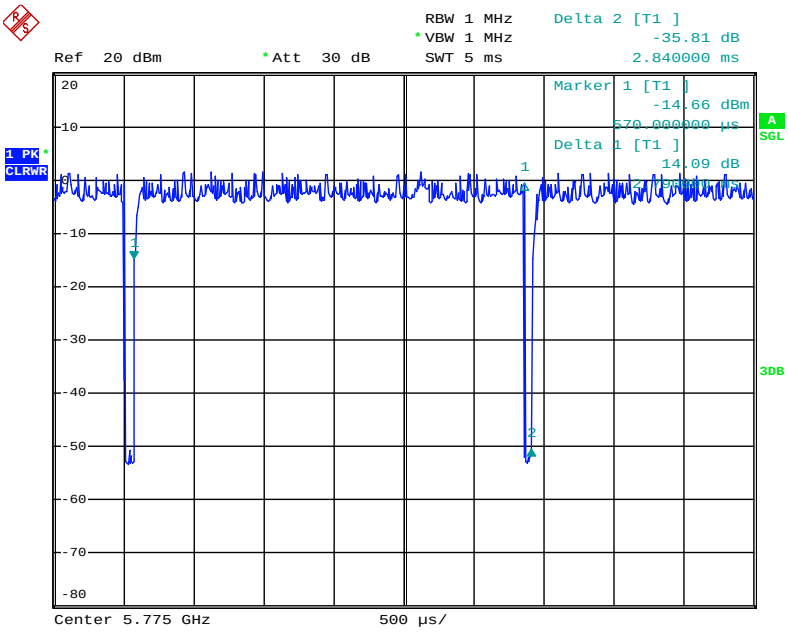
IEEE 802.11ac MCS0/Nss1 VHT40



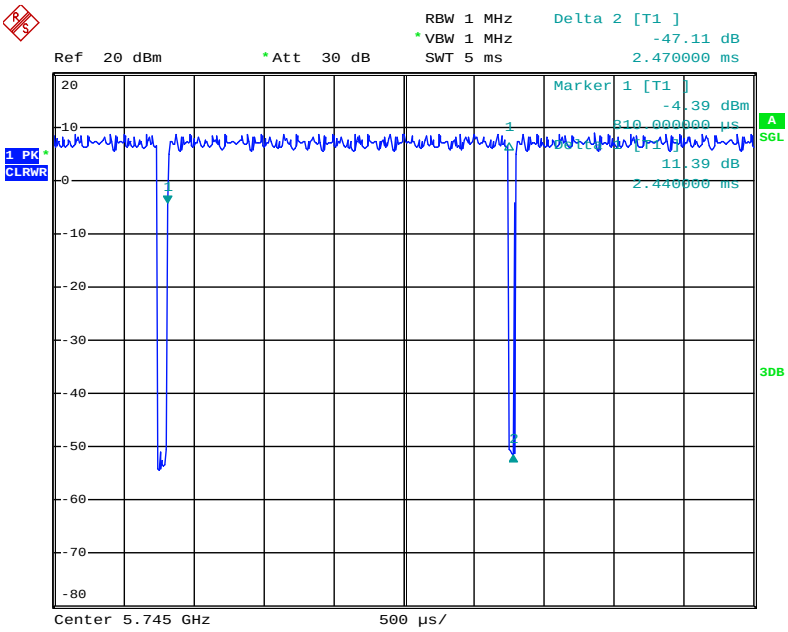
Date: 31.MAY.2014 06:39:41

IEEE 802.11ac MCS0/Nss1 VHT80



Date: 31.MAY.2014 06:38:35

IEEE 802.11a

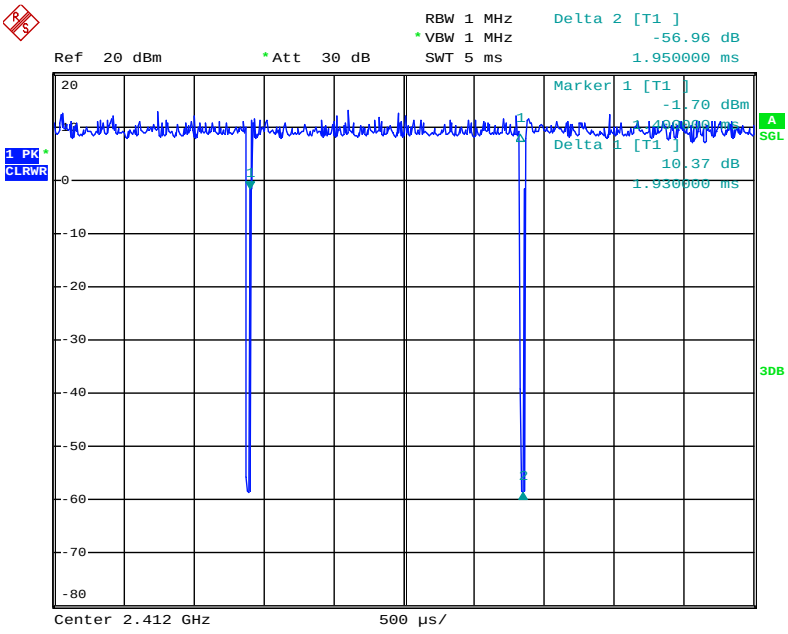


Date: 31.MAY.2014 06:42:04

For beamforming mode:

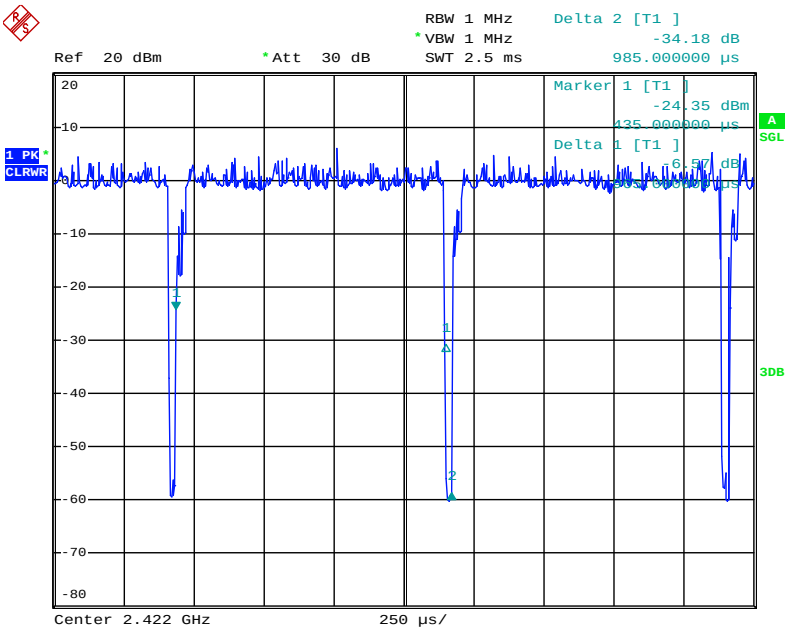
For 2.4GHz Band:

IEEE 802.11ac MCS0/Nss1 VHT20



Date: 31.MAY.2014 03:59:43

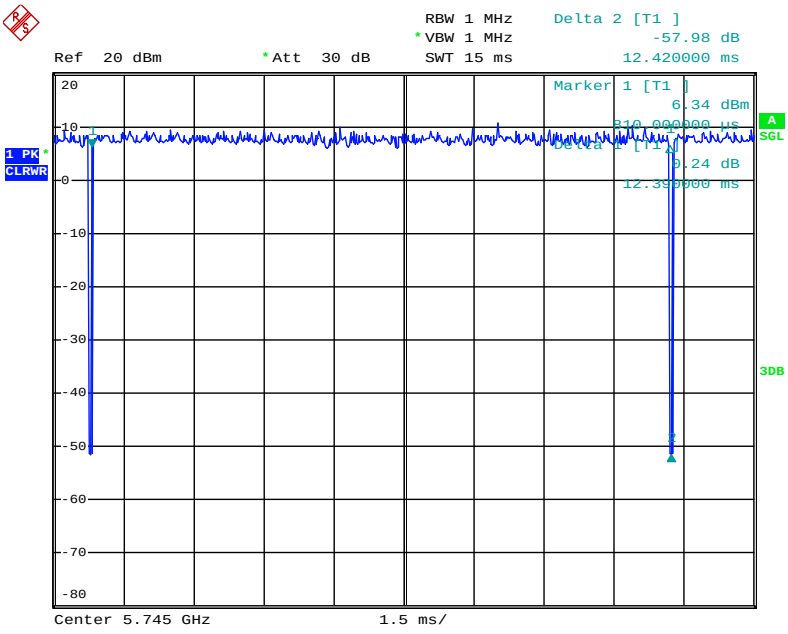
IEEE 802.11ac MCS0/Nss1 VHT40



Date: 31.MAY.2014 04:01:11

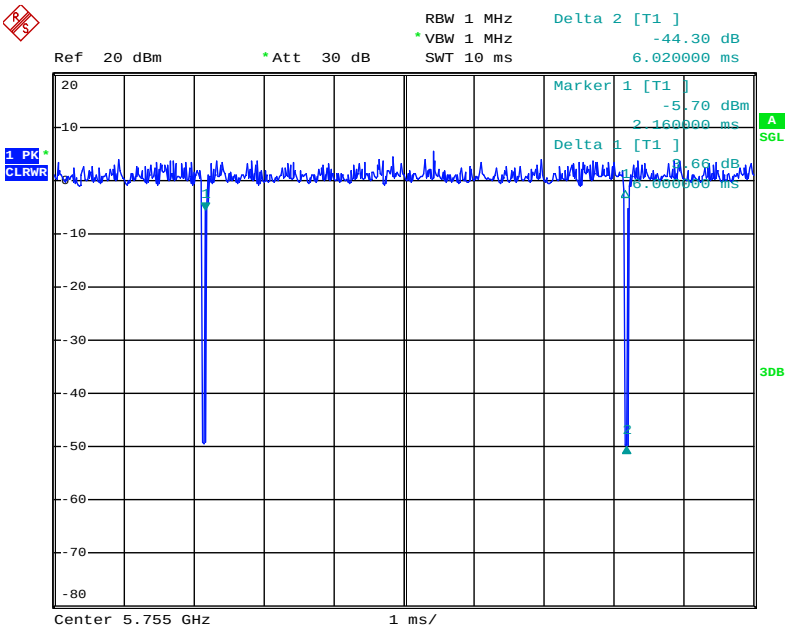
For 5GHz Band:

IEEE 802.11ac MCS0/Nss1 VHT20



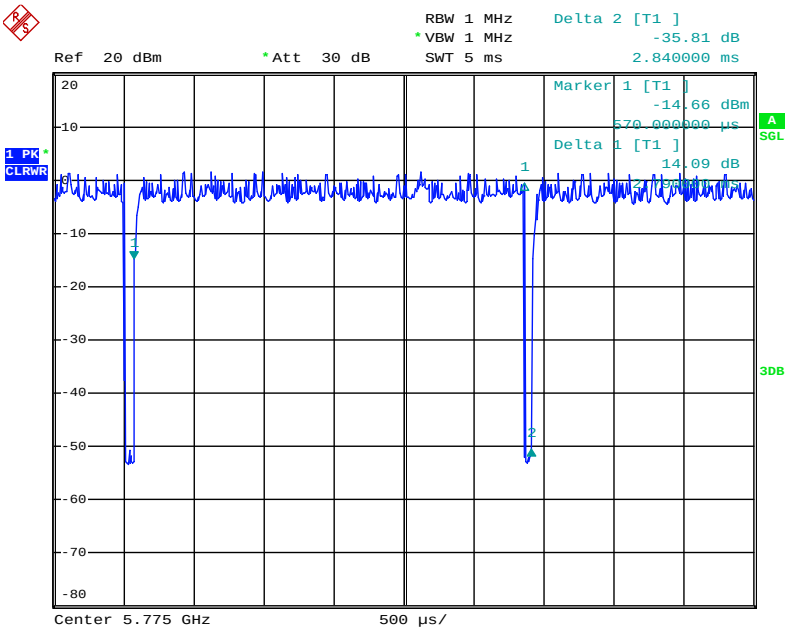
Date: 31.MAY.2014 06:40:54

IEEE 802.11ac MCS0/Nss1 VHT40



Date: 31.MAY.2014 06:39:41

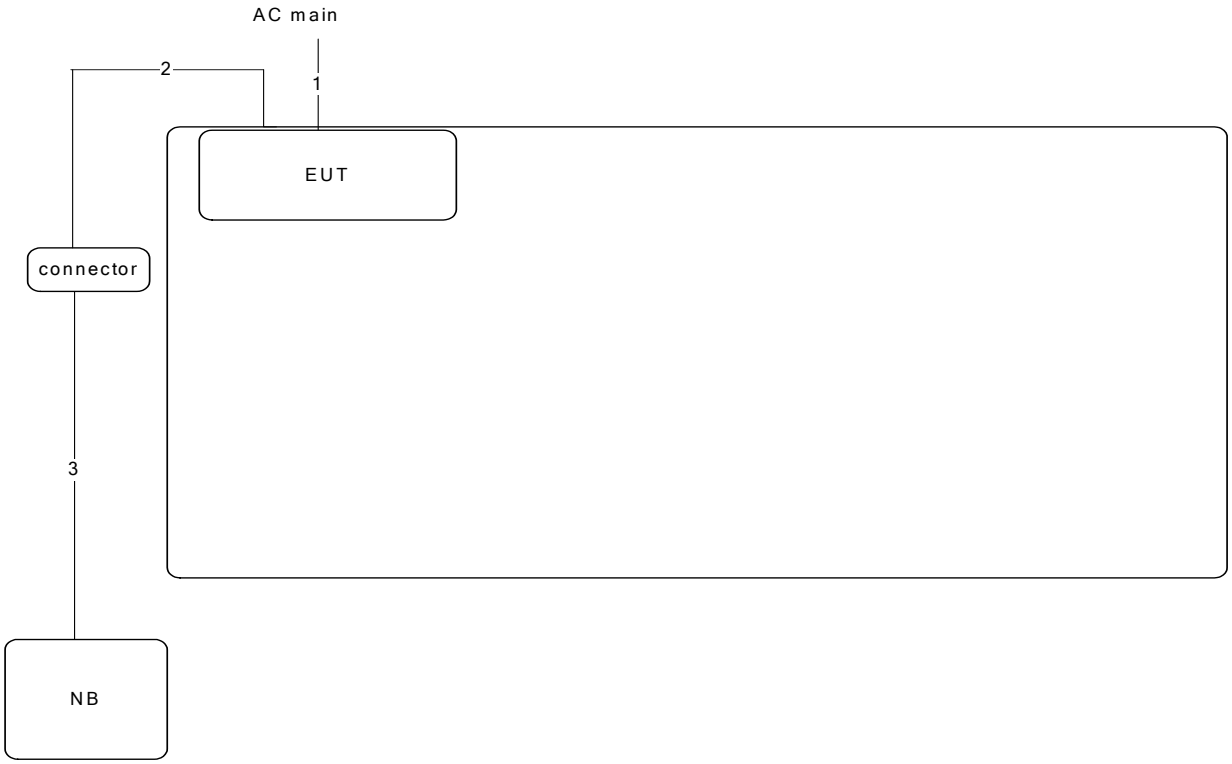
IEEE 802.11ac MCS0/Nss1 VHT80



Date: 31.MAY.2014 06:38:35

3.12. Test Configurations

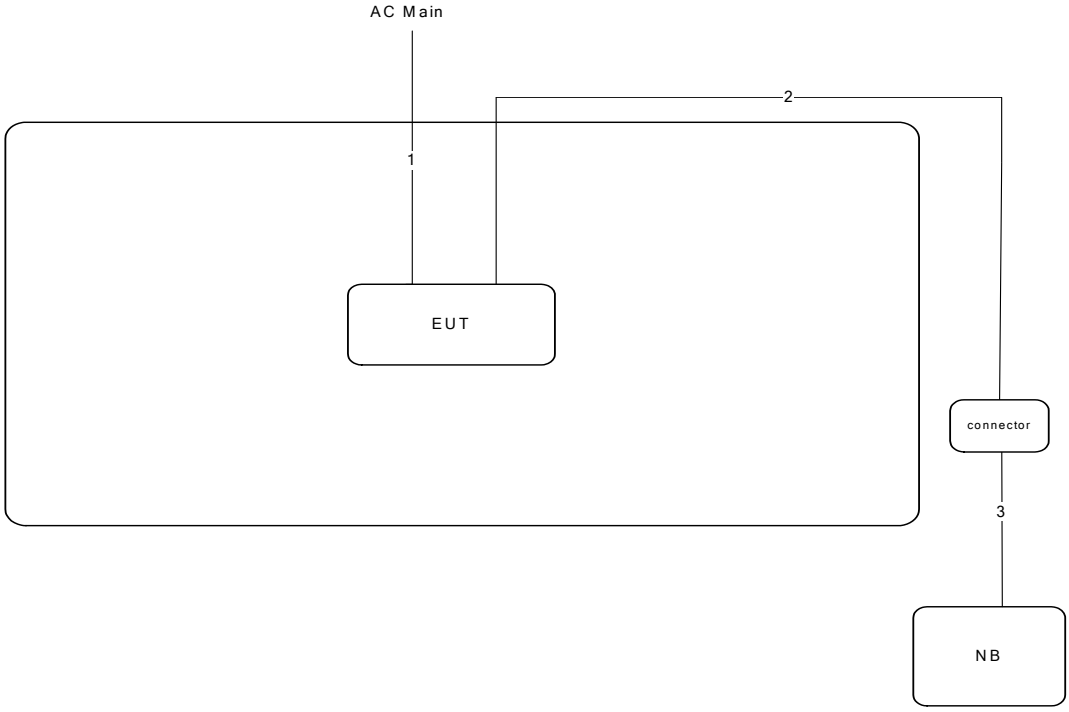
3.12.1. AC Power Line Conduction Emissions Test Configuration



Item	Connection	Shield	Length(m)
1	Power cable	No	2.3m
2	RJ-45 cable	Yes	1.5m
3	RJ-45 cable	No	10m

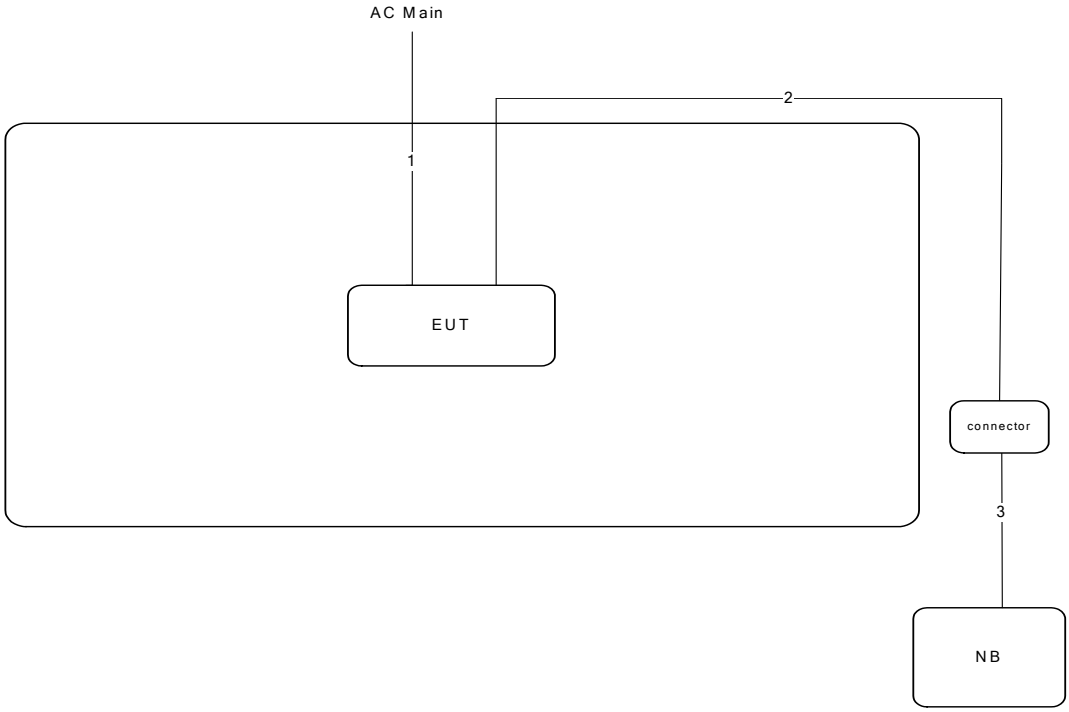
3.12.2. Radiation Emissions Test Configuration

Test Configuration: 30MHz~1GHz



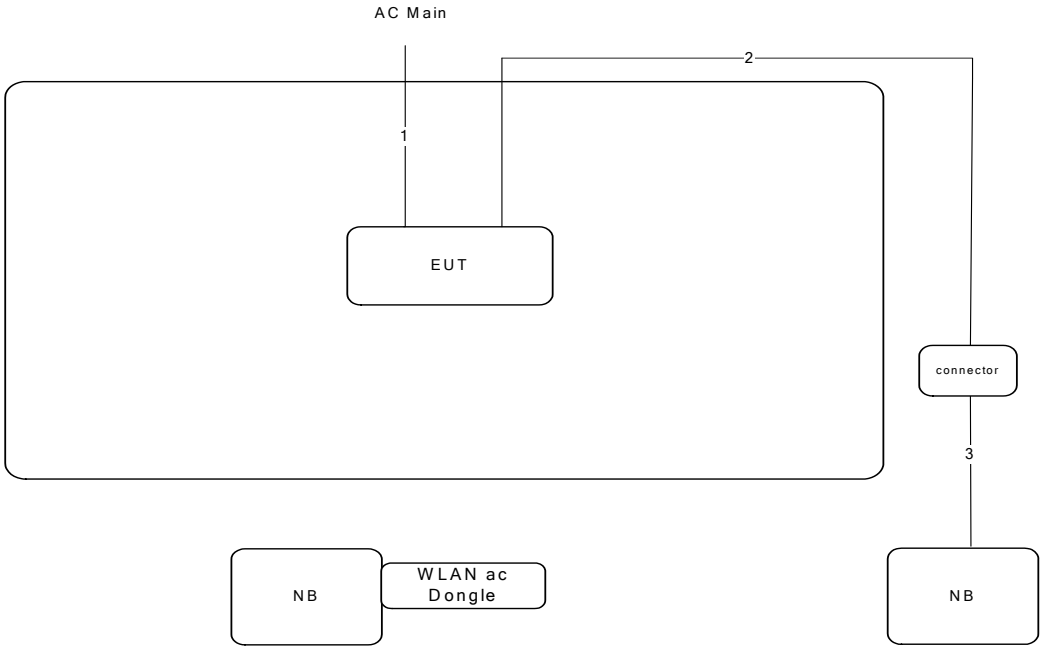
Item	Connection	Shielded	Length(m)
1	Power Cable	No	2.3m
2	RJ-45 Cable	No	10m
3	RJ-45 Cable	Yes	1.5m

Test Configuration: above 1GHz <For Non-Beamforming Mode>



Item	Connection	Shielded	Length(m)
1	Power Cable	No	2.3m
2	RJ-45 Cable	No	10m
3	RJ-45 Cable	Yes	1.5m

Test Configuration: above 1GHz <For Beamforming Mode>



Item	Connection	Shielded	Length(m)
1	Power Cable	No	2.3m
2	RJ-45 Cable	No	10m
3	RJ-45 Cable	Yes	1.5m

4. TEST RESULT

4.1. AC Power Line Conducted Emissions Measurement

4.1.1. Limit

For this product which is designed to be connected 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

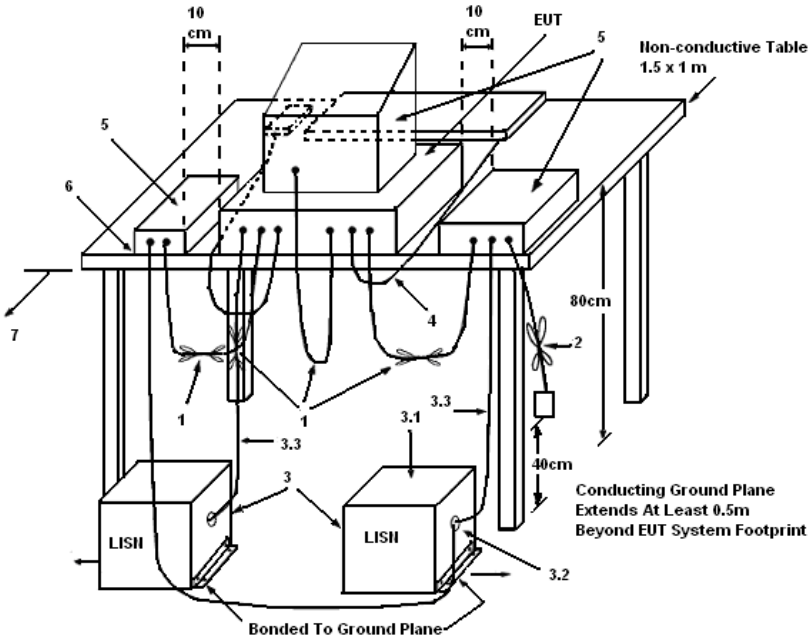
Please refer to section 5 of equipments list in this report. The following table is the setting of the receiver.

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

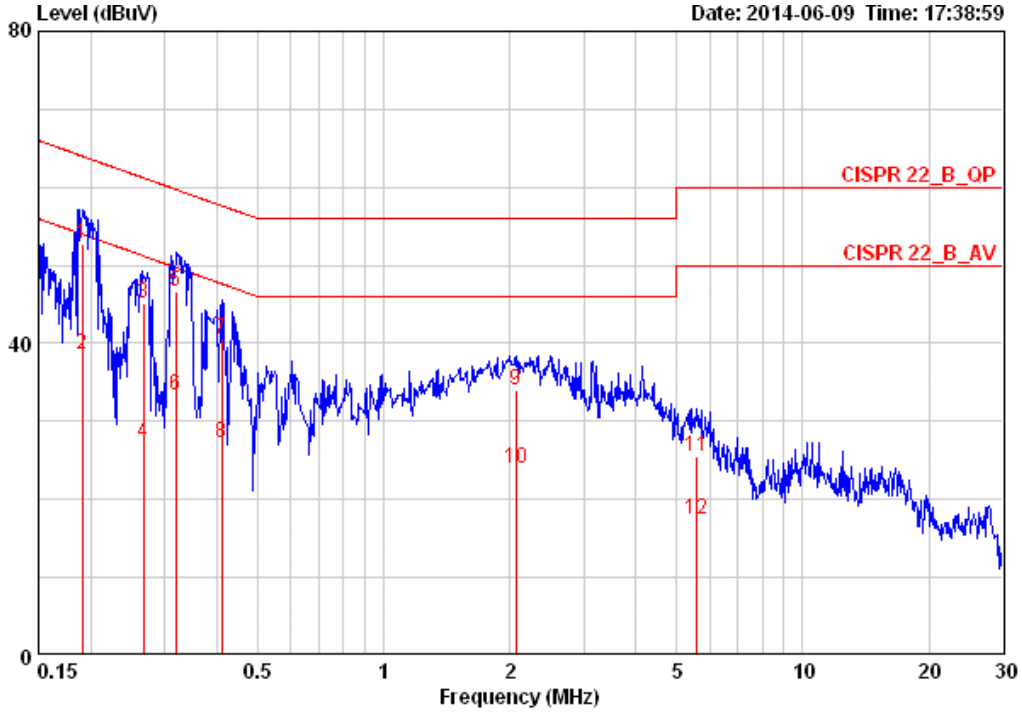
There is no deviation with the original standard.

4.1.6. EUT Operation during Test

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

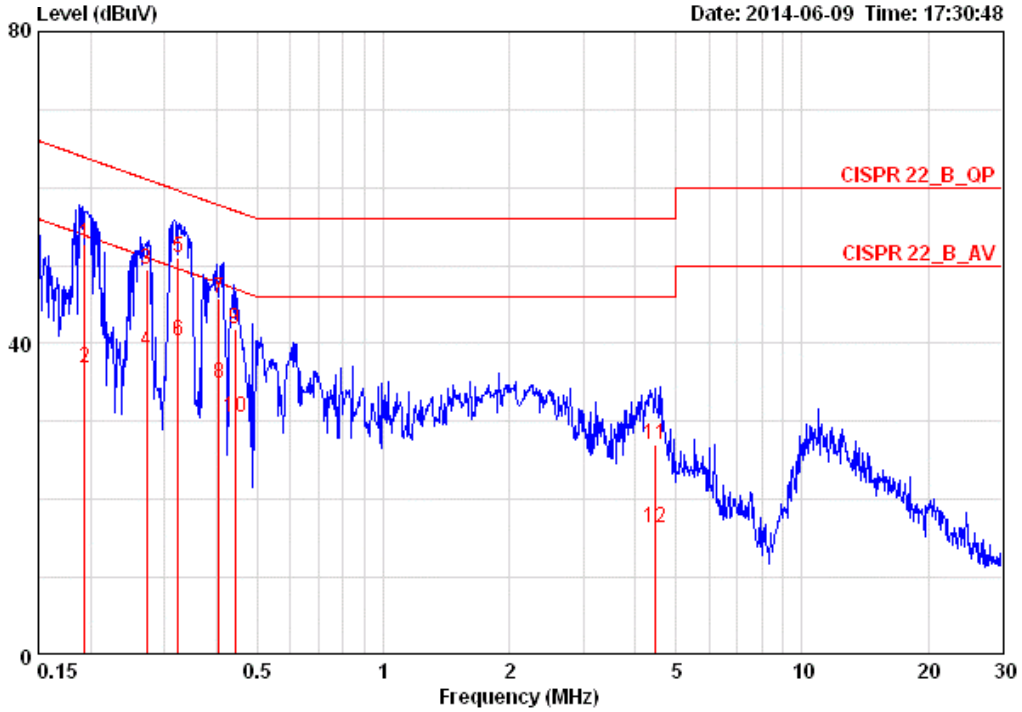
4.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	23°C	Humidity	58%
Test Engineer	Hank Huang	Phase	Line
Configuration	CTX	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	LISN Factor	Read Level	Cable Loss	Pol/Phase	Remark	Factor
	MHz	dBuV	dB	dBuV	dB	dBuV	dB			dB
1 @	0.19039	52.74	-11.28	64.02	0.08	52.46	0.20	LINE	QP	0.28
2 @	0.19039	38.48	-15.54	54.02	0.08	38.20	0.20	LINE	AVERAGE	0.28
3 @	0.26724	45.15	-16.05	61.20	0.08	44.87	0.20	LINE	QP	0.28
4	0.26724	27.28	-23.92	51.20	0.08	27.00	0.20	LINE	AVERAGE	0.28
5 @	0.31830	46.75	-13.00	59.75	0.08	46.47	0.20	LINE	QP	0.28
6	0.31830	33.44	-16.31	49.75	0.08	33.16	0.20	LINE	AVERAGE	0.28
7	0.41048	40.49	-17.15	57.64	0.08	40.21	0.20	LINE	QP	0.28
8	0.41048	27.14	-20.50	47.64	0.08	26.86	0.20	LINE	AVERAGE	0.28
9	2.066	34.08	-21.92	56.00	0.12	33.73	0.23	LINE	QP	0.35
10	2.066	23.89	-22.11	46.00	0.12	23.54	0.23	LINE	AVERAGE	0.35
11	5.594	25.58	-34.42	60.00	0.18	25.07	0.33	LINE	QP	0.51
12	5.594	17.49	-32.51	50.00	0.18	16.98	0.33	LINE	AVERAGE	0.51

Temperature	23°C	Humidity	58%
Test Engineer	Hank Huang	Phase	Neutral
Configuration	CTX	Test Mode	Mode 2



	Freq	Level	Over Limit	Limit Line	LISN Factor	Read Level	Cable Loss	Pol/Phase	Remark	Factor
	MHz	dBuV	dB	dBuV	dB	dBuV	dB			dB
1 @	0.19344	52.84	-11.05	63.89	0.08	52.56	0.20	NEUTRAL	QP	0.28
2	0.19344	36.94	-16.95	53.89	0.08	36.66	0.20	NEUTRAL	AVERAGE	0.28
3 @	0.27152	49.48	-11.59	61.07	0.08	49.20	0.20	NEUTRAL	QP	0.28
4 @	0.27152	39.00	-12.07	51.07	0.08	38.72	0.20	NEUTRAL	AVERAGE	0.28
5 @	0.32340	51.07	-8.55	59.62	0.09	50.78	0.20	NEUTRAL	QP	0.29
6 @	0.32340	40.25	-9.37	49.62	0.09	39.96	0.20	NEUTRAL	AVERAGE	0.29
7 @	0.40400	45.75	-12.02	57.77	0.09	45.46	0.20	NEUTRAL	QP	0.29
8 @	0.40400	34.95	-12.82	47.77	0.09	34.66	0.20	NEUTRAL	AVERAGE	0.29
9 @	0.44208	41.90	-15.12	57.02	0.09	41.61	0.20	NEUTRAL	QP	0.29
10	0.44208	30.44	-16.58	47.02	0.09	30.15	0.20	NEUTRAL	AVERAGE	0.29
11	4.454	26.95	-29.05	56.00	0.17	26.47	0.31	NEUTRAL	QP	0.48
12	4.454	16.26	-29.74	46.00	0.17	15.78	0.31	NEUTRAL	AVERAGE	0.48

Note:

Level = Read Level + LISN Factor + Cable Loss

4.2. Maximum Conducted Output Power Measurement

4.2.1. Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi. Systems operating in the 5725-5850 MHz band that are used exclusively for fixed, point-to-point operations may employ transmitting antennas with directional gain greater than 6 dBi without any corresponding reduction in transmitter output power.

4.2.2. Measuring Instruments and Setting

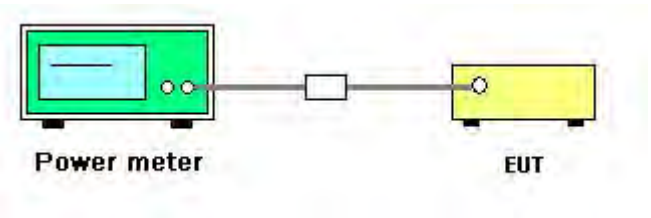
Please refer to section 5 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Detector	Average

4.2.3. Test Procedures

1. Test was performed in accordance with KDB 558074 D01 v03r02 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 9.2.3.2 Method AVGPM-G (Measurement using a gated RF average power meter).
2. Multiple antenna system was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
3. This procedure provides an alternative for determining the RMS output power using a broadband RF average power meter with a thermocouple detector.

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 Maximum Conducted Output Power

<For Non-Beamforming Mode>

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac
Test Data	May 31, 2014		

For 2.4GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	16.04	16.44	16.33	21.04	30.00	Complies
6	2437 MHz	23.12	22.87	22.92	27.74	30.00	Complies
11	2462 MHz	18.11	18.02	18.04	22.83	30.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
3	2422 MHz	13.09	13.63	13.42	18.16	30.00	Complies
6	2437 MHz	18.38	18.41	18.37	23.16	30.00	Complies
9	2452 MHz	14.49	14.52	14.67	19.33	30.00	Complies

For 5GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
149	5745 MHz	22.4	22	22.16	22.83	28.38	30.00	Complies
157	5785 MHz	22.8	22.06	22.35	22.22	28.39	30.00	Complies
165	5825 MHz	22.4	21.63	22.25	22.25	28.16	30.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
151	5755 MHz	22.87	22.34	22.93	23	28.81	30.00	Complies
159	5795 MHz	23.16	22.23	22.68	22.59	28.70	30.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
155	5775 MHz	22.49	21.99	22.43	22.21	28.31	30.00	Complies

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11a/b/g
Test Data	May 31, 2014		

Configuration IEEE 802.11b / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	21.39	21.65	21.69	26.35	30.00	Complies
6	2437 MHz	25.11	24.87	25.29	29.86	30.00	Complies
11	2462 MHz	22.18	22.12	22.33	26.98	30.00	Complies

Configuration IEEE 802.11g / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	17.56	16.88	17.24	22.01	30.00	Complies
6	2437 MHz	23.16	23.04	23.16	27.89	30.00	Complies
11	2462 MHz	18.94	18.98	19.15	23.80	30.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
149	5745 MHz	22.47	21.8	22.42	22.84	28.42	30.00	Complies
157	5785 MHz	22.63	21.86	22.06	22.25	28.23	30.00	Complies
165	5825 MHz	21.2	20.78	21.16	21.00	27.06	30.00	Complies

<For Beamforming Mode>

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac
Test Data	May 31, 2014		

For 2.4GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	18.52	18.62	18.84	23.43	27.57	Complies
6	2437 MHz	22.47	22.39	22.68	27.29	27.57	Complies
11	2462 MHz	18.05	17.97	18.05	22.79	27.57	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 8.43dBi >6dBi,So Power Limit =30-(8.43-6)=27.57dBm

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Conducted Power (dBm)				Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Total		
3	2422 MHz	16.53	16.54	16.66	21.35	27.57	Complies
6	2437 MHz	17.36	17.52	17.63	22.28	27.57	Complies
9	2452 MHz	17.62	17.55	17.88	22.46	27.57	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 8.43dBi >6dBi,So Power Limit =30-(8.43-6)=27.57dBm

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac
Test Data	May 31, 2014		

For 5GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
149	5745 MHz	20.06	19.82	20.15	20.17	26.07	26.69	Complies
157	5785 MHz	19.97	19.88	20.14	20.21	26.07	26.69	Complies
165	5825 MHz	19.96	19.94	20.08	20.15	26.05	26.69	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 9.31dBi >6dBi,So Power Limit =30-(9.31-6)=26.69dBm

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
151	5755 MHz	20.04	19.83	20.29	20.05	26.08	26.69	Complies
159	5795 MHz	20.12	19.98	20.24	20.15	26.14	26.69	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 9.31dBi >6dBi,So Power Limit =30-(9.31-6)=26.69dBm

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Conducted Power (dBm)					Max. Limit (dBm)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
155	5775 MHz	20.01	19.75	20.21	20.26	26.08	26.69	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 9.31dBi >6dBi,So Power Limit =30-(9.31-6)=26.69dBm

4.3. Power Spectral Density Measurement

4.3.1. Limit

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission.

4.3.2. Measuring Instruments and Setting

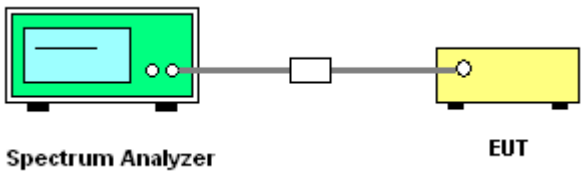
Please refer to section 5 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	Set the span to 1.5 times the DTS channel bandwidth.
RBW	3 kHz ≤ RBW ≤ 100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto couple

4.3.3. Test Procedures

1. Test was performed in accordance with KDB 558074 D01 v03r02 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 10.2 Method PKPSD (peak PSD) and KDB 662911 D01 v02r01 section In-Band Power Spectral Density (PSD) Measurements option (b) Measure and sum spectral maximal across the outputs.
2. Use this procedure when the maximum conducted output power in the fundamental emission is used to demonstrate compliance. The EUT must be configured to transmit continuously at full power over the measurement duration.
3. Ensure that the number of measurement points in the sweep ≥ 2 x span/RBW (use of a greater number of measurement points than this minimum requirement is recommended).
4. Use the peak marker function to determine the maximum level in any 3 kHz band segment within the fundamental EBW.
5. The resulting PSD level must be ≤ 8 dBm.

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 Power Spectral Density

<For Non-Beamforming Mode>

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac

For 2.4GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	-9.81	-9.07	-10.04	-4.85	8.00	Complies
6	2437 MHz	-3.38	-3.41	-2.95	1.53	8.00	Complies
11	2462 MHz	-7.96	-8.26	-8.72	-3.53	8.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
3	2422 MHz	-15.73	-15.07	-16.00	-10.81	8.00	Complies
6	2437 MHz	-10.22	-10.80	-10.31	-5.66	8.00	Complies
9	2452 MHz	-13.85	-12.83	-15.03	-9.04	8.00	Complies

For 5GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
149	5745 MHz	-2.89	-2.95	-3.67	-0.99	3.52	8.00	Complies
157	5785 MHz	-3.70	-3.12	-4.51	-3.13	2.44	8.00	Complies
165	5825 MHz	-4.15	-3.04	-3.81	-3.38	2.45	8.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
151	5755 MHz	-6.84	-5.60	-6.17	-3.81	0.57	8.00	Complies
159	5795 MHz	-5.75	-5.47	-5.98	-3.38	1.01	8.00	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
155	5775 MHz	-9.00	-5.45	-9.54	-5.01	-0.77	8.00	Complies

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11a/b/g

Configuration IEEE 802.11b / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	-2.20	-2.36	-1.92	2.62	8.00	Complies
6	2437 MHz	2.30	1.68	1.60	6.64	8.00	Complies
11	2462 MHz	-1.29	-1.15	-0.74	3.72	8.00	Complies

Configuration IEEE 802.11g / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	-8.73	-7.61	-8.62	-3.52	8.00	Complies
6	2437 MHz	-2.42	-2.66	-2.87	2.13	8.00	Complies
11	2462 MHz	-6.12	-7.59	-6.75	-2.01	8.00	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
149	5745 MHz	-5.03	-2.88	-6.01	-3.44	1.85	8.00	Complies
157	5785 MHz	-5.39	-3.83	-4.90	-3.30	1.74	8.00	Complies
165	5825 MHz	-6.87	-6.99	-6.69	-2.64	0.66	8.00	Complies

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

For plots, only the channel with worse result was shown.

<For Beamforming Mode>

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac

For 2.4GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
1	2412 MHz	-6.90	-5.60	-7.39	-1.79	5.57	Complies
6	2437 MHz	-2.25	-3.79	-3.92	1.52	5.57	Complies
11	2462 MHz	-6.59	-8.21	-8.10	-2.80	5.57	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 8.43dBi >6dBi,So Power Density Limit =8-(8.43-6)=5.57dBm/3kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	Power Density (dBm/3kHz)				Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Total		
3	2422 MHz	-12.47	-11.92	-13.73	-7.87	5.57	Complies
6	2437 MHz	-11.15	-10.05	-10.72	-5.85	5.57	Complies
9	2452 MHz	-11.88	-9.54	-10.20	-5.66	5.57	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 8.43dBi >6dBi,So Power Density Limit =8-(8.43-6)=5.57dBm/3kHz

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac

For 5GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
149	5745 MHz	-5.67	-6.28	-5.89	-6.03	0.06	4.69	Complies
157	5785 MHz	-5.96	-6.54	-6.13	-6.35	-0.22	4.69	Complies
165	5825 MHz	-6.49	-5.12	-6.66	-5.95	0.01	4.69	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 9.31dBi >6dBi,So Power Density Limit =8-(9.31-6)=4.69dBm/3kHz

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
151	5755 MHz	-8.18	-9.80	-8.54	-9.02	-2.82	4.69	Complies
159	5795 MHz	-9.07	-8.18	-8.11	-8.96	-2.54	4.69	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 9.31dBi >6dBi,So Power Density Limit =8-(9.31-6)=4.69dBm/3kHz

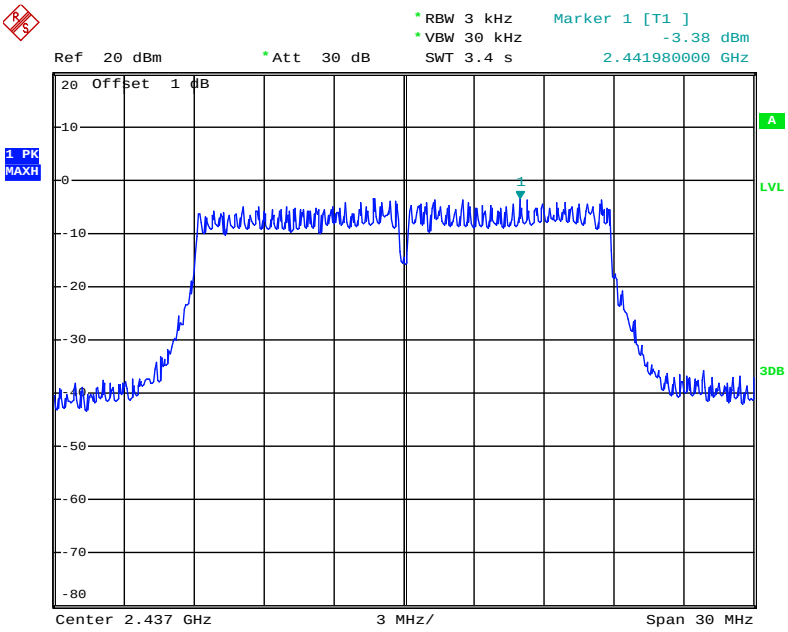
Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	Power Density (dBm/3kHz)					Power Density Limit (dBm/3kHz)	Result
		Chain 1	Chain 2	Chain 3	Chain 4	Total		
155	5775 MHz	-11.41	-9.36	-7.64	-8.48	-2.99	4.69	Complies

Note: $Directional\ gain = G_{ANT} + 10\log(N_{ANT}/N_{SS})$ = 9.31dBi >6dBi,So Power Density Limit =8-(9.31-6)=4.69dBm/3kHz

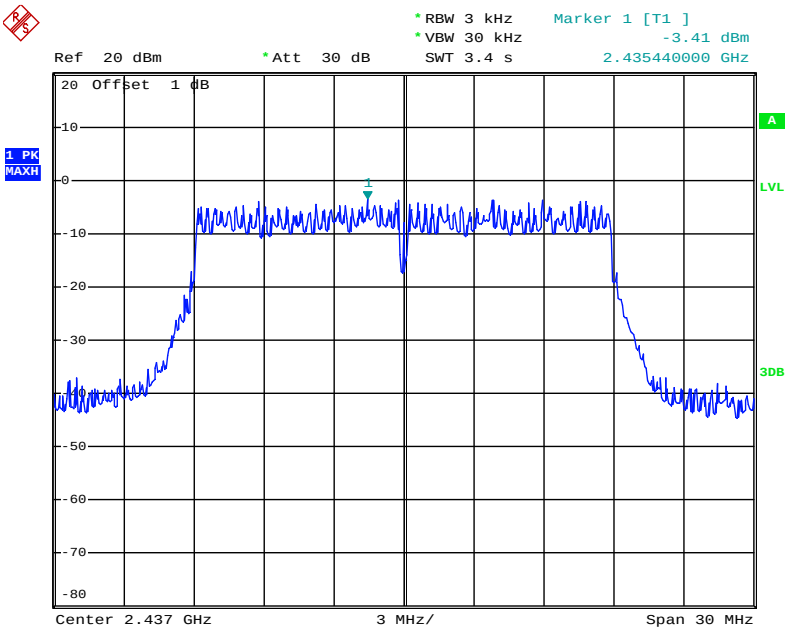
<For Non-Beamforming Mode>

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



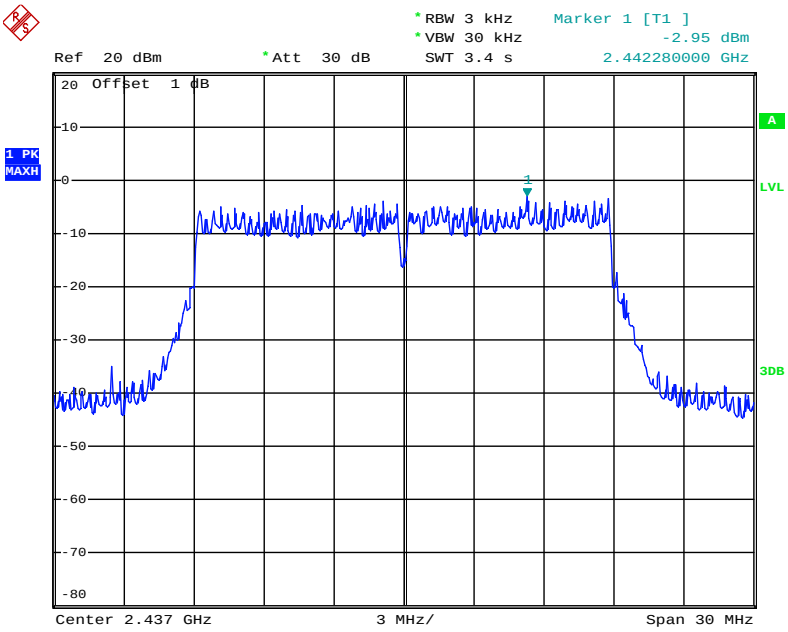
Date: 31.MAY.2014 04:42:24

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



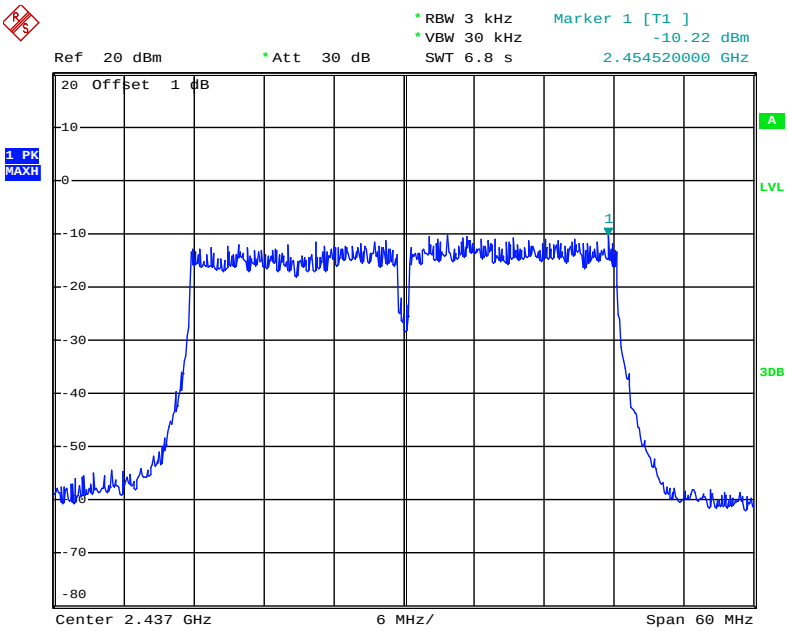
Date: 31.MAY.2014 04:41:21

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 3



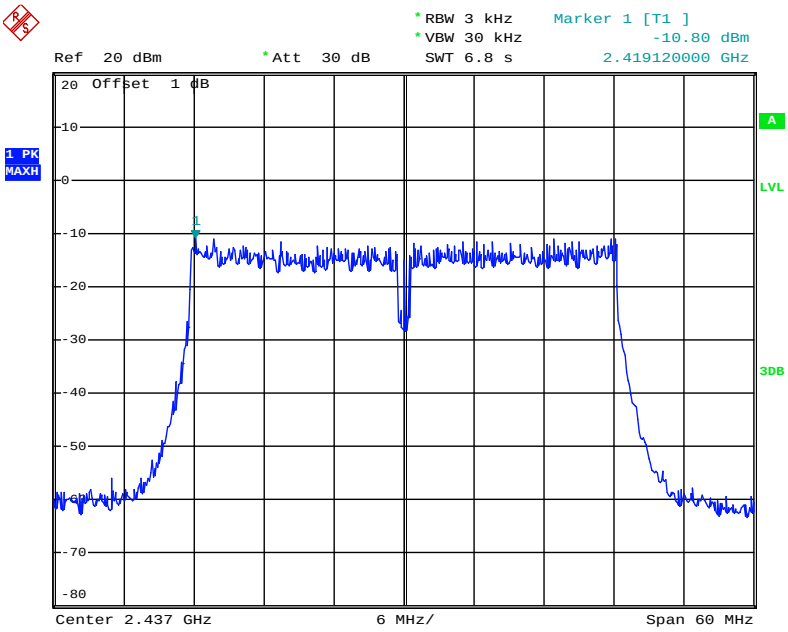
Date: 31.MAY.2014 04:40:29

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 1



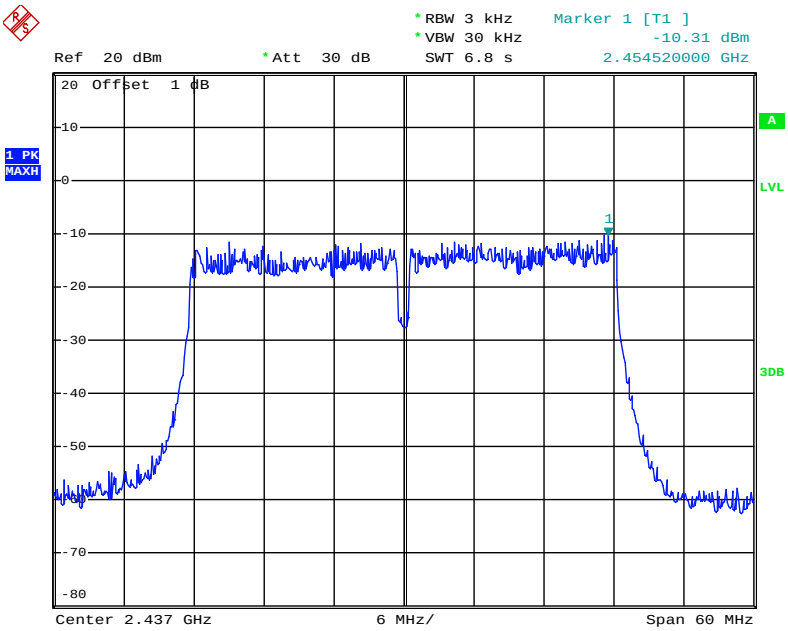
Date: 31.MAY.2014 04:50:55

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 2



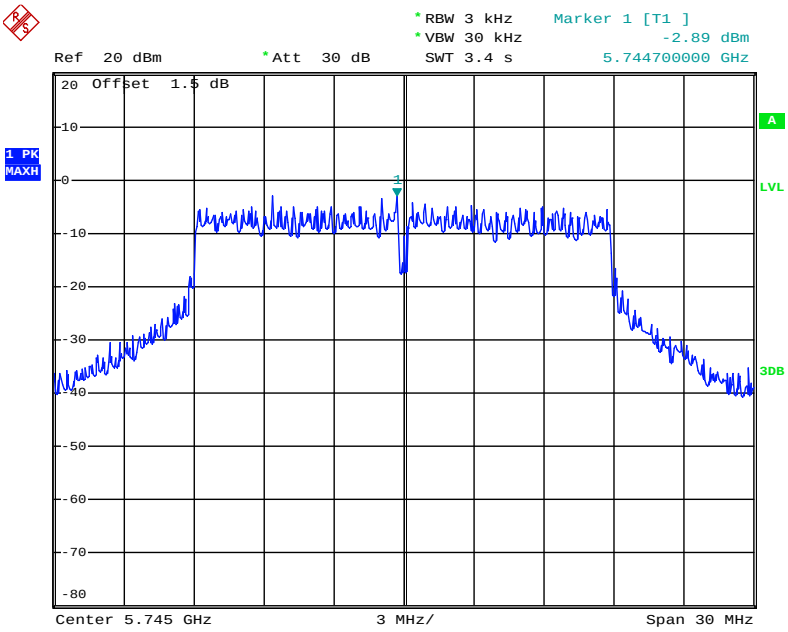
Date: 31.MAY.2014 04:49:47

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2437 MHz / Chain 3



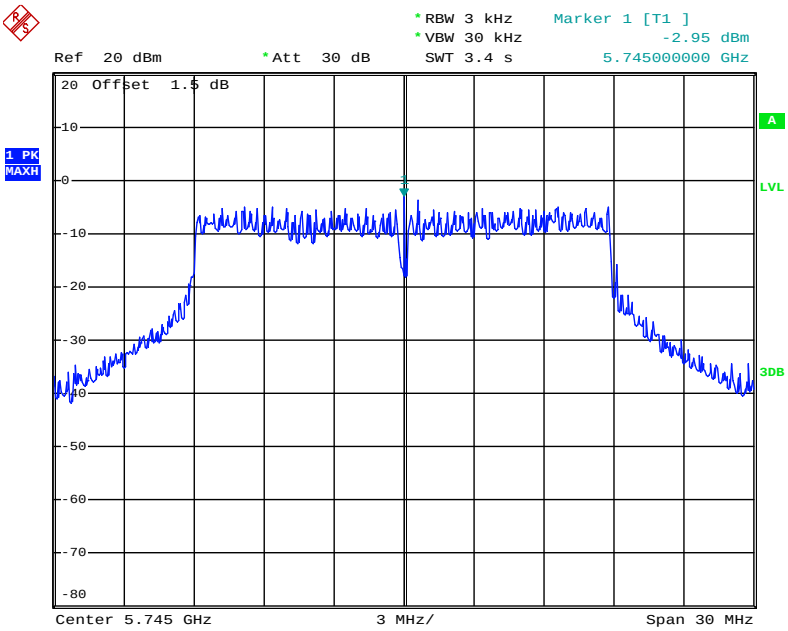
Date: 31.MAY.2014 04:51:45

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 1



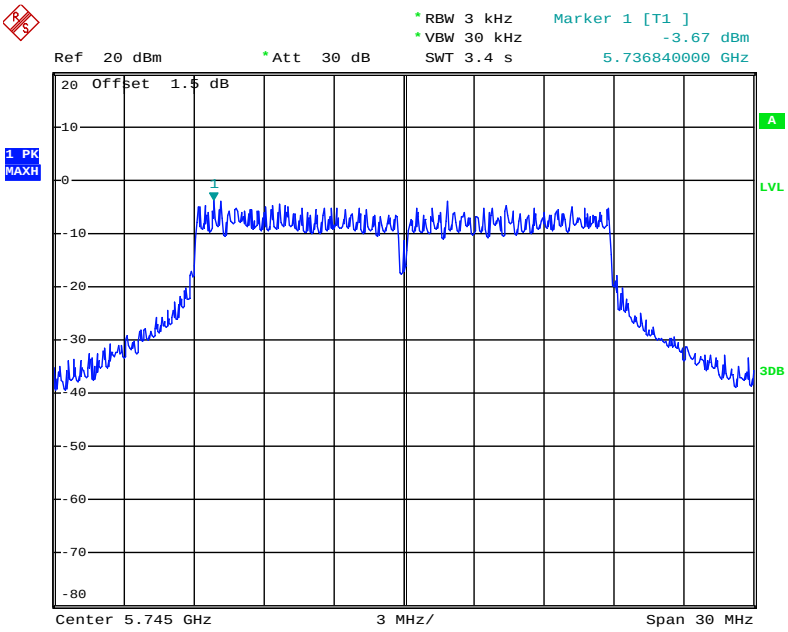
Date: 31.MAY.2014 07:24:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 2



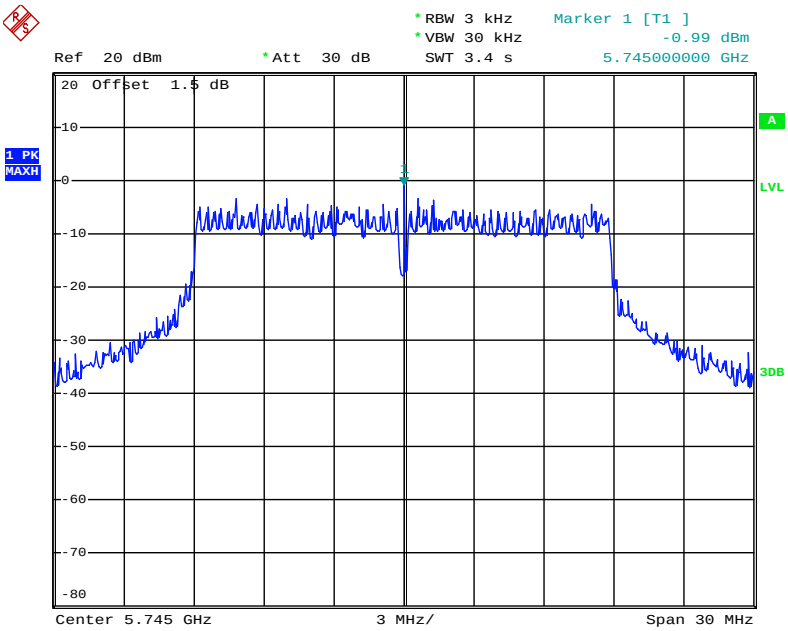
Date: 31.MAY.2014 07:23:31

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 3



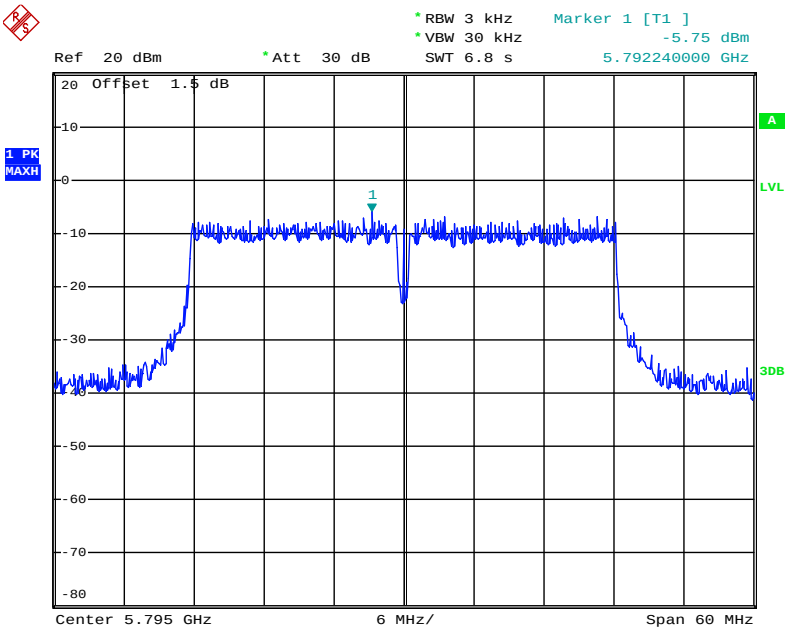
Date: 31.MAY.2014 07:22:39

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 4



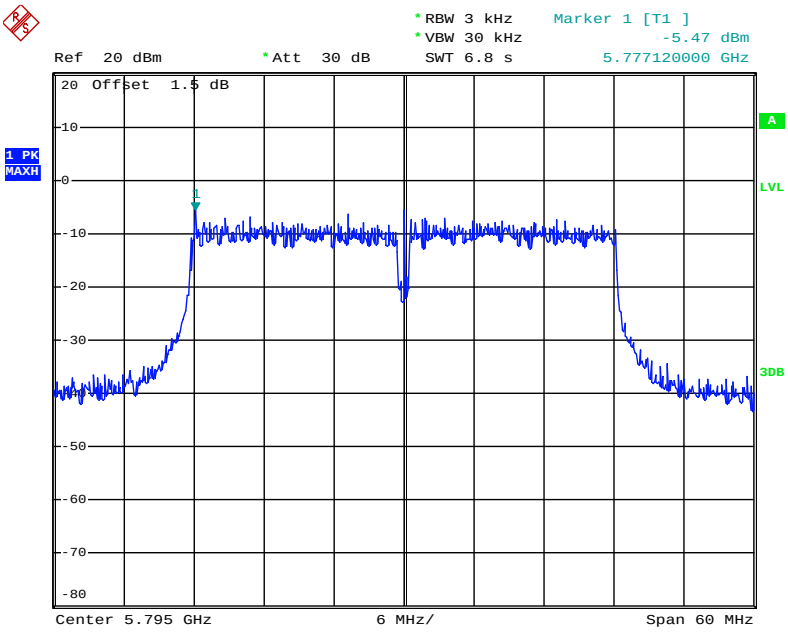
Date: 31.MAY.2014 07:21:47

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 1



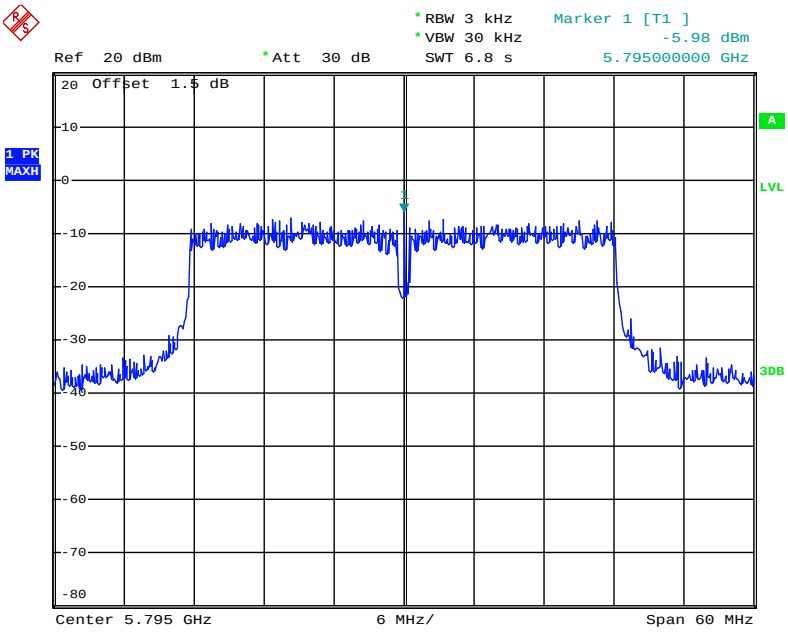
Date: 31.MAY.2014 07:35:12

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 2



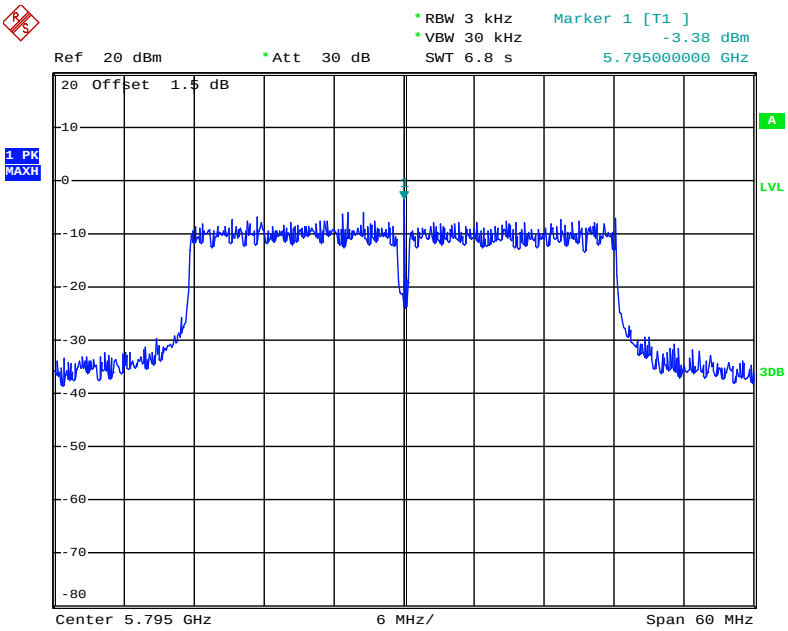
Date: 31.MAY.2014 07:34:30

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 3



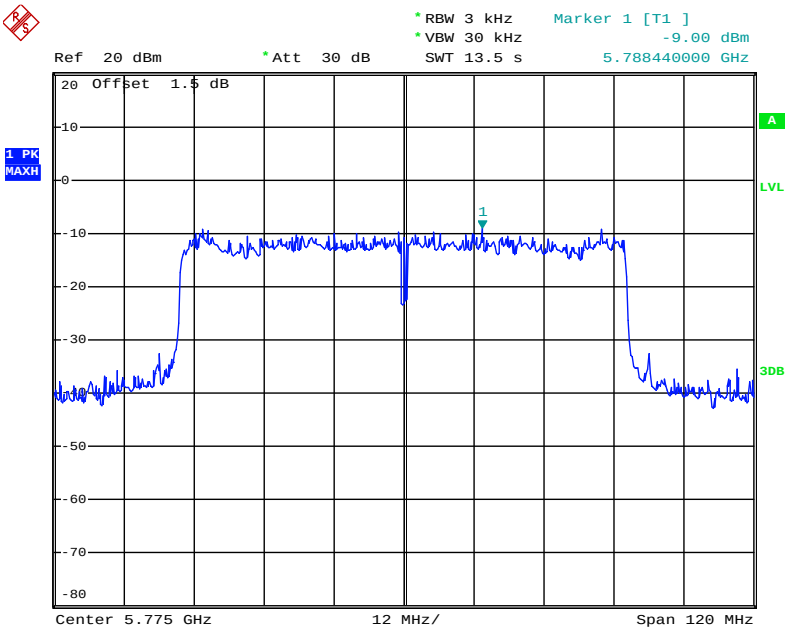
Date: 31.MAY.2014 07:33:44

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 4



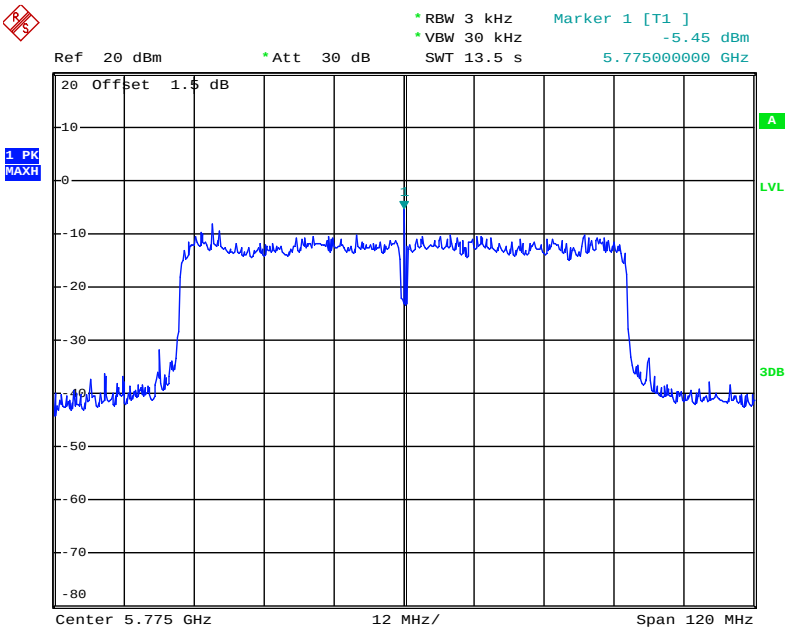
Date: 31.MAY.2014 07:33:09

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 1



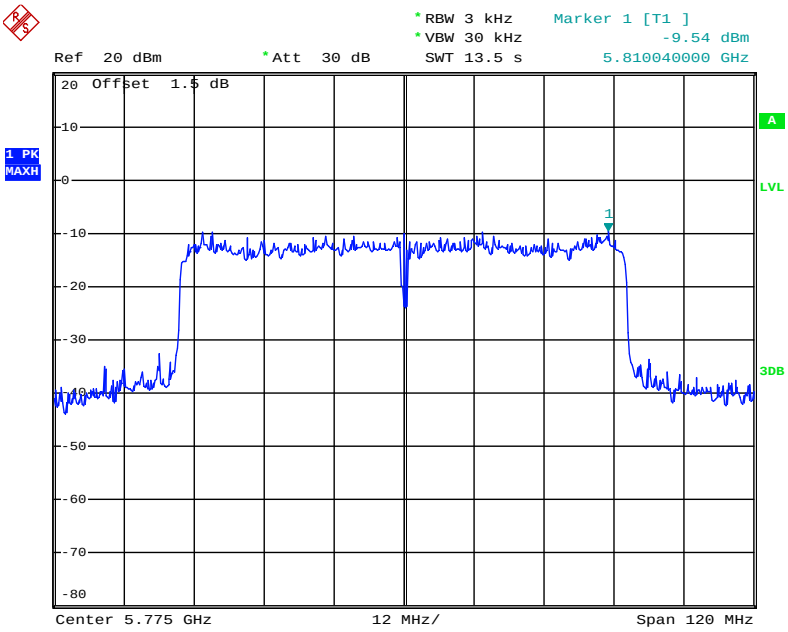
Date: 31.MAY.2014 07:36:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 2



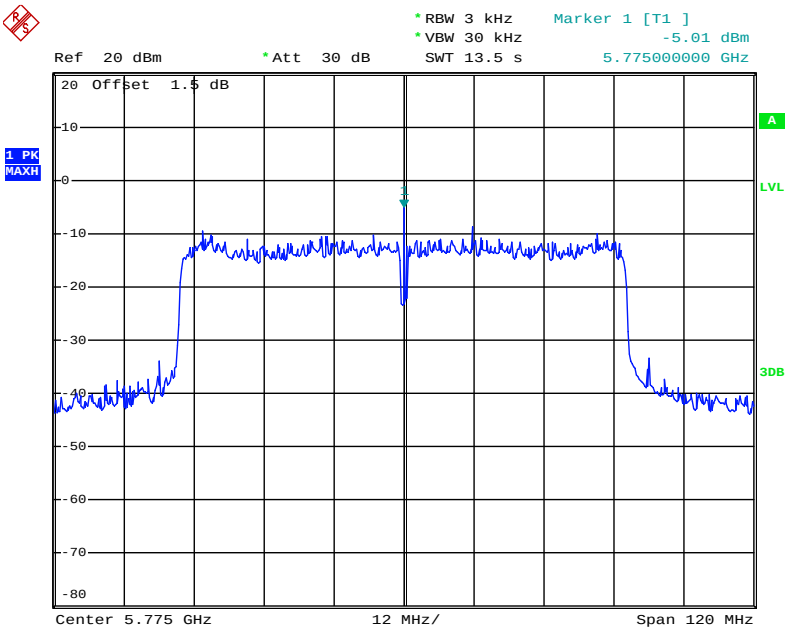
Date: 31.MAY.2014 07:37:08

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 3



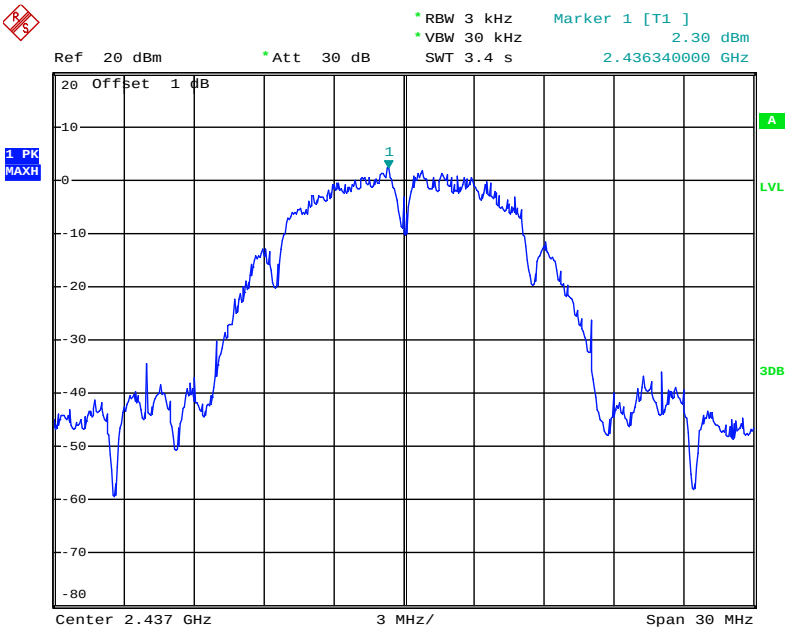
Date: 31.MAY.2014 07:37:58

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 4



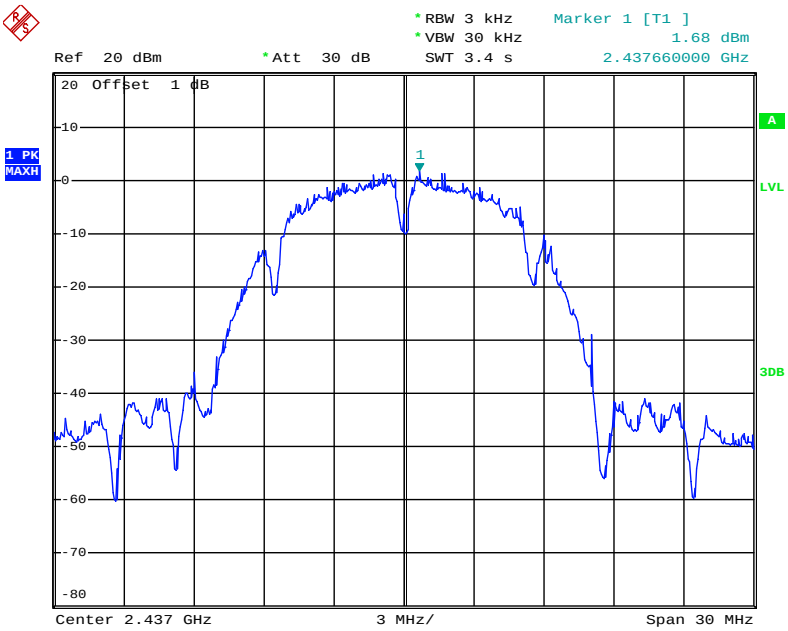
Date: 31.MAY.2014 07:38:41

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 1



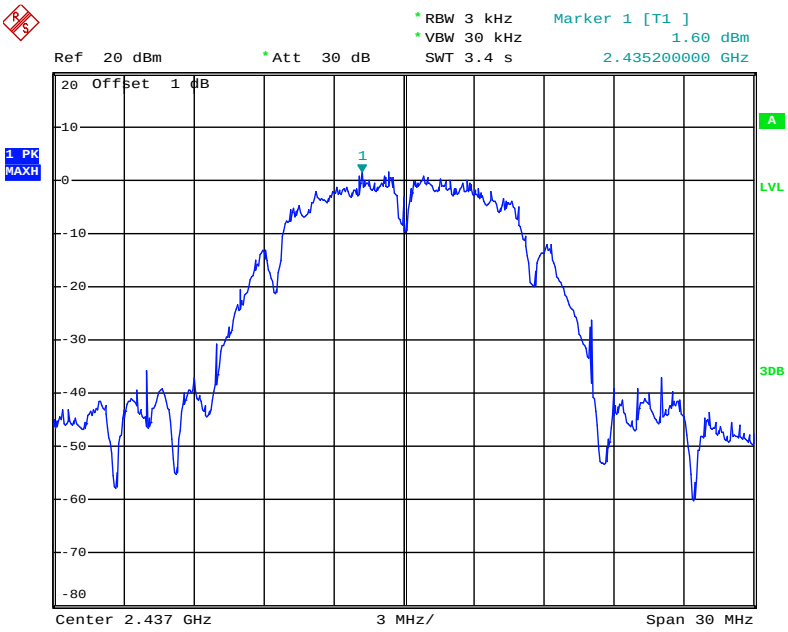
Date: 31.MAY.2014 04:11:51

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 2



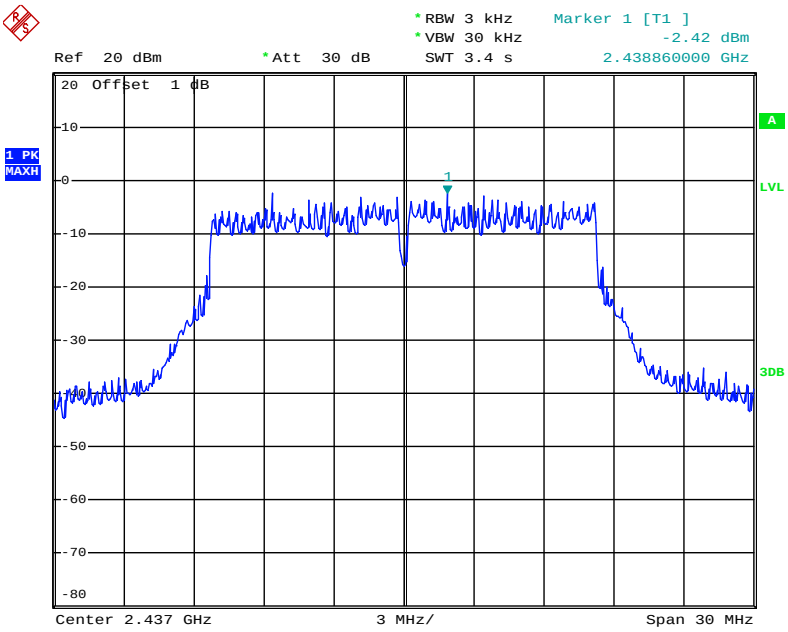
Date: 31.MAY.2014 04:10:39

Power Density Plot on Configuration IEEE 802.11b / 2437 MHz / Chain 3



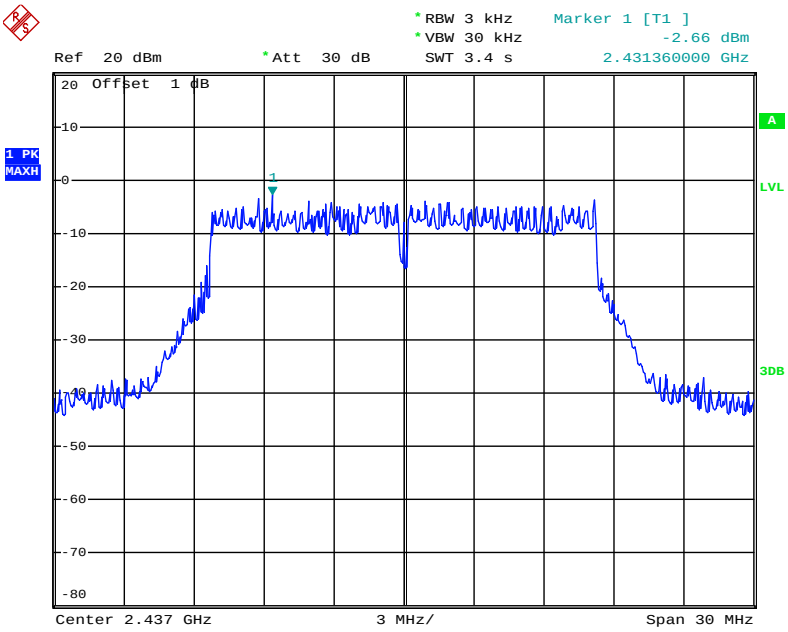
Date: 31.MAY.2014 04:09:40

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 1



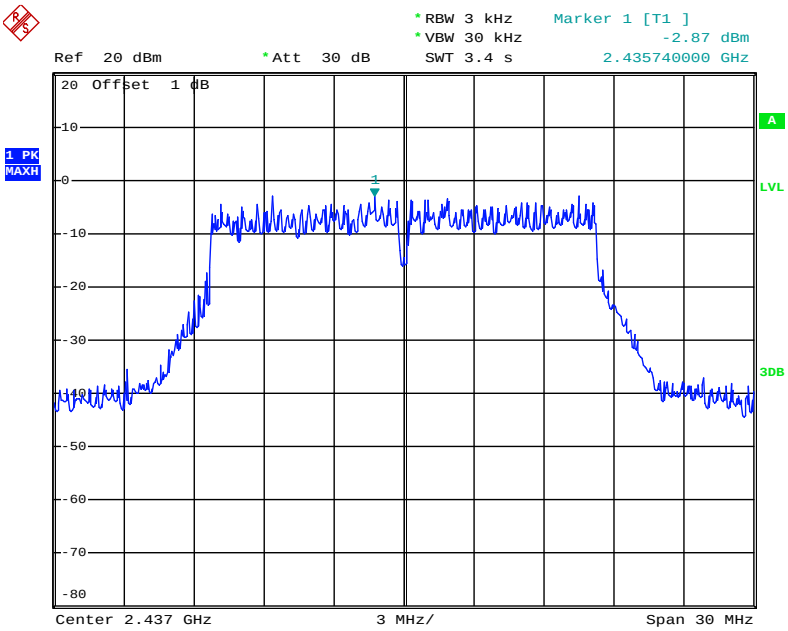
Date: 31.MAY.2014 04:31:02

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 2



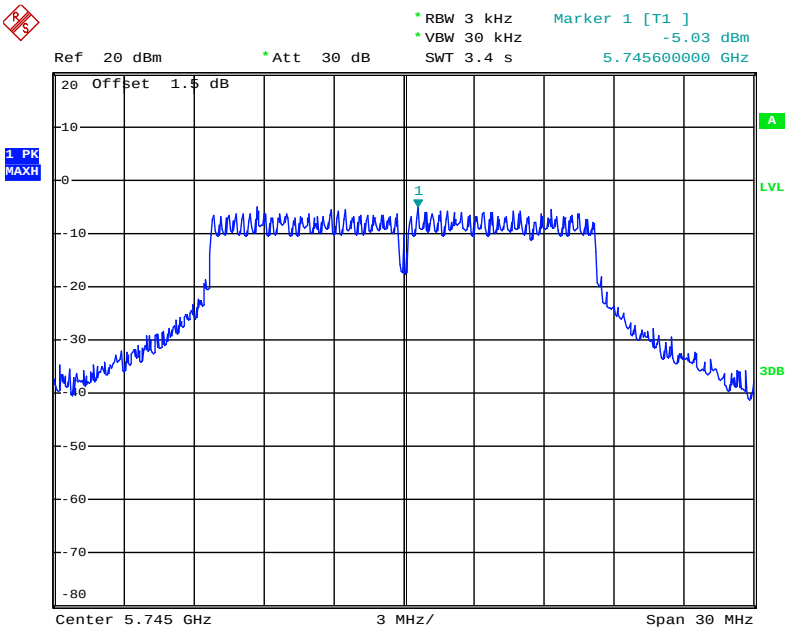
Date: 31.MAY.2014 04:32:26

Power Density Plot on Configuration IEEE 802.11g / 2437 MHz / Chain 3

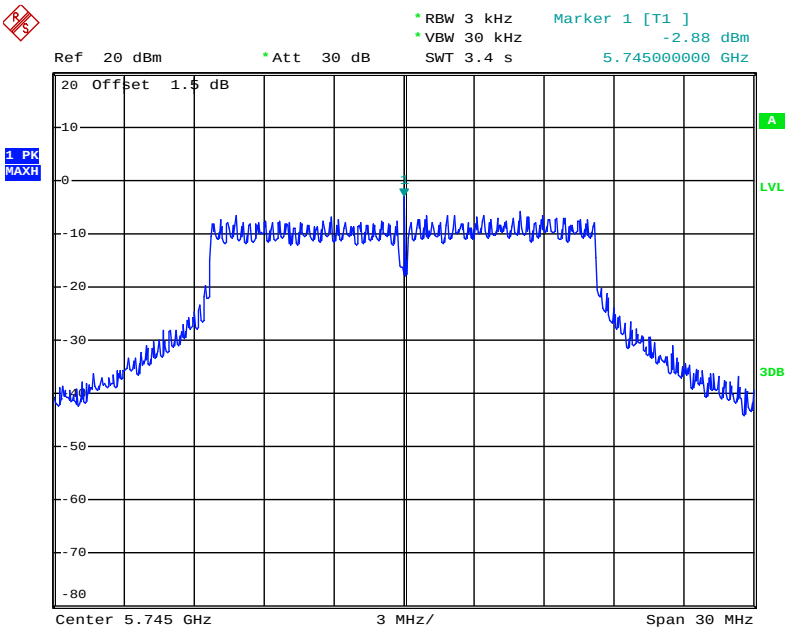


Date: 31.MAY.2014 04:33:19

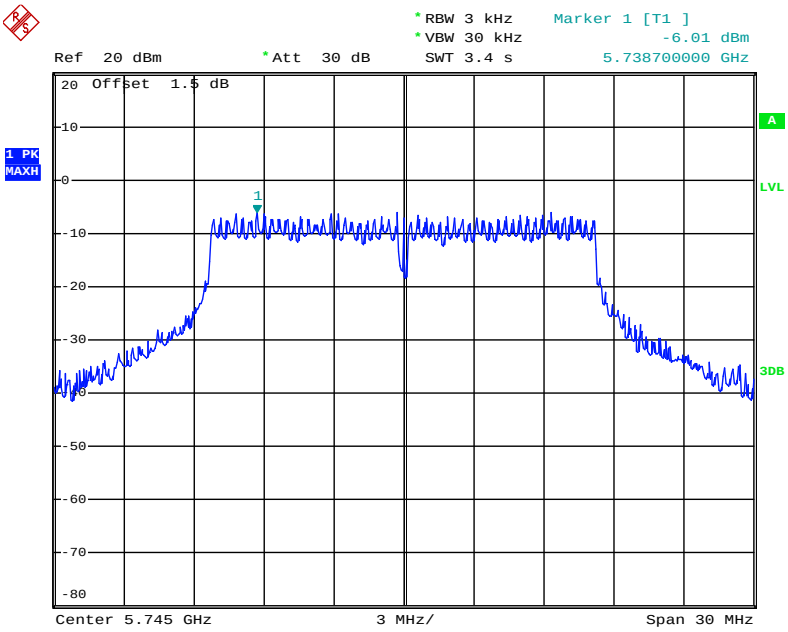
Power Density Plot on Configuration IEEE 802.11a / 5745 MHz / Chain 1



Power Density Plot on Configuration IEEE 802.11a / 5745 MHz / Chain 2

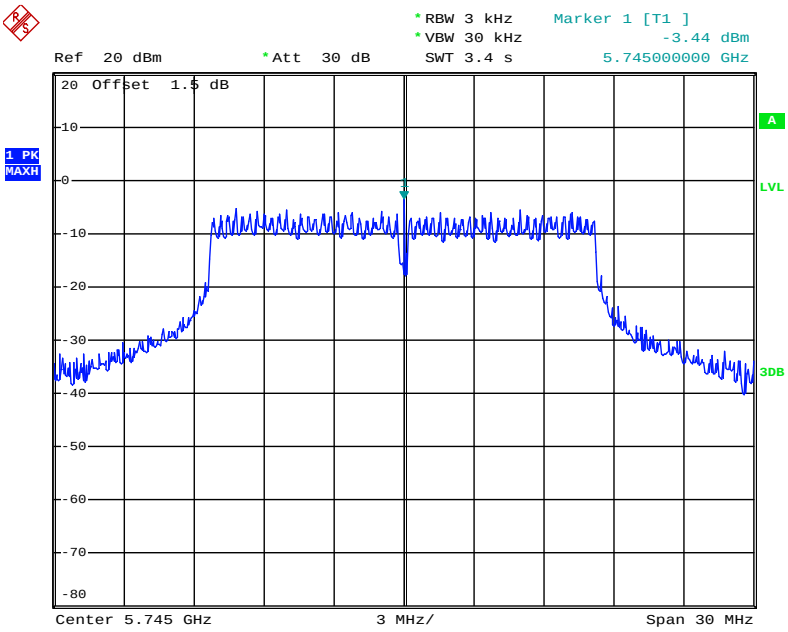


Power Density Plot on Configuration IEEE 802.11a / 5745 MHz / Chain 3



Date: 31.MAY.2014 06:58:59

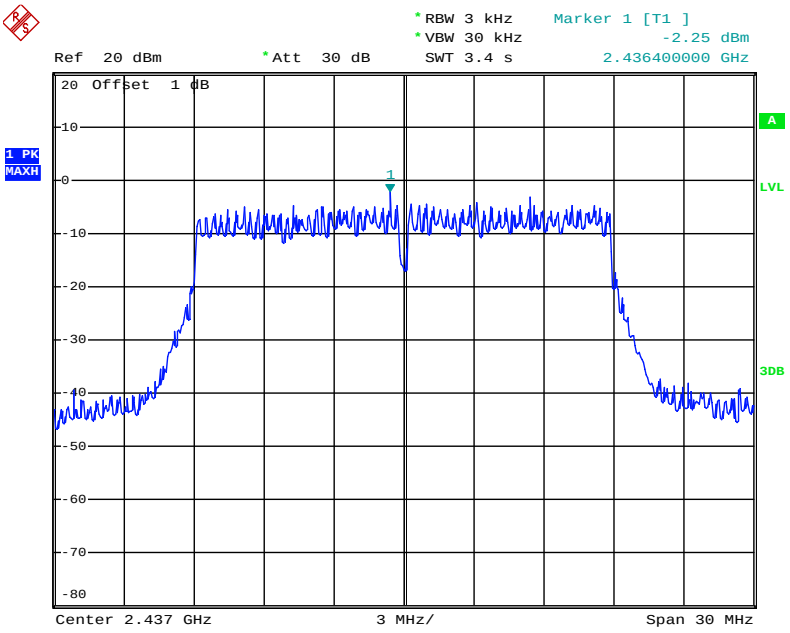
Power Density Plot on Configuration IEEE 802.11a / 5745 MHz / Chain 4



Date: 31.MAY.2014 06:59:37

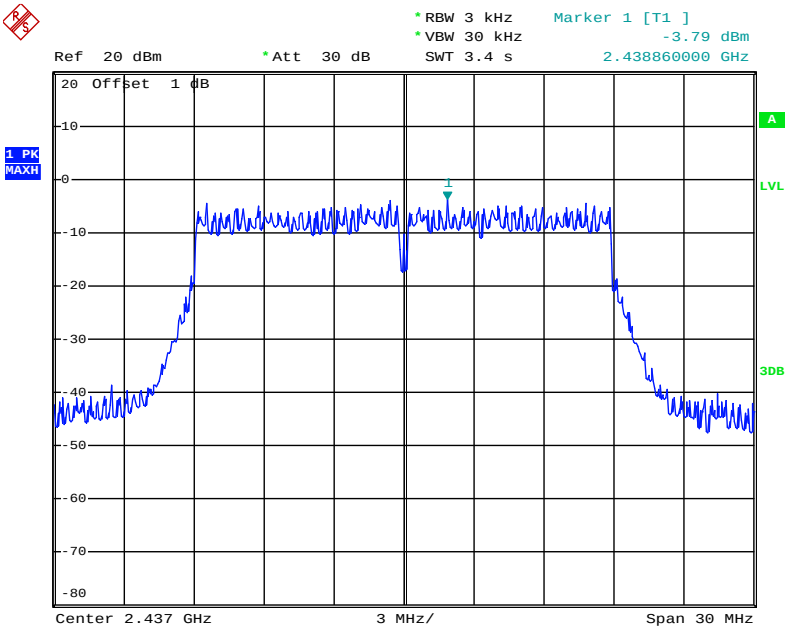
<For Beamforming Mode>

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1



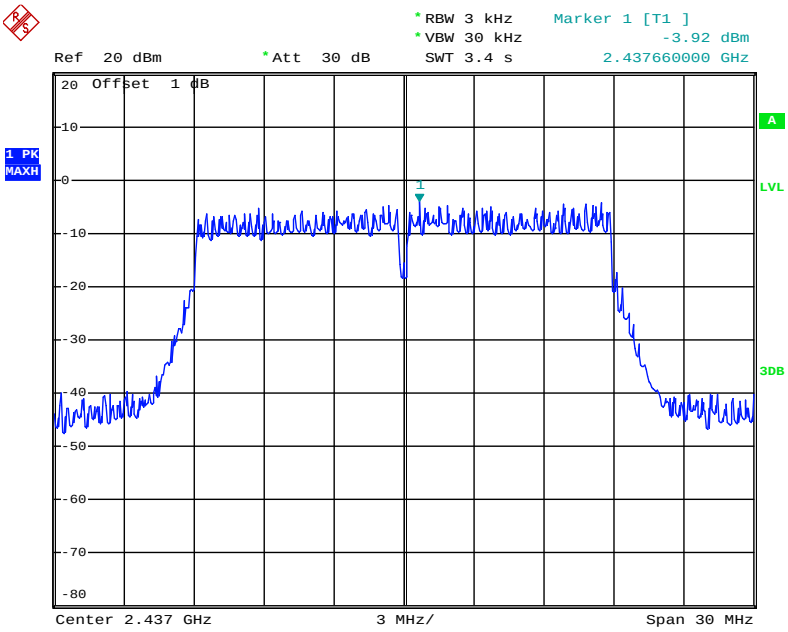
Date: 31.MAY.2014 05:21:34

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 2



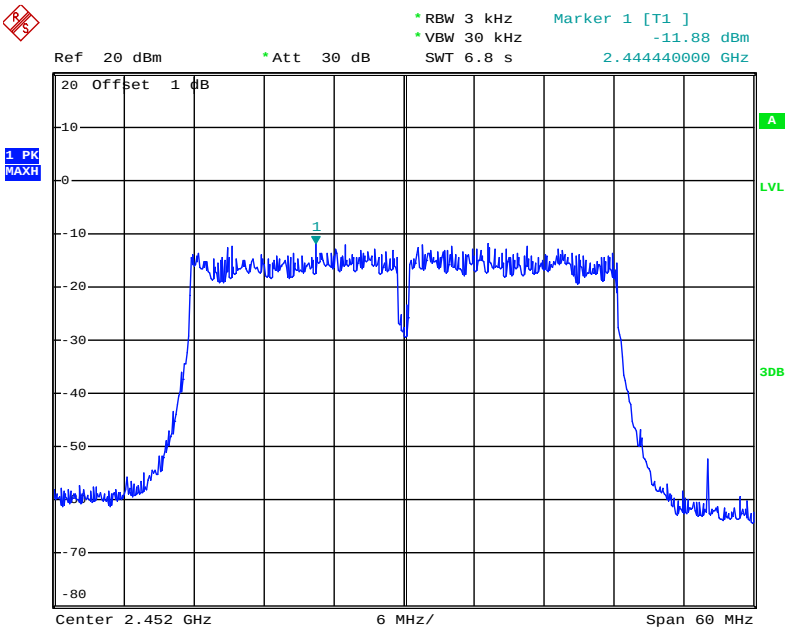
Date: 31.MAY.2014 05:20:47

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 3



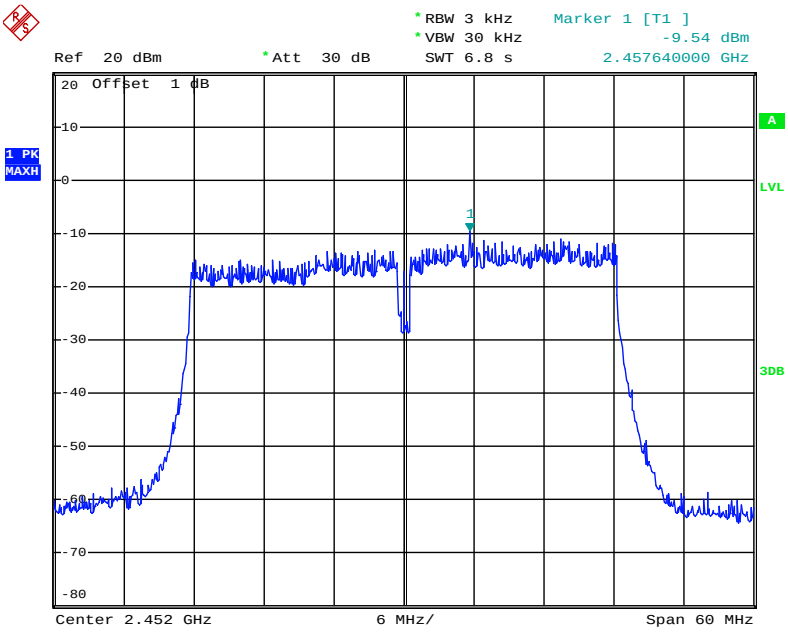
Date: 31.MAY.2014 05:19:45

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1



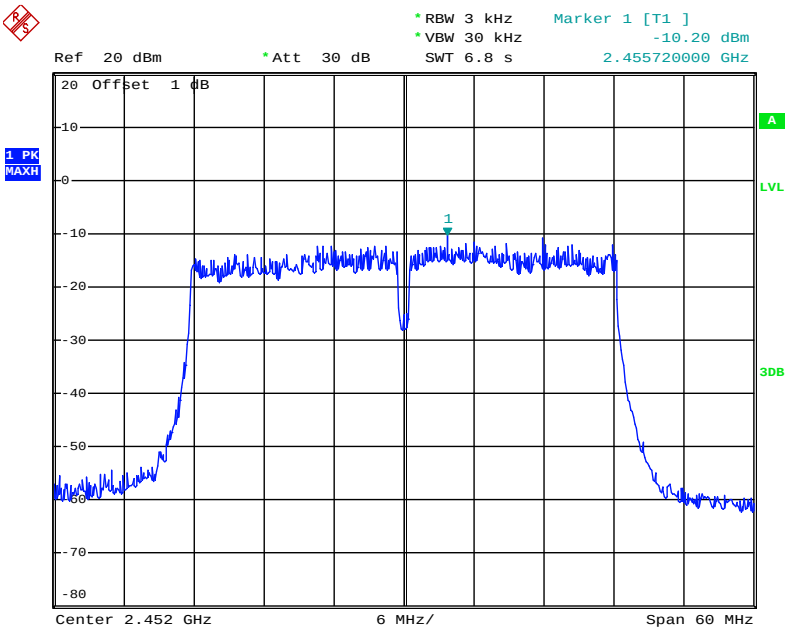
Date: 31.MAY.2014 05:04:58

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 2



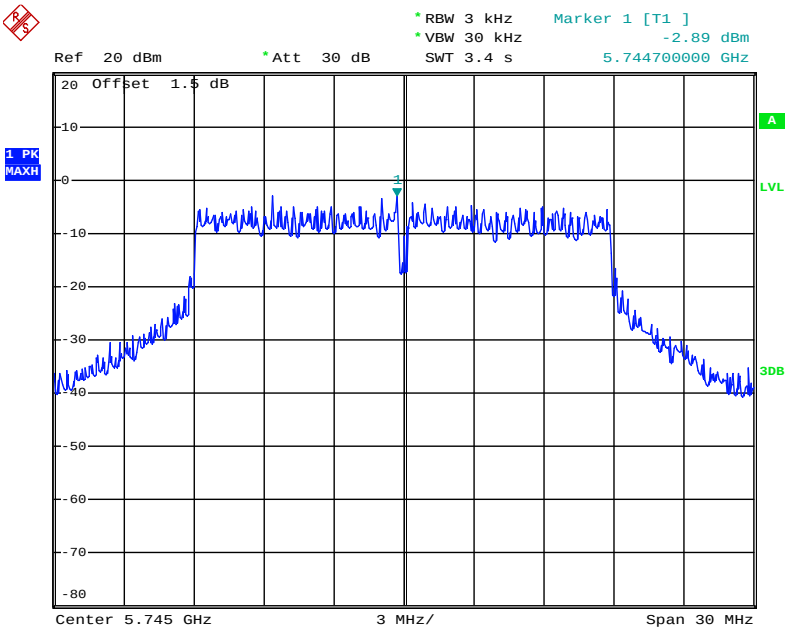
Date: 31.MAY.2014 05:06:32

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 3



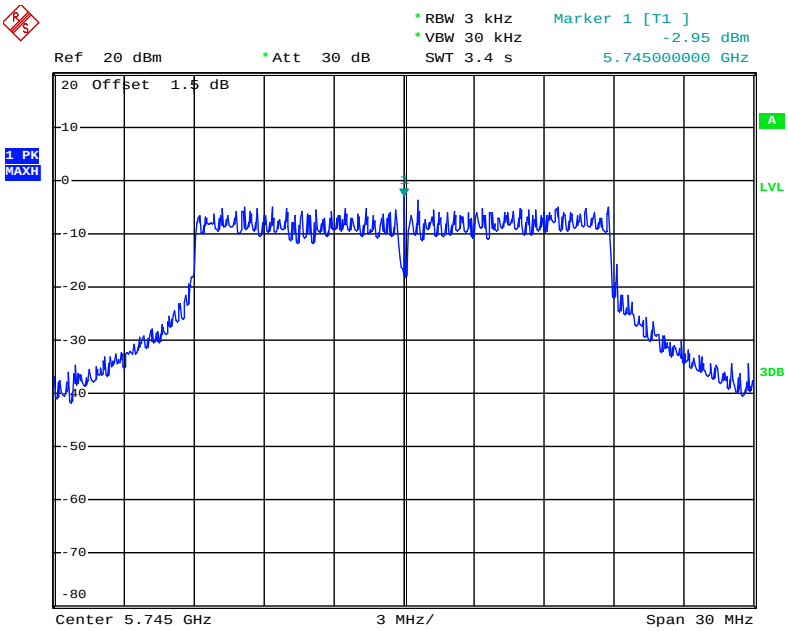
Date: 31.MAY.2014 05:07:24

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 1



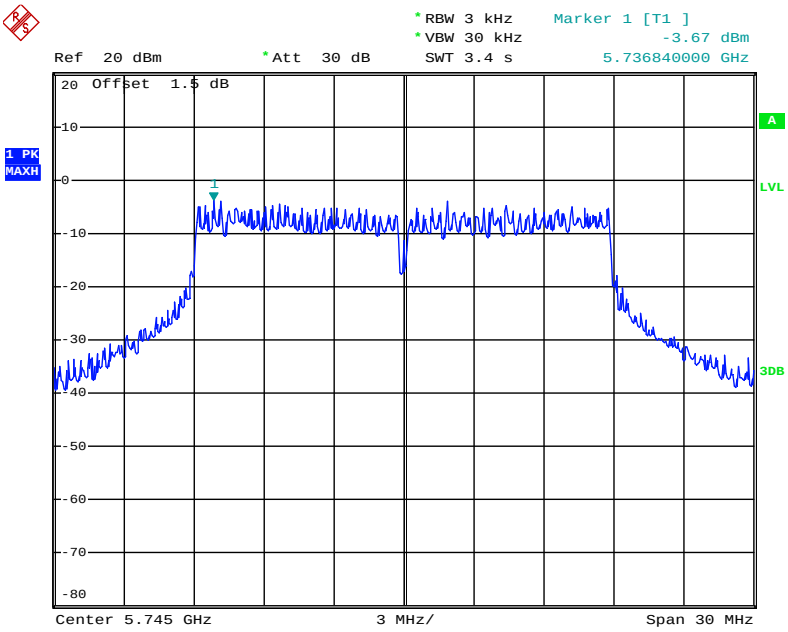
Date: 31.MAY.2014 07:24:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 2



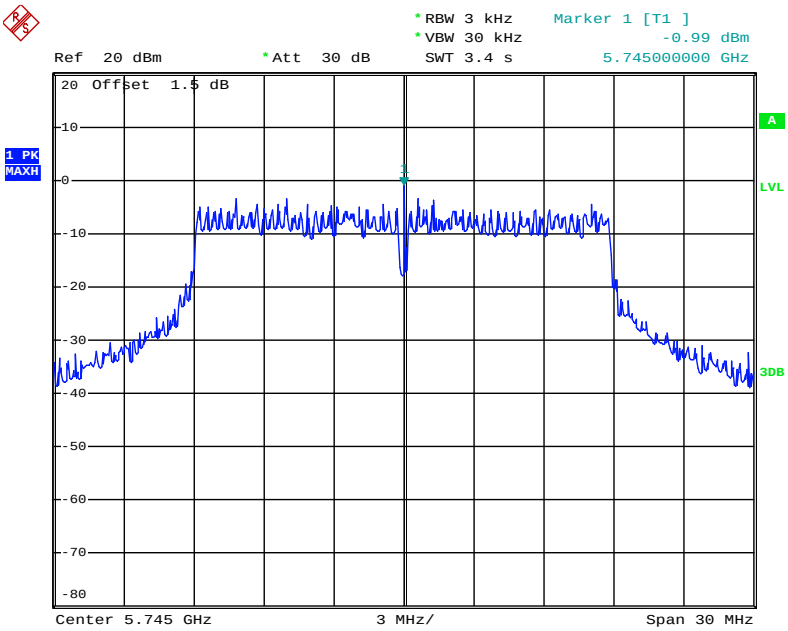
Date: 31.MAY.2014 07:23:31

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 3



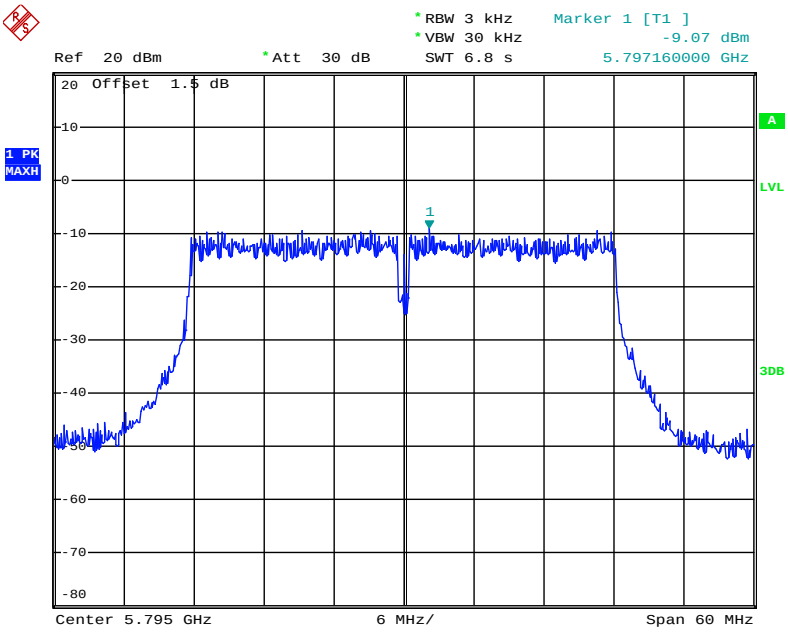
Date: 31.MAY.2014 07:22:39

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 4



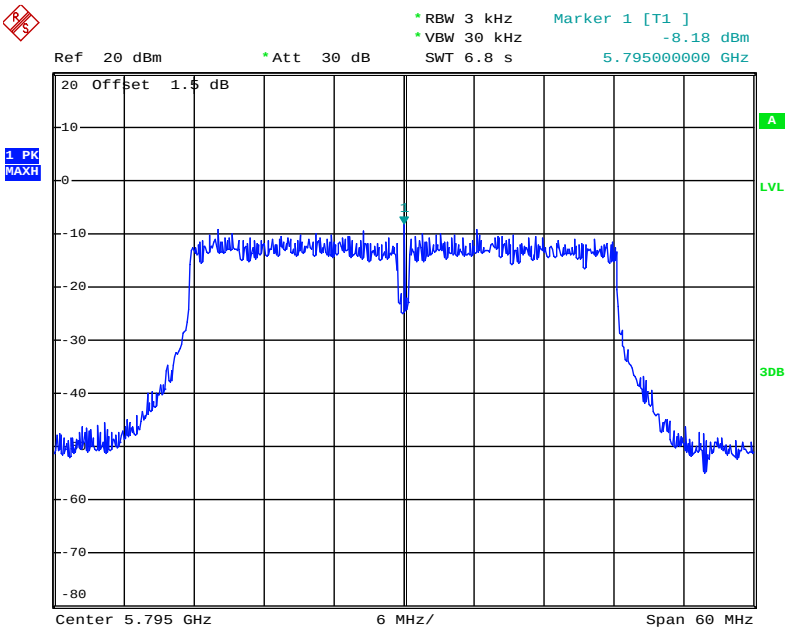
Date: 31.MAY.2014 07:21:47

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 1



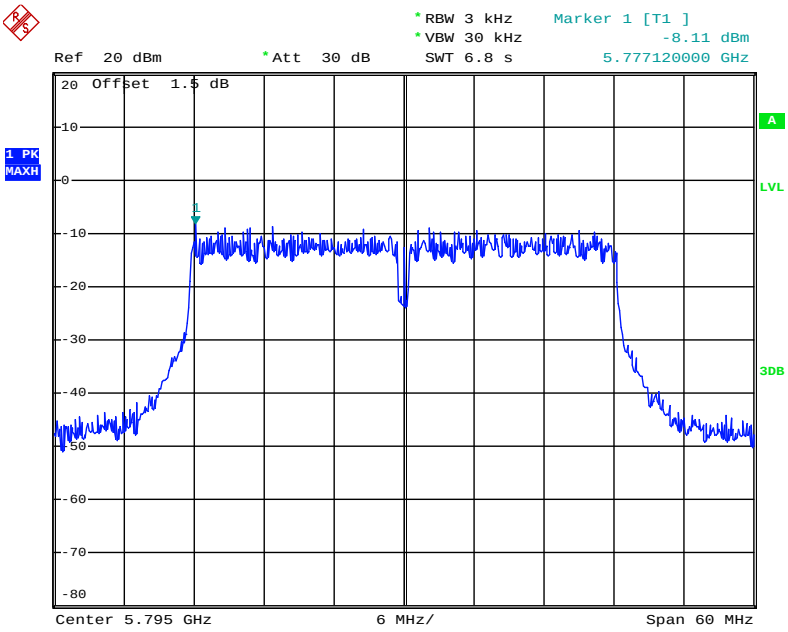
Date: 31.MAY.2014 07:44:43

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 2



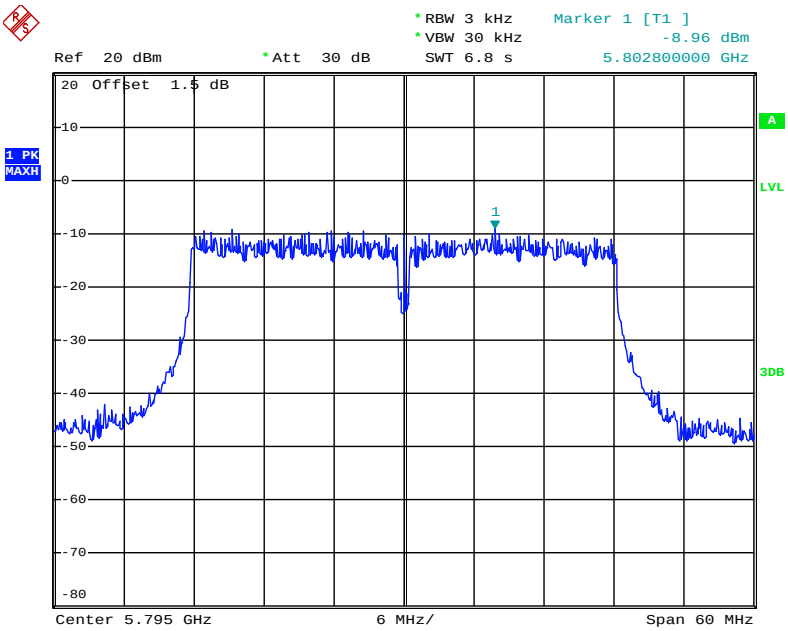
Date: 31.MAY.2014 07:45:13

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 3



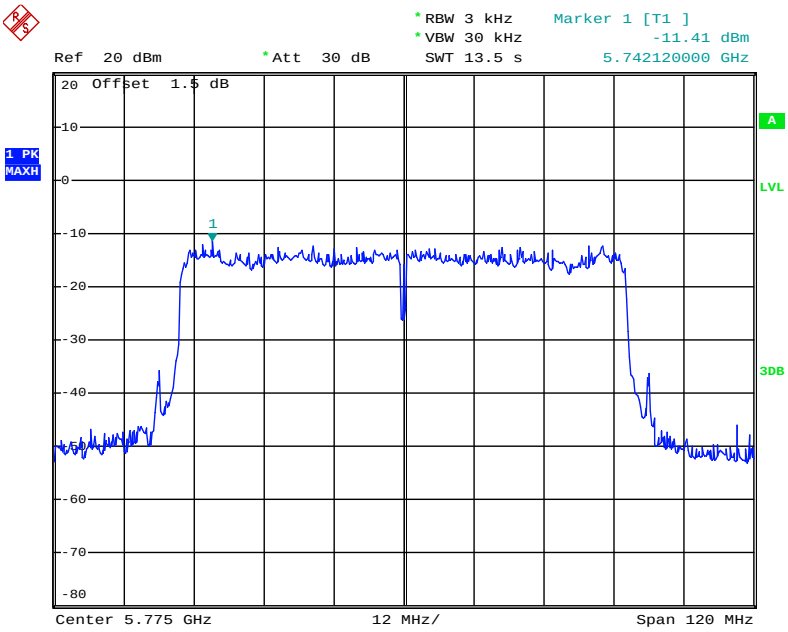
Date: 31.MAY.2014 07:45:58

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795 MHz / Chain 4



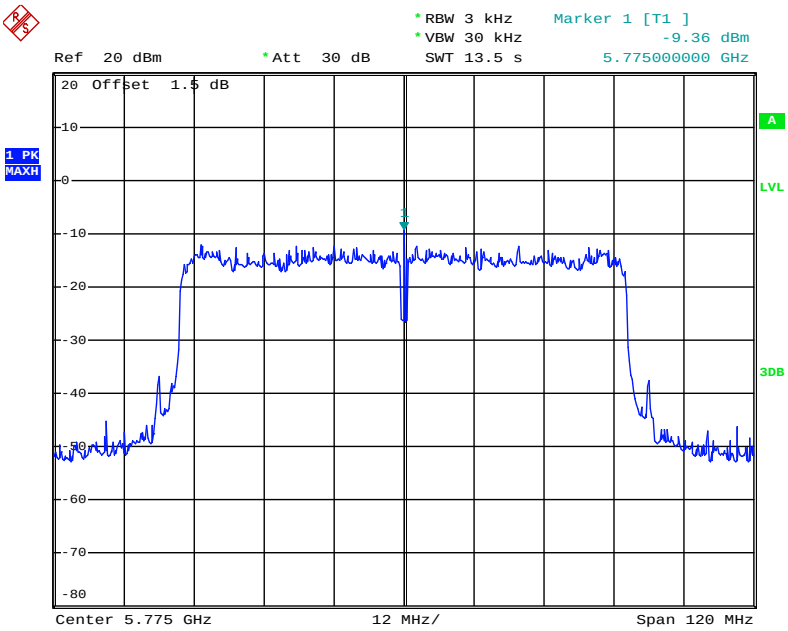
Date: 31.MAY.2014 07:46:43

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 1



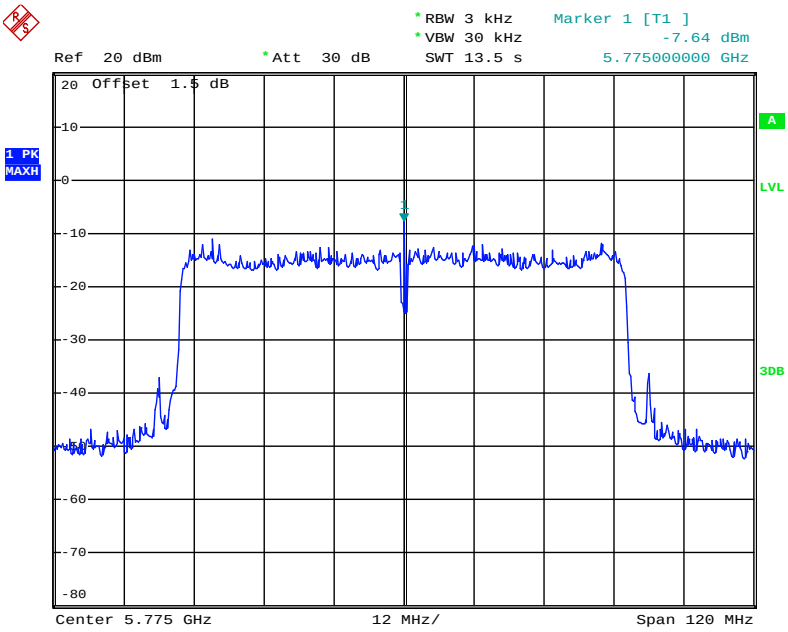
Date: 31.MAY.2014 07:43:55

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 2



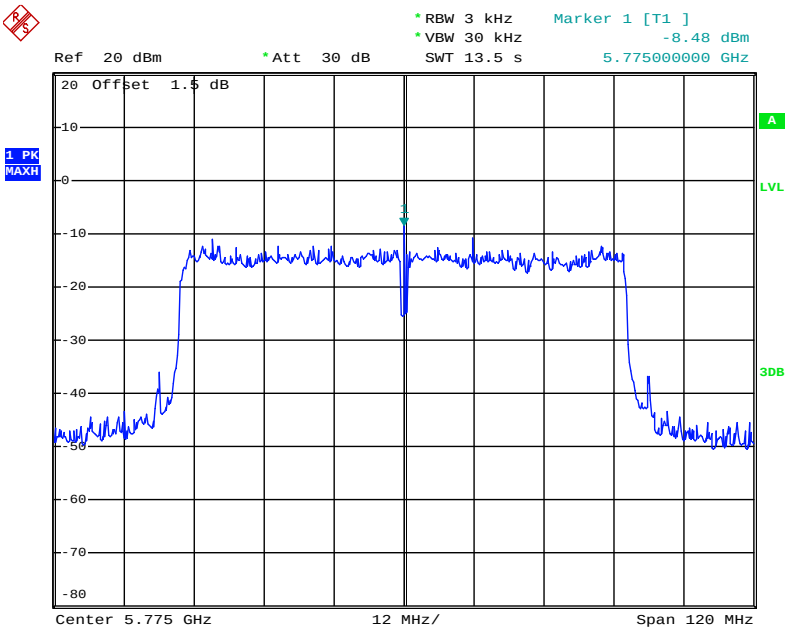
Date: 31.MAY.2014 07:40:31

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 3



Date: 31.MAY.2014 07:42:09

Power Density Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 4



Date: 31.MAY.2014 07:43:02

4.4. 6dB Spectrum Bandwidth Measurement

4.4.1. Limit

For digital modulation systems, the minimum 6dB bandwidth shall be at least 500 kHz.

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 spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> 6dB Bandwidth
RBW	100kHz
VBW	≥ 3 x RBW
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. Test Procedures

For Radiated 6dB Bandwidth Measurement:

1. The transmitter was radiated to the spectrum analyzer in peak hold mode.
2. Test was performed in accordance with KDB 558074 D01 v03r02 for Performing Compliance Measurements on Digital Transmission Systems (DTS) - section 8.0 DTS bandwidth=> 8.1 Option 1.
3. Multiple antenna system was performed in accordance with KDB 662911 D01 v02r01 Emissions Testing of Transmitters with Multiple Outputs in the Same Band.
4. Measured the spectrum width with power higher than 6dB below carrier.

4.4.4. Test Setup Layout

For Radiated 6dB Bandwidth Measurement:

This test setup layout is the same as that shown in section 4.5.4.

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 6dB Spectrum Bandwidth

<For Non-Beamforming Mode>

Temperature	26℃	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac

For 2.4GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	15.12	17.76	500	Complies
6	2437 MHz	15.60	17.68	500	Complies
11	2462 MHz	15.20	17.76	500	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	32.00	36.16	500	Complies
6	2437 MHz	31.36	36.32	500	Complies
9	2452 MHz	31.20	35.84	500	Complies

For 5GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.68	18.00	500	Complies
157	5785 MHz	17.68	18.00	500	Complies
165	5825 MHz	17.68	18.08	500	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	33.44	36.16	500	Complies
159	5795 MHz	33.28	36.32	500	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
155	5775 MHz	71.04	74.24	500	Complies

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11a/b/g

Configuration IEEE 802.11b / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	8.48	11.20	500	Complies
6	2437 MHz	9.04	11.84	500	Complies
11	2462 MHz	8.48	11.52	500	Complies

Configuration IEEE 802.11g / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	12.88	16.32	500	Complies
6	2437 MHz	13.92	16.40	500	Complies
11	2462 MHz	13.52	16.08	500	Complies

Configuration IEEE 802.11a / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	16.32	16.80	500	Complies
157	5785 MHz	15.92	16.88	500	Complies
165	5825 MHz	15.92	16.56	500	Complies

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

For plots, only the channel with worse result was shown.

<For Beamforming Mode>

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac

For 2.4GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
1	2412 MHz	16.56	17.76	500	Complies
6	2437 MHz	15.84	17.68	500	Complies
11	2462 MHz	17.60	17.68	500	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
3	2422 MHz	34.72	36.32	500	Complies
6	2437 MHz	35.68	36.32	500	Complies
9	2452 MHz	35.68	36.32	500	Complies

Temperature	26°C	Humidity	63%
Test Engineer	Wen Chao	Configurations	IEEE 802.11ac

For 5GHz Band

Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
149	5745 MHz	17.36	17.76	500	Complies
157	5785 MHz	17.68	17.84	500	Complies
165	5825 MHz	17.60	17.76	500	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Chain 1 + Chain 2 + Chain 3 + Chain 4

Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
151	5755 MHz	36.48	36.48	500	Complies
159	5795 MHz	36.16	36.48	500	Complies

Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Chain 1 + Chain 2 + Chain 3 + Chain 4

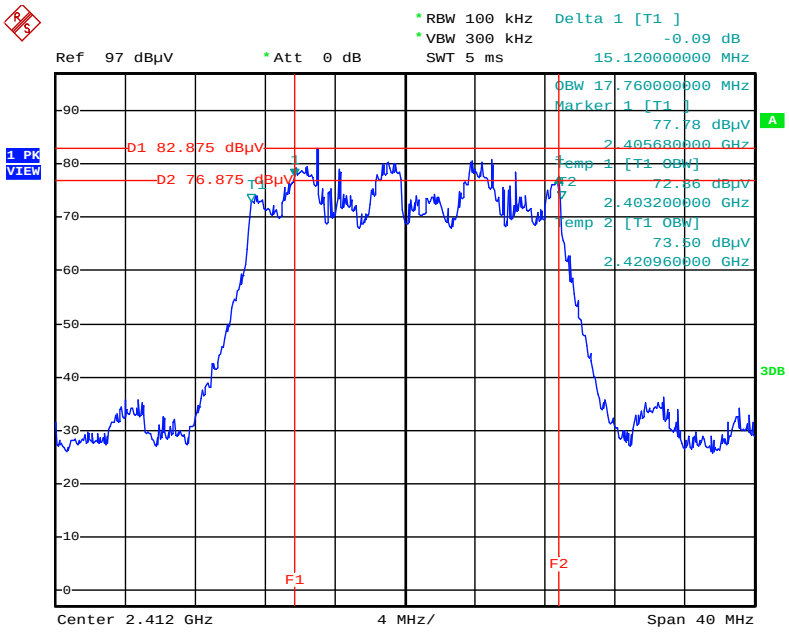
Channel	Frequency	6dB Bandwidth (MHz)	99% Occupied Bandwidth (MHz)	Min. Limit (kHz)	Test Result
155	5775 MHz	73.28	75.52	500	Complies

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

For plots, only the channel with worse result was shown.

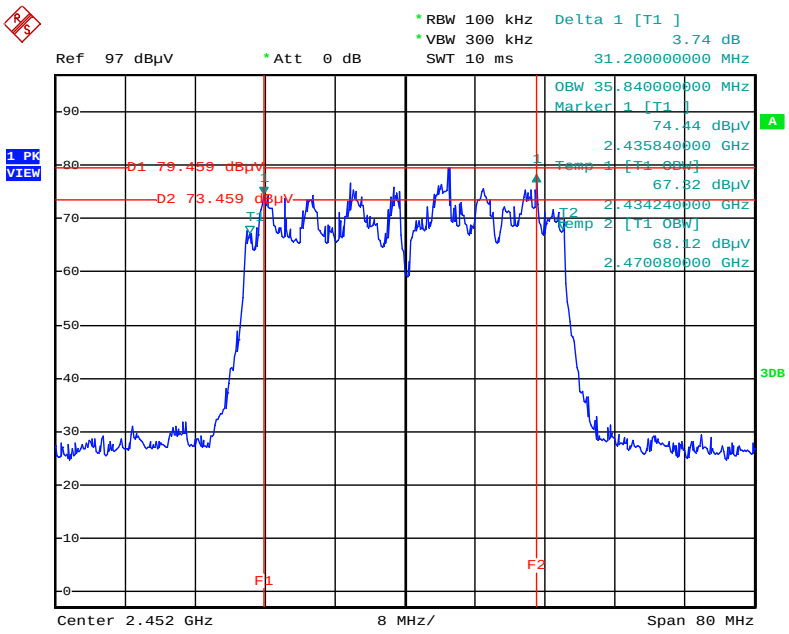
<For Non-Beamforming Mode>

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2412 MHz / Chain 1 + Chain 2 + Chain 3



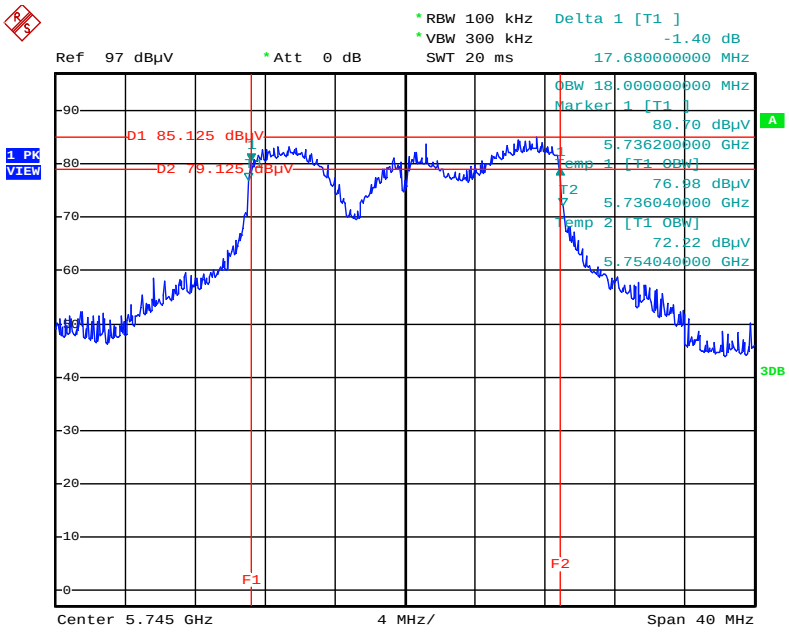
Date: 31.MAY.2014 05:41:36

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2452 MHz / Chain 1 + Chain 2 + Chain 3



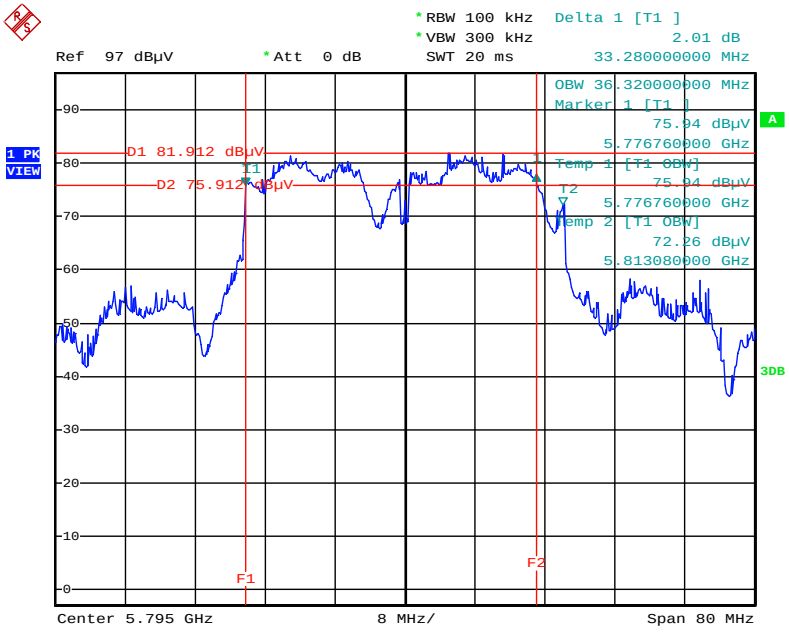
Date: 31.MAY.2014 05:38:34

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



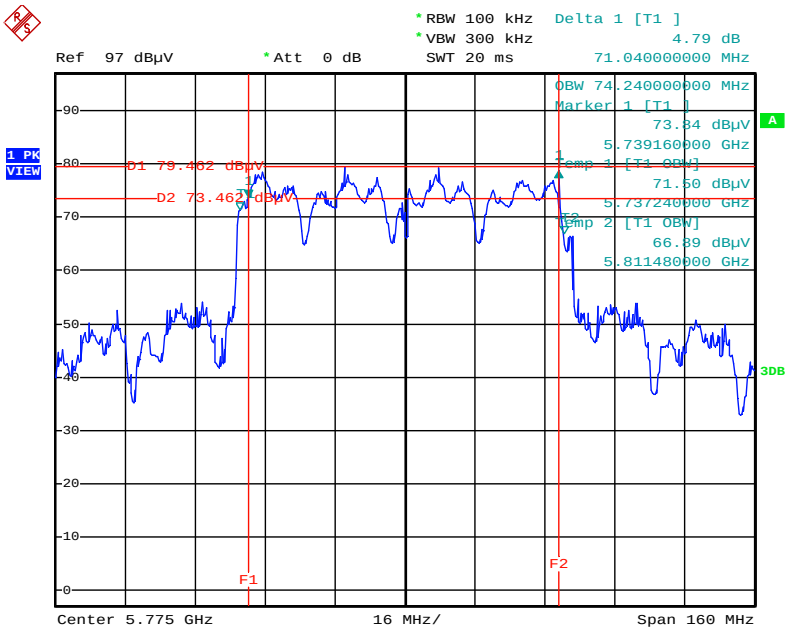
Date: 31.MAY.2014 09:04:53

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



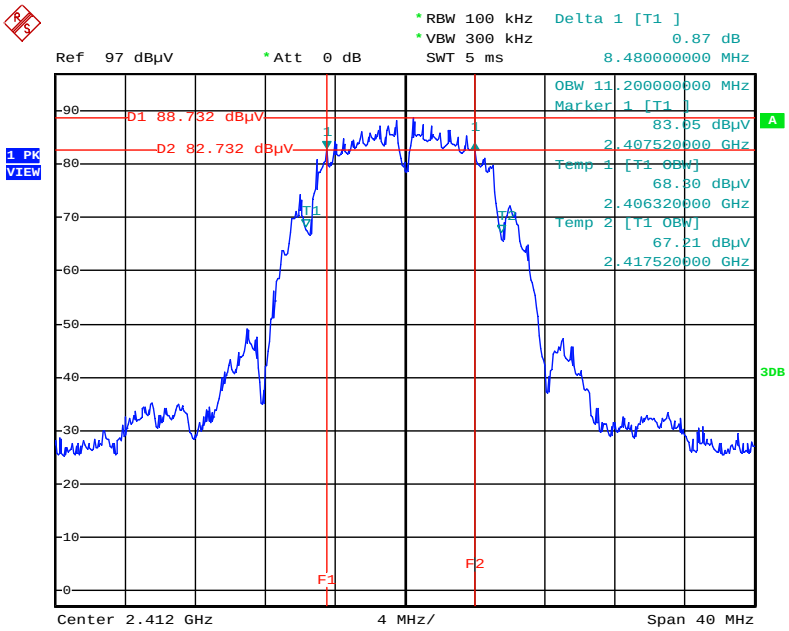
Date: 31.MAY.2014 09:06:57

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



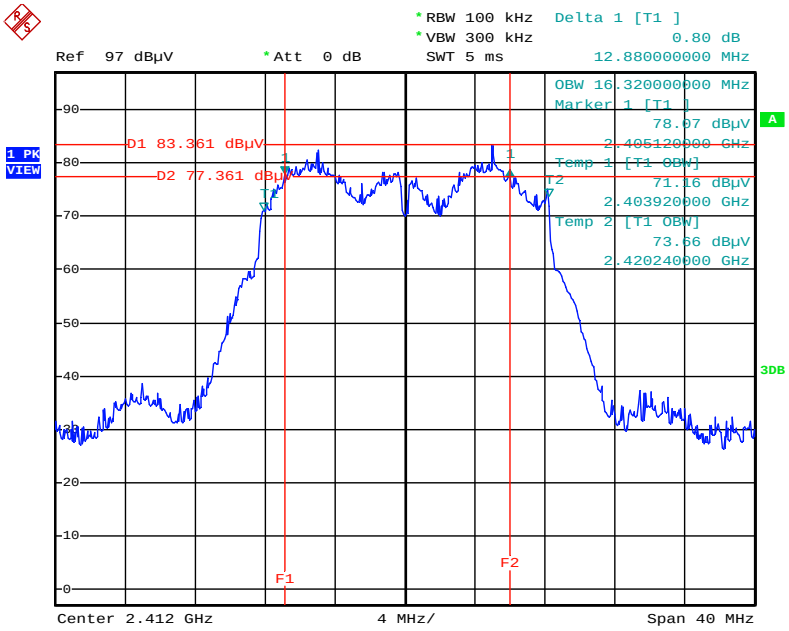
Date: 31.MAY.2014 09:07:33

6 dB Bandwidth Plot on Configuration IEEE 802.11b / 2412 MHz / Chain 1 + Chain 2 + Chain 3



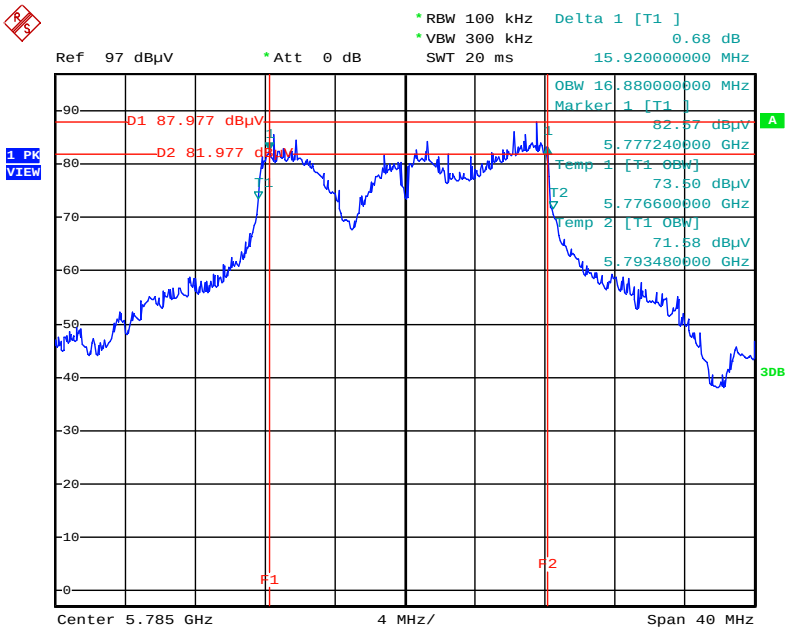
Date: 31.MAY.2014 05:46:07

6 dB Bandwidth Plot on Configuration IEEE 802.11g / 2412 MHz / Chain 1 + Chain 2 + Chain 3



Date: 31.MAY.2014 05:45:22

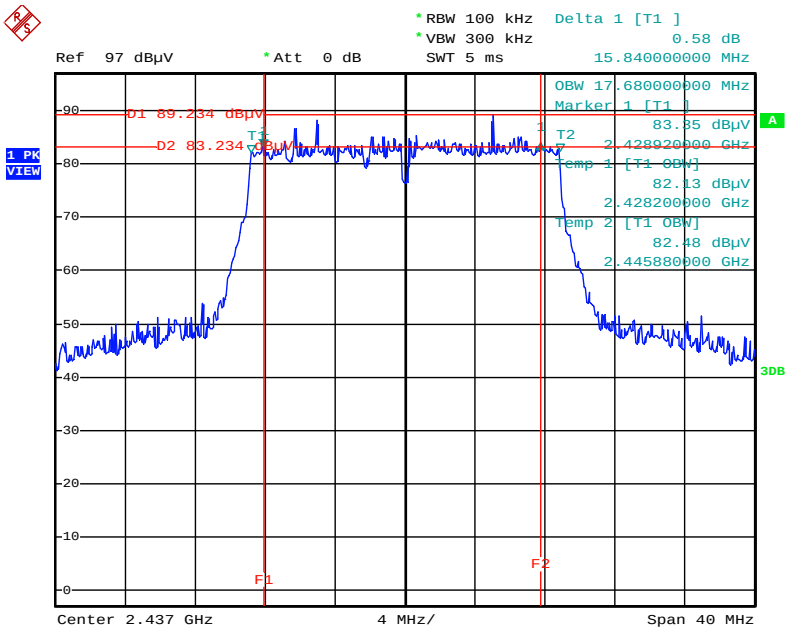
6 dB Bandwidth Plot on Configuration IEEE 802.11a / 5785 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



Date: 31.MAY.2014 09:03:25

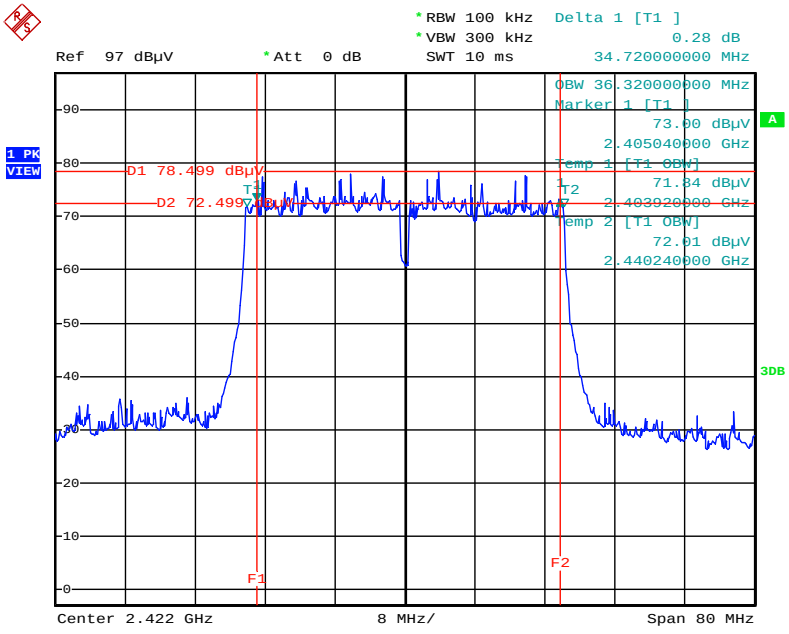
<For Beamforming Mode>

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 2437 MHz / Chain 1 + Chain 2 + Chain 3



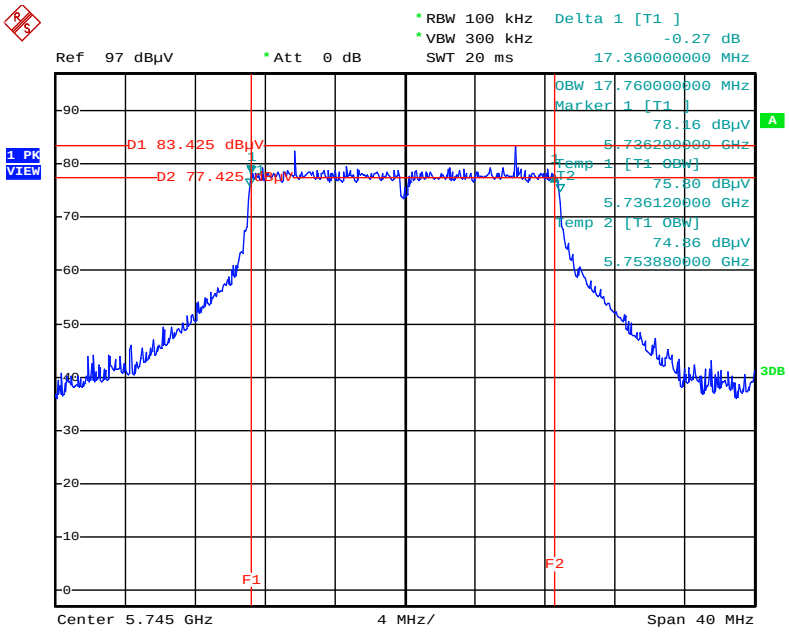
Date: 31.MAY.2014 09:39:03

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 2422 MHz / Chain 1 + Chain 2 + Chain 3



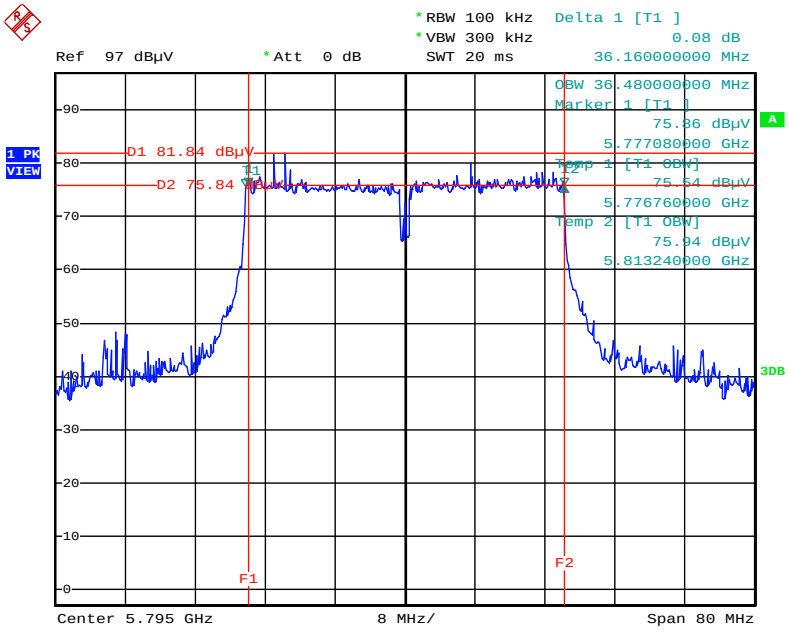
Date: 31.MAY.2014 09:41:08

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / 5745 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



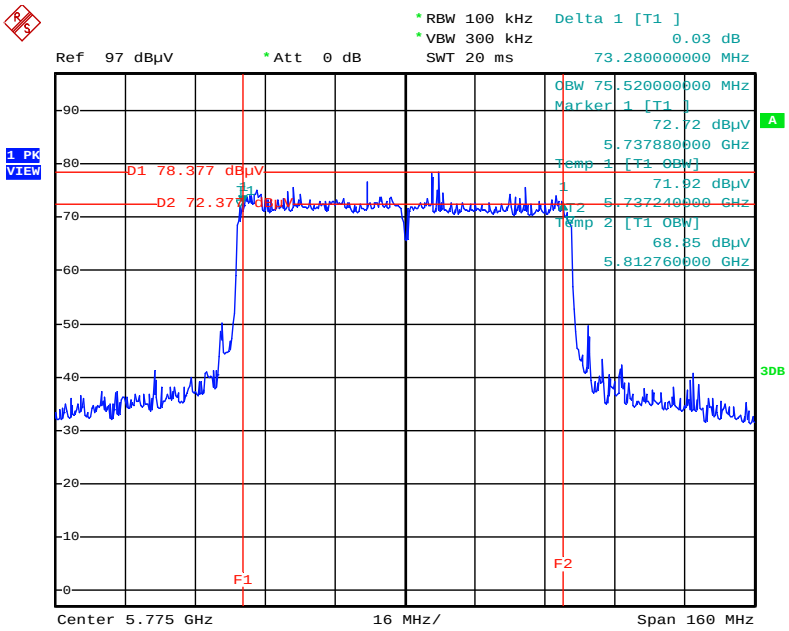
Date: 31.MAY.2014 08:42:35

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / 5795MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



Date: 31.MAY.2014 08:39:58

6 dB Bandwidth Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / 5775 MHz / Chain 1 + Chain 2 + Chain 3 + Chain 4



Date: 31.MAY.2014 08:38:44

4.5. Radiated Emissions Measurement

4.5.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. 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

4.5.2. 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	1GHz
Stop Frequency	10th carrier harmonic
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	100kHz / 300kHz for peak

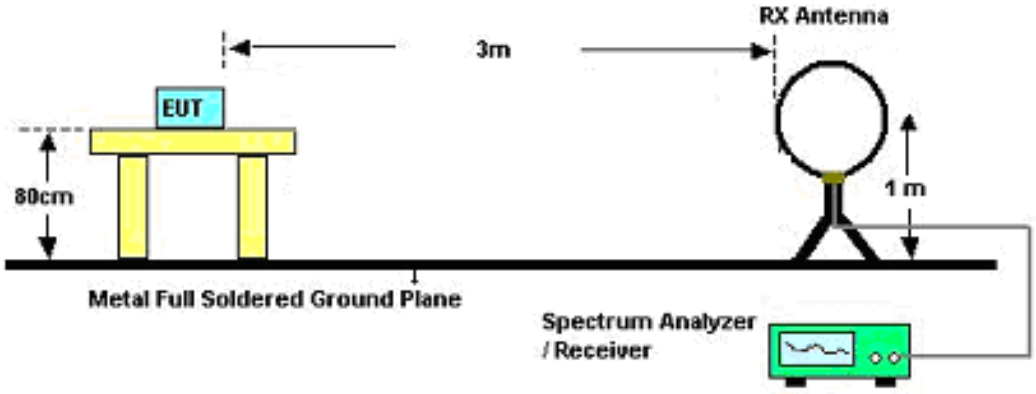
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RBW 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RBW 9kHz for QP
Start ~ Stop Frequency	30MHz~1GHz / RBW 120kHz for QP

4.5.3. Test Procedures

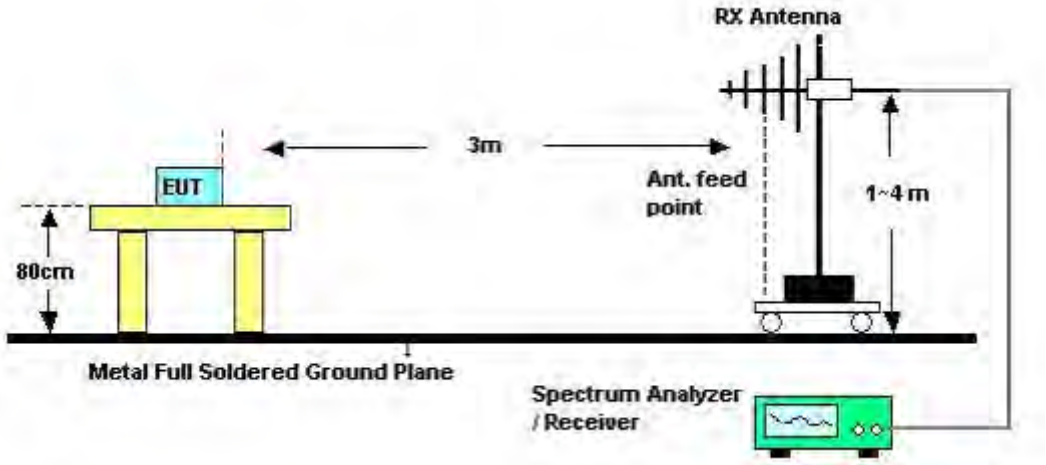
1. Configure the EUT according to ANSI C63.10. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting 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 3MHz RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. 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.
8. 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.
9. 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.

4.5.4. Test Setup Layout

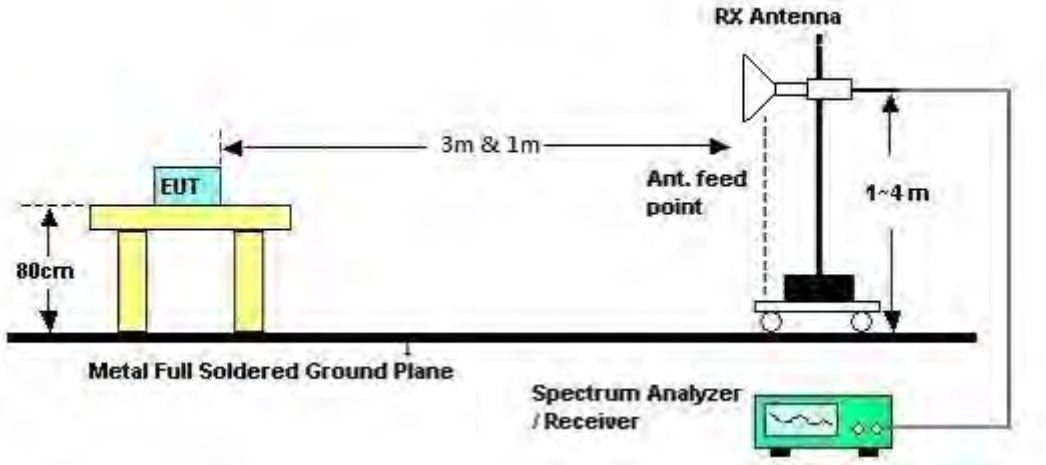
For Radiated Emissions: 9kHz ~30MHz



For Radiated Emissions: 30MHz~1GHz



For Radiated Emissions: Above 1GHz



4.5.5. Test Deviation

There is no deviation with the original standard.

4.5.6. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

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

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	CTX
Test Date	Jun. 07, 2014	Test Mode	Mode 2

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 20 dB below the permissible value has no need to be reported.

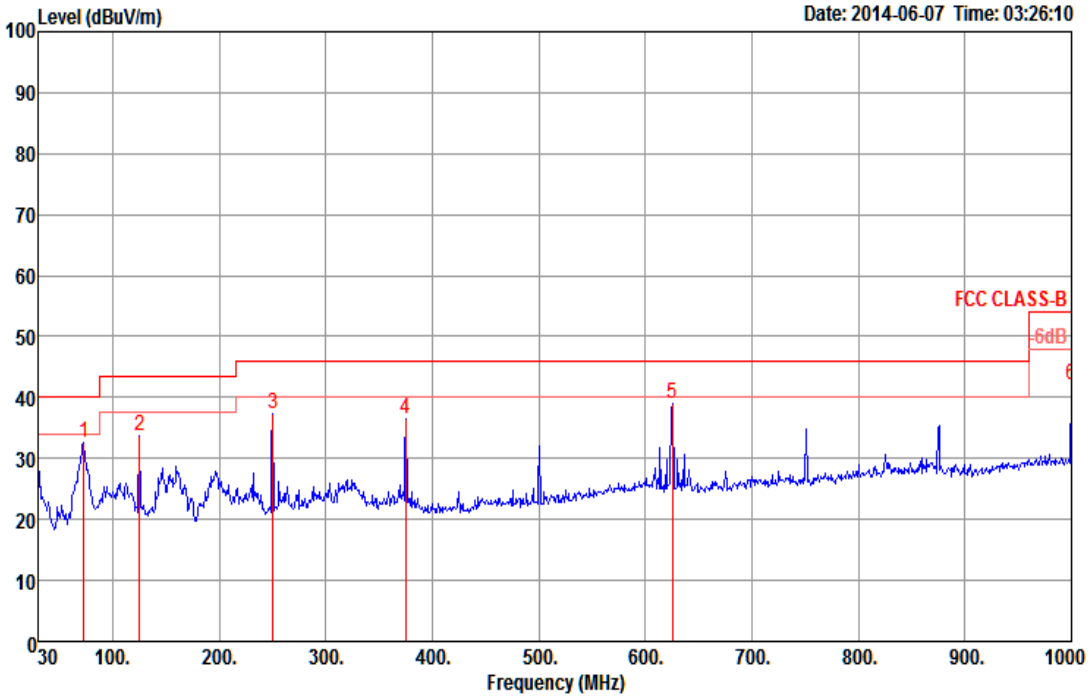
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

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

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

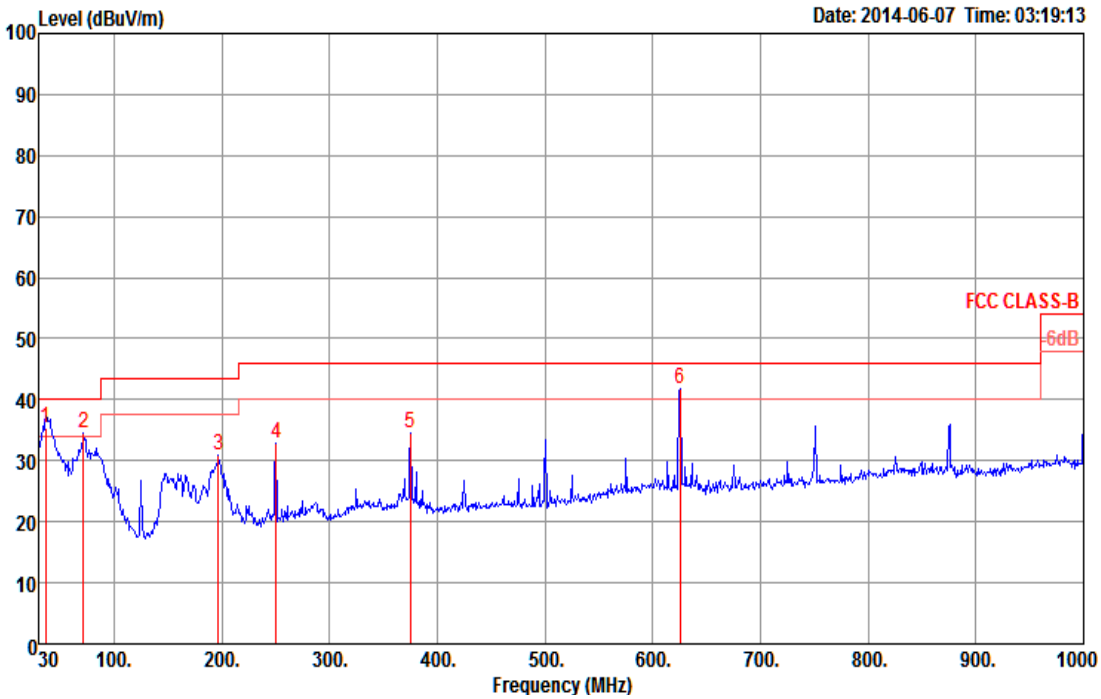
Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	CTX
Test Mode	Mode 2		

Horizontal



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	72.68	32.50	40.00	-7.50	52.71	0.70	7.02	27.93	Peak	0	400	HORIZONTAL
2	125.06	33.68	43.50	-9.82	47.81	0.93	12.60	27.66	Peak	0	400	HORIZONTAL
3	250.19	37.35	46.00	-8.65	49.70	1.40	13.20	26.95	Peak	0	400	HORIZONTAL
4	375.32	36.38	46.00	-9.62	45.79	1.79	16.06	27.26	Peak	0	400	HORIZONTAL
5	625.58	38.86	46.00	-7.14	44.22	2.42	19.80	27.58	Peak	0	400	HORIZONTAL
6	1000.00	42.04	54.00	-11.96	42.63	3.13	22.50	26.22	Peak	0	400	HORIZONTAL

Vertical



	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	36.80	35.37	40.00	-4.63	47.31	0.46	15.60	28.00	QP	117	100	VERTICAL
2	71.71	34.42	40.00	-5.58	54.71	0.69	6.95	27.93	Peak	0	400	VERTICAL
3	196.84	31.01	43.50	-12.49	46.74	1.26	10.28	27.27	Peak	0	400	VERTICAL
4	250.19	32.76	46.00	-13.24	45.11	1.40	13.20	26.95	Peak	0	400	VERTICAL
5	375.32	34.42	46.00	-11.58	43.83	1.79	16.06	27.26	Peak	0	400	VERTICAL
6	625.58	41.71	46.00	-4.29	47.07	2.42	19.80	27.58	Peak	0	400	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.

4.5.9. Results for Radiated Emissions (1GHz~10th Harmonic)

<For Non-Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.93	33.73	54.00	-20.27	30.59	5.68	32.76	35.30	100	229	HORIZONTAL	Average
2	4827.10	44.88	74.00	-29.12	41.72	5.69	32.77	35.30	100	229	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4820.05	34.48	54.00	-19.52	31.34	5.68	32.76	35.30	100	310	VERTICAL	Average
2	4825.07	45.86	74.00	-28.14	42.70	5.69	32.77	35.30	100	310	VERTICAL	Peak

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4873.03	45.27	74.00	-28.73	42.03	5.75	32.80	35.31	100	71	HORIZONTAL	Peak
2	4874.65	35.12	54.00	-18.88	31.88	5.75	32.80	35.31	100	71	HORIZONTAL	Average
3	7315.31	38.53	54.00	-15.47	29.71	7.06	37.12	35.36	100	303	HORIZONTAL	Average
4	7315.54	49.26	74.00	-24.74	40.44	7.06	37.12	35.36	100	303	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.71	50.55	74.00	-23.45	47.31	5.75	32.80	35.31	100	215	VERTICAL	Peak
2	4875.17	38.30	54.00	-15.70	35.07	5.75	32.80	35.32	100	215	VERTICAL	Average
3	7313.40	48.59	74.00	-25.41	39.77	7.06	37.12	35.36	100	286	VERTICAL	Peak
4	7314.85	38.55	54.00	-15.45	29.73	7.06	37.12	35.36	100	286	VERTICAL	Average

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4920.25	34.80	54.00	-19.20	31.50	5.80	32.83	35.33	100	287	HORIZONTAL	Average
2	4928.72	45.66	74.00	-28.34	42.34	5.81	32.84	35.33	100	287	HORIZONTAL	Peak
3	7386.99	39.03	54.00	-14.97	30.10	7.09	37.16	35.32	100	160	HORIZONTAL	Average
4	7388.23	49.57	74.00	-24.43	40.63	7.09	37.16	35.31	100	160	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4924.04	35.77	54.00	-18.23	32.45	5.81	32.84	35.33	100	28	VERTICAL	Average
2	4925.35	46.01	74.00	-27.99	42.69	5.81	32.84	35.33	100	28	VERTICAL	Peak
3	7383.44	49.34	74.00	-24.66	40.42	7.08	37.16	35.32	100	289	VERTICAL	Peak
4	7389.71	39.00	54.00	-15.00	30.06	7.09	37.16	35.31	100	289	VERTICAL	Average

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.28	33.79	54.00	-20.21	30.64	5.68	32.76	35.29	100	160	HORIZONTAL	Average
2	4820.98	45.29	74.00	-28.71	42.15	5.68	32.76	35.30	100	160	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.38	34.01	54.00	-19.99	30.86	5.68	32.76	35.29	100	150	VERTICAL	Average
2	4826.12	44.88	74.00	-29.12	41.72	5.69	32.77	35.30	100	150	VERTICAL	Peak

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4872.93	34.36	54.00	-19.64	31.12	5.75	32.80	35.31	100	178	HORIZONTAL	Average
2	4874.30	45.42	74.00	-28.58	42.18	5.75	32.80	35.31	100	178	HORIZONTAL	Peak
3	7308.34	38.59	54.00	-15.41	29.78	7.05	37.12	35.36	100	272	HORIZONTAL	Average
4	7309.06	48.89	74.00	-25.11	40.07	7.06	37.12	35.36	100	272	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4869.36	45.39	74.00	-28.61	42.16	5.74	32.80	35.31	100	26	VERTICAL	Peak
2	4874.76	35.08	54.00	-18.92	31.84	5.75	32.80	35.31	100	26	VERTICAL	Average
3	7318.50	38.81	54.00	-15.19	29.98	7.06	37.13	35.36	100	267	VERTICAL	Average
4	7319.48	49.74	74.00	-24.26	40.90	7.06	37.13	35.35	100	267	VERTICAL	Peak

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4906.92	46.84	74.00	-27.16	43.56	5.79	32.82	35.33	100	239	HORIZONTAL	Peak
2	4913.06	34.53	54.00	-19.47	31.23	5.80	32.83	35.33	100	239	HORIZONTAL	Average
3	7351.80	39.47	54.00	-14.53	30.60	7.07	37.14	35.34	100	163	HORIZONTAL	Average
4	7361.58	49.96	74.00	-24.04	41.06	7.08	37.15	35.33	100	163	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4897.04	34.86	54.00	-19.14	31.58	5.78	32.82	35.32	100	32	VERTICAL	Average
2	4899.56	45.59	74.00	-28.41	42.31	5.78	32.82	35.32	100	32	VERTICAL	Peak
3	7350.34	50.80	74.00	-23.20	41.93	7.07	37.14	35.34	100	360	VERTICAL	Peak
4	7352.58	39.50	54.00	-14.50	30.63	7.07	37.14	35.34	100	360	VERTICAL	Average

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 20, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11484.88	45.63	54.00	-8.37	35.25	6.74	38.30	34.66	Average	229	145	HORIZONTAL
2	11486.48	61.22	74.00	-12.78	50.84	6.74	38.30	34.66	Peak	229	145	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11488.00	63.39	74.00	-10.61	53.01	6.74	38.30	34.66	Peak	5	160	VERTICAL
2	11488.08	48.84	54.00	-5.16	38.46	6.74	38.30	34.66	Average	5	160	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 20, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11579.28	48.04	54.00	-5.96	37.63	6.77	38.33	34.69	Average	228	148	HORIZONTAL
2	11580.00	62.96	74.00	-11.04	52.55	6.77	38.33	34.69	Peak	228	148	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11567.68	49.78	54.00	-4.22	39.36	6.77	38.33	34.68	Average	4	151	VERTICAL
2	11568.00	64.72	74.00	-9.28	54.30	6.77	38.33	34.68	Peak	4	151	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 20, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11642.24	65.23	74.00	-8.77	54.78	6.80	38.36	34.71	Peak	230	145	HORIZONTAL
2	11647.12	50.41	54.00	-3.59	39.97	6.80	38.36	34.72	Average	230	145	HORIZONTAL

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	Remark	T/Pos	A/Pos	Pol/Phase
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB		deg	cm	
1	11647.92	67.02	74.00	-6.98	56.58	6.80	38.36	34.72	Peak	8	169	VERTICAL
2	11648.32	51.82	54.00	-2.18	41.38	6.80	38.36	34.72	Average	8	169	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 17, 2014		

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	11502.52	54.51	74.00	-19.49	40.86	9.25	39.50	35.10	Peak	144	228	HORIZONTAL
2	11513.44	42.93	54.00	-11.07	29.28	9.25	39.50	35.10	Average	144	228	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	11508.24	66.02	74.00	-7.98	52.37	9.25	39.50	35.10	Peak	144	318	VERTICAL
2	11509.72	51.89	54.00	-2.11	38.24	9.25	39.50	35.10	Average	144	318	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11594.25	48.58	54.00	-5.42	35.35	9.11	38.97	34.85	144	233	HORIZONTAL	Average
2	11607.65	57.54	74.00	-16.46	44.31	9.11	38.97	34.85	144	233	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11586.90	51.14	54.00	-2.86	37.91	9.11	38.97	34.85	186	4	VERTICAL	Average
2	11589.80	60.05	74.00	-13.95	46.82	9.11	38.97	34.85	186	4	VERTICAL	Peak

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 17, 2014		

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	11548.28	43.23	54.00	-10.77	29.57	9.26	39.49	35.09	Average	144	344	HORIZONTAL
2	11548.80	56.77	74.00	-17.23	43.11	9.26	39.49	35.09	Peak	100	344	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	11548.08	51.06	54.00	-2.94	37.40	9.26	39.49	35.09	Average	145	322	VERTICAL
2	11549.04	66.59	74.00	-7.41	52.93	9.26	39.49	35.09	Peak	145	322	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11b CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4824.05	36.18	54.00	-17.82	33.03	5.69	32.76	35.30	100	123	HORIZONTAL	Average
2	4824.11	45.38	74.00	-28.62	42.23	5.69	32.76	35.30	100	123	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4824.01	46.30	54.00	-7.70	43.15	5.69	32.76	35.30	111	5	VERTICAL	Average
2	4824.03	50.23	74.00	-23.77	47.08	5.69	32.76	35.30	111	5	VERTICAL	Peak

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11b CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.05	49.16	74.00	-24.84	45.92	5.75	32.80	35.31	157	213	HORIZONTAL	Peak
2	4874.05	43.91	54.00	-10.09	40.67	5.75	32.80	35.31	157	213	HORIZONTAL	Average
3	7310.24	49.30	74.00	-24.70	40.48	7.06	37.12	35.36	100	154	HORIZONTAL	Peak
4	7311.99	37.53	54.00	-16.47	28.71	7.06	37.12	35.36	100	154	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4874.02	50.35	54.00	-3.65	47.11	5.75	32.80	35.31	100	249	VERTICAL	Average
2	4874.04	53.29	74.00	-20.71	50.05	5.75	32.80	35.31	100	249	VERTICAL	Peak
3	7310.02	49.84	74.00	-24.16	41.02	7.06	37.12	35.36	100	219	VERTICAL	Peak
4	7310.29	37.97	54.00	-16.03	29.15	7.06	37.12	35.36	100	219	VERTICAL	Average

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11b CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.99	45.94	74.00	-28.06	42.62	5.81	32.84	35.33	100	204	HORIZONTAL	Peak
2	4923.99	38.74	54.00	-15.26	35.42	5.81	32.84	35.33	100	204	HORIZONTAL	Average
3	7385.36	50.01	74.00	-23.99	41.08	7.09	37.16	35.32	100	211	HORIZONTAL	Peak
4	7385.58	37.34	54.00	-16.66	28.41	7.09	37.16	35.32	100	211	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4923.88	52.00	74.00	-22.00	48.68	5.81	32.84	35.33	100	259	VERTICAL	Peak
2	4924.01	47.74	54.00	-6.26	44.42	5.81	32.84	35.33	100	259	VERTICAL	Average
3	7385.96	50.85	74.00	-23.15	41.92	7.09	37.16	35.32	100	259	VERTICAL	Peak
4	7386.46	38.34	54.00	-15.66	29.41	7.09	37.16	35.32	100	259	VERTICAL	Average

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11g CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4819.46	33.89	54.00	-20.11	30.75	5.68	32.76	35.30	100	263	HORIZONTAL	Average
2	4821.74	44.39	74.00	-29.61	41.25	5.68	32.76	35.30	100	263	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4820.05	34.49	54.00	-19.51	31.35	5.68	32.76	35.30	100	171	VERTICAL	Average
2	4825.14	44.98	74.00	-29.02	41.82	5.69	32.77	35.30	100	171	VERTICAL	Peak

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11g CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4869.08	34.25	54.00	-19.75	31.02	5.74	32.80	35.31	100	176	HORIZONTAL	Average
2	4873.58	45.28	74.00	-28.72	42.04	5.75	32.80	35.31	100	176	HORIZONTAL	Peak
3	7308.12	49.90	74.00	-24.10	41.09	7.05	37.12	35.36	100	135	HORIZONTAL	Peak
4	7313.86	38.07	54.00	-15.93	29.25	7.06	37.12	35.36	100	135	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4870.31	39.14	54.00	-14.86	35.91	5.74	32.80	35.31	100	94	VERTICAL	Average
2	4878.06	48.72	74.00	-25.28	45.49	5.75	32.80	35.32	100	94	VERTICAL	Peak
3	7307.70	48.78	74.00	-25.22	39.97	7.05	37.12	35.36	100	208	VERTICAL	Peak
4	7314.58	38.28	54.00	-15.72	29.46	7.06	37.12	35.36	100	208	VERTICAL	Average

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11g CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4919.33	34.47	54.00	-19.53	31.17	5.80	32.83	35.33	100	158	HORIZONTAL	Average
2	4922.30	46.00	74.00	-28.00	42.69	5.81	32.83	35.33	100	158	HORIZONTAL	Peak
3	7381.76	49.01	74.00	-24.99	40.09	7.08	37.16	35.32	100	269	HORIZONTAL	Peak
4	7388.93	38.65	54.00	-15.35	29.71	7.09	37.16	35.31	100	269	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	4922.51	45.17	74.00	-28.83	41.86	5.81	32.83	35.33	100	53	VERTICAL	Peak
2	4924.20	35.92	54.00	-18.08	32.60	5.81	32.84	35.33	100	53	VERTICAL	Average
3	7382.99	38.81	54.00	-15.19	29.89	7.08	37.16	35.32	100	184	VERTICAL	Average
4	7388.31	50.21	74.00	-23.79	41.27	7.09	37.16	35.31	100	184	VERTICAL	Peak

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11a CH 149 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11492.00	48.61	54.00	-5.39	35.27	9.09	39.10	34.85	152	225	HORIZONTAL	Average
2	11492.65	58.15	74.00	-15.85	44.81	9.09	39.10	34.85	152	225	HORIZONTAL	Peak

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11487.30	60.39	74.00	-13.61	47.05	9.09	39.10	34.85	181	3	VERTICAL	Peak
2	11487.80	50.61	54.00	-3.39	37.27	9.09	39.10	34.85	181	3	VERTICAL	Average

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11a CH 157 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11564.55	61.63	74.00	-12.37	48.36	9.11	39.01	34.85	144	227	HORIZONTAL	Peak
2	11568.00	51.05	54.00	-2.95	37.78	9.11	39.01	34.85	144	227	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11567.65	61.68	74.00	-12.32	48.41	9.11	39.01	34.85	145	1	VERTICAL	Peak
2	11568.10	51.84	54.00	-2.16	38.57	9.11	39.01	34.85	145	1	VERTICAL	Average

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11a CH 165 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11651.45	58.77	74.00	-15.23	45.62	9.11	38.89	34.85	139	218	HORIZONTAL	Peak
2	11651.80	48.51	54.00	-5.49	35.36	9.11	38.89	34.85	139	218	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11647.95	62.42	74.00	-11.58	49.23	9.11	38.93	34.85	172	12	VERTICAL	Peak
2	11648.05	51.97	54.00	-2.03	38.78	9.11	38.93	34.85	172	12	VERTICAL	Average

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.

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1 / Chain 1 + Chain 2 + Chain 3
Test Date	May 17, 2014		

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	4823.63	31.40	54.00	-22.60	27.34	5.87	33.39	35.20	Average	100	255	HORIZONTAL
2	4824.22	45.03	74.00	-28.97	40.97	5.87	33.39	35.20	Peak	100	255	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	4821.89	43.62	74.00	-30.38	39.56	5.87	33.39	35.20	Peak	100	217	VERTICAL
2	4826.06	31.37	54.00	-22.63	27.31	5.87	33.39	35.20	Average	100	217	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	May 17, 2014		

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	4872.79	31.48	54.00	-22.52	27.28	5.92	33.48	35.20	Average	100	162	HORIZONTAL
2	4873.26	44.54	74.00	-29.46	40.34	5.92	33.48	35.20	Peak	100	162	HORIZONTAL
3	7309.39	38.30	54.00	-15.70	30.09	7.13	36.51	35.43	Average	100	221	HORIZONTAL
4	7311.46	47.91	74.00	-26.09	39.70	7.13	36.51	35.43	Peak	100	221	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	4871.97	31.42	54.00	-22.58	27.22	5.92	33.48	35.20	Average	100	238	VERTICAL
2	4872.83	44.49	74.00	-29.51	40.29	5.92	33.48	35.20	Peak	100	238	VERTICAL
3	7310.58	48.05	74.00	-25.95	39.84	7.13	36.51	35.43	Peak	100	294	VERTICAL
4	7310.67	35.37	54.00	-18.63	27.16	7.13	36.51	35.43	Average	100	294	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 11 / Chain 1 + Chain 2 + Chain 3
Test Date	May 17, 2014		

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	4921.79	44.60	74.00	-29.40	40.29	5.97	33.54	35.20	Peak	100	147	HORIZONTAL
2	4922.53	31.73	54.00	-22.27	27.38	5.97	33.58	35.20	Average	100	147	HORIZONTAL
3	7384.26	47.92	74.00	-26.08	39.60	7.17	36.61	35.46	Peak	100	227	HORIZONTAL
4	7385.08	35.65	54.00	-18.35	27.33	7.17	36.61	35.46	Average	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	4922.30	44.47	74.00	-29.53	40.12	5.97	33.58	35.20	Peak	100	359	VERTICAL
2	4923.99	32.74	54.00	-21.26	28.39	5.97	33.58	35.20	Average	100	359	VERTICAL
3	7384.73	35.18	54.00	-18.82	26.86	7.17	36.61	35.46	Average	100	294	VERTICAL
4	7385.43	49.84	74.00	-24.16	41.52	7.17	36.61	35.46	Peak	100	294	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3 / Chain 1 + Chain 2 + Chain 3
Test Date	May 17, 2014		

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	4839.32	32.06	54.00	-21.94	27.96	5.88	33.42	35.20	Average	100	339	HORIZONTAL
2	4839.48	44.88	74.00	-29.12	40.78	5.88	33.42	35.20	Peak	100	339	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	4840.24	32.15	54.00	-21.85	28.05	5.88	33.42	35.20	Average	100	244	VERTICAL
2	4843.22	44.74	74.00	-29.26	40.64	5.88	33.42	35.20	Peak	100	244	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 6 / Chain 1 + Chain 2 + Chain 3
Test Date	May 17, 2014		

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	4869.20	31.64	54.00	-22.36	27.47	5.92	33.45	35.20	Average	100	333	HORIZONTAL
2	4872.52	43.76	74.00	-30.24	39.56	5.92	33.48	35.20	Peak	100	333	HORIZONTAL
3	7306.40	35.35	54.00	-18.65	27.16	7.13	36.48	35.42	Average	100	357	HORIZONTAL
4	7307.20	47.30	74.00	-26.70	39.12	7.13	36.48	35.43	Peak	100	357	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	4874.42	31.81	54.00	-22.19	27.61	5.92	33.48	35.20	Average	100	142	VERTICAL
2	4874.74	44.41	74.00	-29.59	40.21	5.92	33.48	35.20	Peak	100	142	VERTICAL
3	7308.26	35.42	54.00	-18.58	27.21	7.13	36.51	35.43	Average	100	259	VERTICAL
4	7312.88	48.07	74.00	-25.93	39.86	7.13	36.51	35.43	Peak	100	259	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 9 / Chain 1 + Chain 2 + Chain 3
Test Date	May 17, 2014		

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	4906.56	44.43	74.00	-29.57	40.14	5.95	33.54	35.20	Peak	100	72	HORIZONTAL
2	4910.68	32.02	54.00	-21.98	27.73	5.95	33.54	35.20	Average	100	72	HORIZONTAL
3	7349.08	47.74	74.00	-26.26	39.47	7.15	36.56	35.44	Peak	100	118	HORIZONTAL
4	7350.32	36.01	54.00	-17.99	27.73	7.16	36.56	35.44	Average	100	118	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	4910.64	32.44	54.00	-21.56	28.15	5.95	33.54	35.20	Average	100	103	VERTICAL
2	4912.64	45.20	74.00	-28.80	40.91	5.95	33.54	35.20	Peak	100	103	VERTICAL
3	7348.08	35.88	54.00	-18.12	27.61	7.15	36.56	35.44	Average	100	198	VERTICAL
4	7350.40	48.48	74.00	-25.52	40.20	7.16	36.56	35.44	Peak	100	198	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 149 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11489.55	58.58	74.00	-15.42	45.24	9.09	39.10	34.85	134	233	HORIZONTAL	Peak
2	11493.85	48.51	54.00	-5.49	35.16	9.10	39.10	34.85	134	233	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11487.35	49.78	54.00	-4.22	36.44	9.09	39.10	34.85	180	8	VERTICAL	Average
2	11487.50	60.05	74.00	-13.95	46.71	9.09	39.10	34.85	180	8	VERTICAL	Peak

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 157 / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11561.05	62.69	74.00	-11.31	49.43	9.10	39.01	34.85	146	228	HORIZONTAL	Peak
2	11566.60	50.79	54.00	-3.21	37.52	9.11	39.01	34.85	146	228	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11567.35	51.88	54.00	-2.12	38.61	9.11	39.01	34.85	151	1	VERTICAL	Average
2	11567.80	60.54	74.00	-13.46	47.27	9.11	39.01	34.85	151	1	VERTICAL	Peak

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 165 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 21, 2014		

Horizontal

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11650.40	60.22	74.00	-13.78	47.03	9.11	38.93	34.85	130	221	HORIZONTAL	Peak
2	11653.30	49.42	54.00	-4.58	36.27	9.11	38.89	34.85	130	221	HORIZONTAL	Average

Vertical

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	11647.55	62.67	74.00	-11.33	49.48	9.11	38.93	34.85	180	14	VERTICAL	Peak
2	11648.05	51.61	54.00	-2.39	38.42	9.11	38.93	34.85	180	14	VERTICAL	Average

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 151 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 20, 2014		

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	11510.03	42.84	54.00	-11.16	29.19	9.25	39.50	35.10	Average	156	228	HORIZONTAL
2	11510.47	57.20	74.00	-16.80	43.55	9.25	39.50	35.10	Peak	156	228	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	11508.05	64.94	74.00	-9.06	51.29	9.25	39.50	35.10	Peak	183	322	VERTICAL
2	11508.39	48.53	54.00	-5.47	34.88	9.25	39.50	35.10	Average	183	322	VERTICAL

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 159 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 20, 2014		

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	11590.38	59.57	74.00	-14.43	45.91	9.27	39.47	35.08	Peak	149	230	HORIZONTAL
2	11592.43	45.68	54.00	-8.32	32.02	9.27	39.47	35.08	Average	149	230	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	11589.40	67.45	74.00	-6.55	53.79	9.27	39.47	35.08	Peak	139	321	VERTICAL
2	11590.08	51.76	54.00	-2.24	38.10	9.27	39.47	35.08	Average	139	321	VERTICAL

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT80 CH 155 / / Chain 1 + Chain 2 + Chain 3 + Chain 4
Test Date	May 20, 2014		

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	11549.64	55.85	74.00	-18.15	42.19	9.26	39.49	35.09	Peak	132	334	HORIZONTAL
2	11549.65	43.74	54.00	-10.26	30.08	9.26	39.49	35.09	Average	132	334	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	11549.58	64.17	74.00	-9.83	50.51	9.26	39.49	35.09	Peak	140	323	VERTICAL
2	11550.14	51.44	54.00	-2.56	37.78	9.26	39.49	35.09	Average	140	323	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. Emissions Measurement

4.6.1. Limit

30dBc in any 100 kHz bandwidth outside the operating frequency band. 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 the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RBW / VBW (Emission in restricted band)	1MHz / 3MHz for Peak, 1 MHz / 10Hz for Average
RBW / VBW (Emission in non-restricted band)	100 kHz / 300 kHz for Peak

4.6.3. Test Procedures

For Radiated band edges Measurement:

1. The test procedure is the same as section 4.5.3, only the frequency range investigated is limited to 100MHz around band edges.

For Radiated Out of Band Emission Measurement:

1. Test was performed in accordance with KDB 558074 D01 v03r02 for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 section 10.1 Unwanted Emissions into Non-Restricted Frequency Bands Measurement Procedure
2. The radiated emission test is performed on each TX port of operating mode without summing or adding 10log (N) since the limit is relative emission limit.
   Only worst data of each operating mode is presented.

4.6.4. Test Setup Layout

For Radiated band edges Measurement:

This test setup layout is the same as that shown in section 4.5.4.

For Radiated Out of Band Emission Measurement:

This test setup layout is the same as that shown in section 4.5.4.

4.6.5. Test Deviation

There is no deviation with the original standard.

4.6.6. EUT Operation during Test

For non-beamforming mode:

The EUT was programmed to be in continuously transmitting mode.

For beamforming mode:

The EUT was programmed to be in beamforming transmitting mode.

4.6.7. Test Result of Band Edge and Fundamental Emissions

<For Non-Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1 + Chain 2 + Chain 3
Test date	May 16, 2014		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.00	70.22	74.00	-3.78	38.64	3.68	27.90	0.00	135	331	VERTICAL	Peak
2	2389.40	52.53	54.00	-1.47	20.95	3.68	27.90	0.00	135	331	VERTICAL	Average
3	2414.00	118.46			86.87	3.69	27.90	0.00	135	331	VERTICAL	Peak
4	2414.20	108.11			76.52	3.69	27.90	0.00	135	331	VERTICAL	Average
5	2484.10	49.52	54.00	-4.48	17.89	3.73	27.90	0.00	135	331	VERTICAL	Average
6	2484.10	60.63	74.00	-13.37	29.00	3.73	27.90	0.00	135	331	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2386.80	72.14	74.00	-1.86	40.56	3.68	27.90	0.00	109	184	VERTICAL	Peak
2	2390.00	47.47	54.00	-6.53	15.89	3.68	27.90	0.00	109	184	VERTICAL	Average
3	2436.00	113.23			81.62	3.71	27.90	0.00	109	184	VERTICAL	Average
4	2436.40	124.55			92.94	3.71	27.90	0.00	109	184	VERTICAL	Peak
5	2485.30	72.26	74.00	-1.74	40.63	3.73	27.90	0.00	109	184	VERTICAL	Peak
6	2485.70	51.89	54.00	-2.11	20.26	3.73	27.90	0.00	109	184	VERTICAL	Average

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.00	48.78	54.00	-5.22	17.20	3.68	27.90	0.00	159	332	VERTICAL	Average
2	2389.40	61.62	74.00	-12.38	30.04	3.68	27.90	0.00	159	332	VERTICAL	Peak
3	2464.00	108.75			77.13	3.72	27.90	0.00	159	332	VERTICAL	Average
4	2464.20	120.21			88.59	3.72	27.90	0.00	159	332	VERTICAL	Peak
5	2483.50	52.21	54.00	-1.79	20.58	3.73	27.90	0.00	159	332	VERTICAL	Average
6	2484.70	73.00	74.00	-1.00	41.37	3.73	27.90	0.00	159	332	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1 + Chain 2 + Chain 3
Test date	May 16, 2014		

Channel 3

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2387.20	67.59	74.00	-6.41	36.01	3.68	27.90	0.00	134	331	VERTICAL	Peak
2	2389.00	52.61	54.00	-1.39	21.03	3.68	27.90	0.00	134	331	VERTICAL	Average
3	2419.20	101.85			70.25	3.70	27.90	0.00	134	331	VERTICAL	Average
4	2429.60	112.93			81.33	3.70	27.90	0.00	134	331	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2385.80	69.95	74.00	-4.05	38.37	3.68	27.90	0.00	107	179	VERTICAL	Peak
2	2390.00	52.01	54.00	-1.99	20.43	3.68	27.90	0.00	107	179	VERTICAL	Average
3	2431.00	107.74			76.14	3.70	27.90	0.00	107	179	VERTICAL	Average
4	2441.40	116.21			84.60	3.71	27.90	0.00	107	179	VERTICAL	Peak
5	2484.90	52.21	54.00	-1.79	20.58	3.73	27.90	0.00	107	179	VERTICAL	Average
6	2485.70	72.64	74.00	-1.36	41.01	3.73	27.90	0.00	107	179	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2387.60	62.46	74.00	-11.54	30.88	3.68	27.90	0.00	133	337	VERTICAL	Peak
2	2390.00	47.12	54.00	-6.88	15.54	3.68	27.90	0.00	133	337	VERTICAL	Average
3	2458.60	105.65			74.03	3.72	27.90	0.00	133	337	VERTICAL	Average
4	2458.80	114.50			82.88	3.72	27.90	0.00	133	337	VERTICAL	Peak
5	2483.50	52.55	54.00	-1.45	20.92	3.73	27.90	0.00	133	337	VERTICAL	Average
6	2483.50	65.16	74.00	-8.84	33.53	3.73	27.90	0.00	133	337	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2452 MHz.

Note:

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

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

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11b CH 1, 6, 11 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2389.20	58.18	74.00	-15.82	26.60	3.68	27.90	0.00	110	293	VERTICAL	Peak
2	2390.00	44.60	54.00	-9.40	13.02	3.68	27.90	0.00	110	293	VERTICAL	Average
3	2411.20	115.32			83.73	3.69	27.90	0.00	110	293	VERTICAL	Average
4	2411.20	117.88			86.29	3.69	27.90	0.00	110	293	VERTICAL	Peak
5	2489.50	61.75	74.00	-12.25	30.12	3.73	27.90	0.00	110	293	VERTICAL	Peak
6	2491.20	52.58	54.00	-1.42	20.94	3.74	27.90	0.00	110	293	VERTICAL	Average

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2379.40	63.00	74.00	-11.00	31.43	3.67	27.90	0.00	158	304	VERTICAL	Peak
2	2390.00	46.71	54.00	-7.29	15.13	3.68	27.90	0.00	158	304	VERTICAL	Average
3	2436.20	119.88			88.27	3.71	27.90	0.00	158	304	VERTICAL	Average
4	2436.20	122.44			90.83	3.71	27.90	0.00	158	304	VERTICAL	Peak
5	2483.50	48.63	54.00	-5.37	17.00	3.73	27.90	0.00	158	304	VERTICAL	Average
6	2486.90	64.59	74.00	-9.41	32.96	3.73	27.90	0.00	158	304	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2382.80	52.68	54.00	-1.32	21.10	3.68	27.90	0.00	161	304	VERTICAL	Average
2	2383.40	61.88	74.00	-12.12	30.30	3.68	27.90	0.00	161	304	VERTICAL	Peak
3	2461.20	116.67			85.05	3.72	27.90	0.00	161	304	VERTICAL	Average
4	2461.20	119.18			87.56	3.72	27.90	0.00	161	304	VERTICAL	Peak
5	2483.90	46.14	54.00	-7.86	14.51	3.73	27.90	0.00	161	304	VERTICAL	Average
6	2486.30	60.00	74.00	-14.00	28.37	3.73	27.90	0.00	161	304	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11g CH 1, 6, 11 / Chain 1 + Chain 2 + Chain 3
Test Date	May 16, 2014		

Channel 1

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2390.00	51.55	54.00	-2.45	19.97	3.68	27.90	0.00	164	333	VERTICAL	Average
2	2390.00	72.03	74.00	-1.97	40.45	3.68	27.90	0.00	164	333	VERTICAL	Peak
3	2408.60	108.51			76.92	3.69	27.90	0.00	164	333	VERTICAL	Average
4	2408.80	119.11			87.52	3.69	27.90	0.00	164	333	VERTICAL	Peak
5	2489.00	50.57	54.00	-3.43	18.94	3.73	27.90	0.00	164	333	VERTICAL	Average
6	2489.00	62.44	74.00	-11.56	30.81	3.73	27.90	0.00	164	333	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2390.00	50.16	54.00	-3.84	18.58	3.68	27.90	0.00	134	338	VERTICAL	Average
2	2390.00	71.19	74.00	-2.81	39.61	3.68	27.90	0.00	134	338	VERTICAL	Peak
3	2432.80	125.87			94.27	3.70	27.90	0.00	134	338	VERTICAL	Peak
4	2443.60	115.52			83.91	3.71	27.90	0.00	134	338	VERTICAL	Average
5	2483.50	52.91	54.00	-1.09	21.28	3.73	27.90	0.00	134	338	VERTICAL	Average
6	2483.50	71.39	74.00	-2.61	39.76	3.73	27.90	0.00	134	338	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	Freq	Level	Limit Line	Over Limit	Read Level	Cable Loss	Antenna Factor	Preamp Factor	A/Pos	T/Pos	Pol/Phase	Remark
	MHz	dBuV/m	dBuV/m	dB	dBuV	dB	dB/m	dB	cm	deg		
1	2388.40	50.54	54.00	-3.46	18.96	3.68	27.90	0.00	131	333	VERTICAL	Average
2	2389.60	64.80	74.00	-9.20	33.22	3.68	27.90	0.00	131	333	VERTICAL	Peak
3	2458.80	121.00			89.38	3.72	27.90	0.00	131	333	VERTICAL	Peak
4	2459.00	110.39			78.77	3.72	27.90	0.00	131	333	VERTICAL	Average
5	2483.50	50.33	54.00	-3.67	18.70	3.73	27.90	0.00	131	333	VERTICAL	Average
6	2483.70	72.58	74.00	-1.42	40.95	3.73	27.90	0.00	131	333	VERTICAL	Peak

Item 3, 4 are the fundamental frequency at 2462 MHz.

Note:

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

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

<For Beamforming Mode>

Temperature	23°C	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT20 CH 1, 6, 11 / Chain 1 + Chain 2 + Chain 3
Test date	May 17, 2014		

Channel 1

	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	2387.80	70.58	74.00	-3.42	38.44	4.09	28.05	0.00	Peak	165	179	VERTICAL
2	2389.80	52.88	54.00	-1.12	20.74	4.09	28.05	0.00	Average	165	179	VERTICAL
3	2410.00	118.52			86.32	4.11	28.09	0.00	Peak	165	179	VERTICAL
4	2410.20	106.93			74.73	4.11	28.09	0.00	Average	165	179	VERTICAL

Item 3, 4 are the fundamental frequency at 2412 MHz.

Channel 6

	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	2390.00	49.44	54.00	-4.56	17.30	4.09	28.05	0.00	Average	148	176	VERTICAL
2	2390.00	69.18	74.00	-4.82	37.04	4.09	28.05	0.00	Peak	148	176	VERTICAL
3	2443.80	123.55			91.24	4.13	28.18	0.00	Peak	148	176	VERTICAL
4	2444.60	112.10			79.79	4.13	28.18	0.00	Average	148	176	VERTICAL
5	2484.30	52.70	54.00	-1.30	20.28	4.16	28.26	0.00	Average	148	176	VERTICAL
6	2485.10	71.48	74.00	-2.52	39.02	4.16	28.30	0.00	Peak	148	176	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 11

	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	2470.20	106.29			73.89	4.14	28.26	0.00	Average	177	184	VERTICAL
2	2470.40	117.20			84.80	4.14	28.26	0.00	Peak	177	184	VERTICAL
3	2484.70	52.64	54.00	-1.36	20.22	4.16	28.26	0.00	Average	177	184	VERTICAL
4	2485.30	70.23	74.00	-3.77	37.77	4.16	28.30	0.00	Peak	177	184	VERTICAL

Item 1, 2 are the fundamental frequency at 2462 MHz.

Temperature	23℃	Humidity	61%
Test Engineer	James Chou	Configurations	IEEE 802.11ac MCS0/Nss1 VHT40 CH 3, 6, 9 / Chain 1 + Chain 2 + Chain 3
Test date	May 17, 2014		

Channel 3

	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	2384.80	68.42	74.00	-5.58	36.29	4.08	28.05	0.00	Peak	145	175	VERTICAL
2	2386.40	52.40	54.00	-1.60	20.26	4.09	28.05	0.00	Average	145	175	VERTICAL
3	2419.60	114.01			81.76	4.12	28.13	0.00	Peak	145	175	VERTICAL
4	2424.40	102.45			70.20	4.12	28.13	0.00	Average	145	175	VERTICAL

Item 3, 4 are the fundamental frequency at 2422 MHz.

Channel 6

	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	2390.00	52.72	54.00	-1.28	20.58	4.09	28.05	0.00	Average	108	338	VERTICAL
2	2390.00	70.68	74.00	-3.32	38.54	4.09	28.05	0.00	Peak	108	338	VERTICAL
3	2441.80	117.70			85.39	4.13	28.18	0.00	Peak	108	338	VERTICAL
4	2449.80	105.75			73.44	4.13	28.18	0.00	Average	108	338	VERTICAL
5	2483.50	50.41	54.00	-3.59	17.99	4.16	28.26	0.00	Average	108	338	VERTICAL
6	2485.10	67.82	74.00	-6.18	35.36	4.16	28.30	0.00	Peak	108	338	VERTICAL

Item 3, 4 are the fundamental frequency at 2437 MHz.

Channel 9

	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	2468.80	115.05			82.65	4.14	28.26	0.00	Peak	116	197	VERTICAL
2	2469.20	103.72			71.32	4.14	28.26	0.00	Average	116	197	VERTICAL
3	2483.50	52.41	54.00	-1.59	19.99	4.16	28.26	0.00	Average	116	197	VERTICAL
4	2485.50	69.01	74.00	-4.99	36.55	4.16	28.30	0.00	Peak	116	197	VERTICAL

Item 1, 2 are the fundamental frequency at 2452 MHz.

Note:

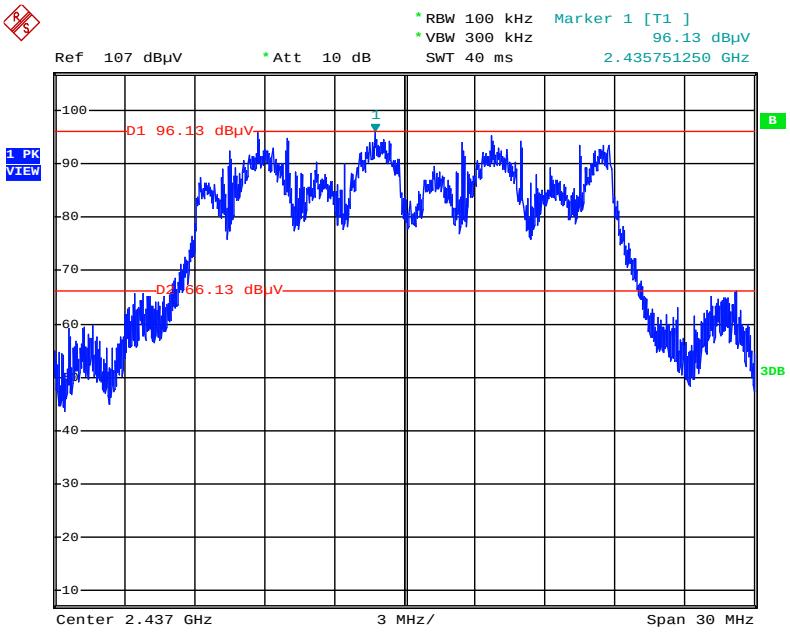
Emission level (dBuV/m) = 20 log Emission level (uV/m).

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

<For Non-Beamforming Mode>

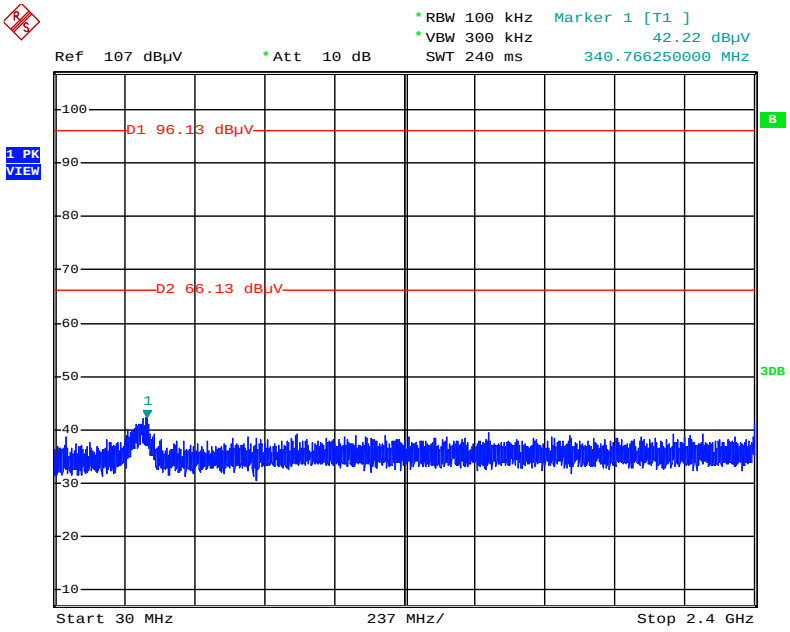
For Emission not in Restricted Band

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



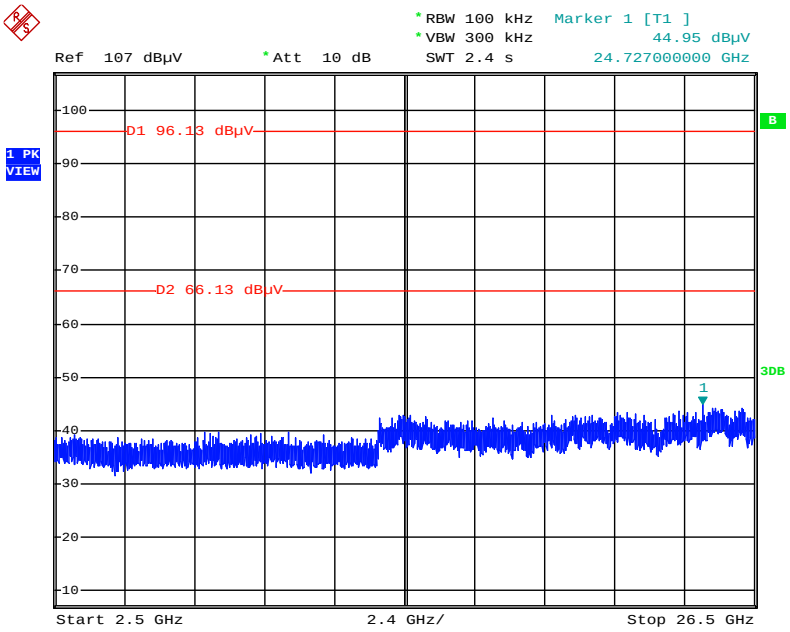
Date: 17.MAY.2014 08:37:28

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



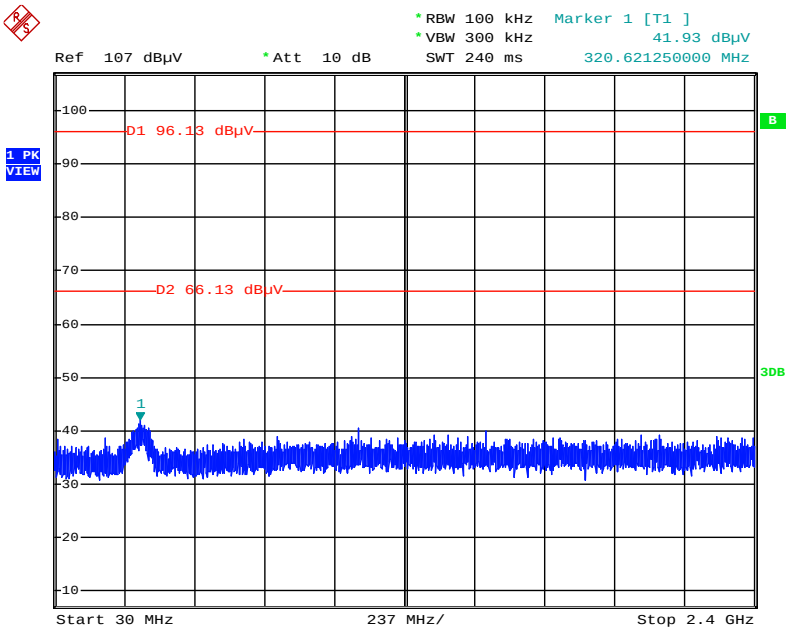
Date: 17.MAY.2014 08:38:26

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



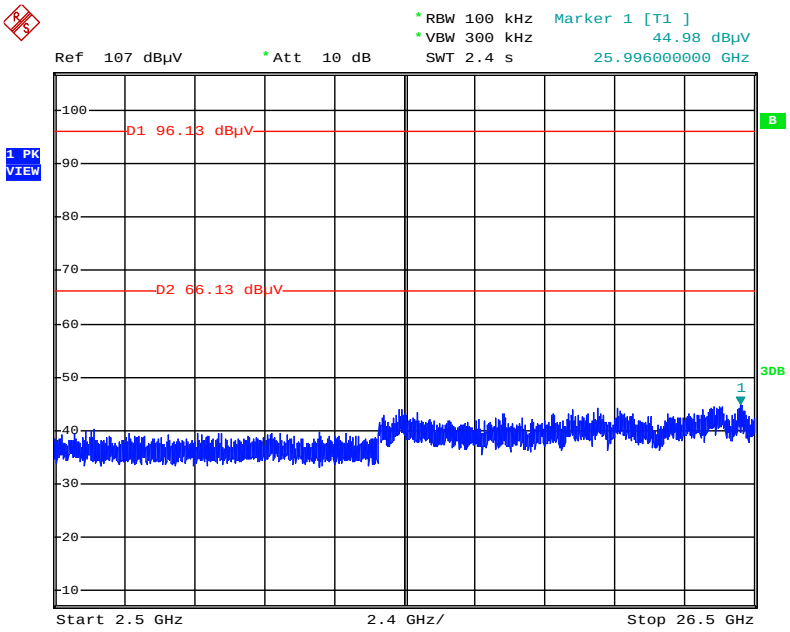
Date: 17.MAY.2014 08:39:01

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



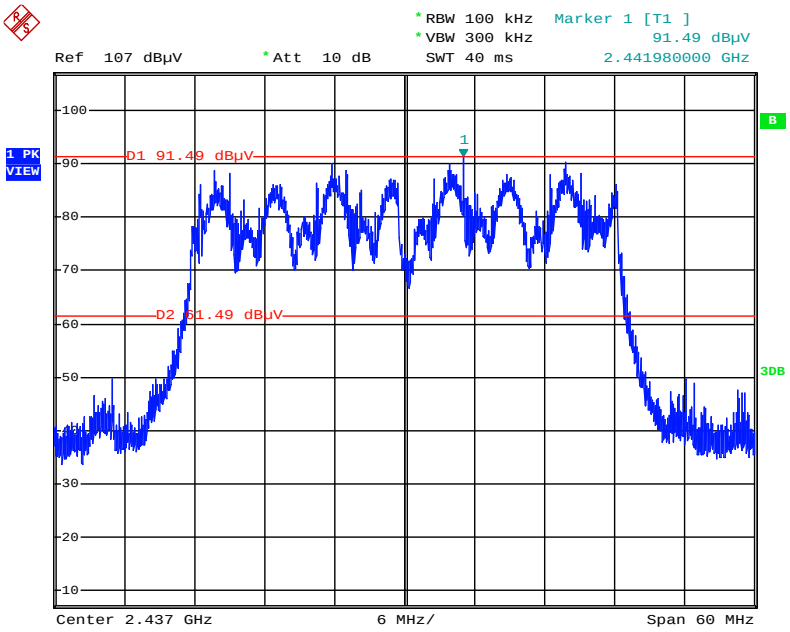
Date: 17.MAY.2014 08:40:20

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



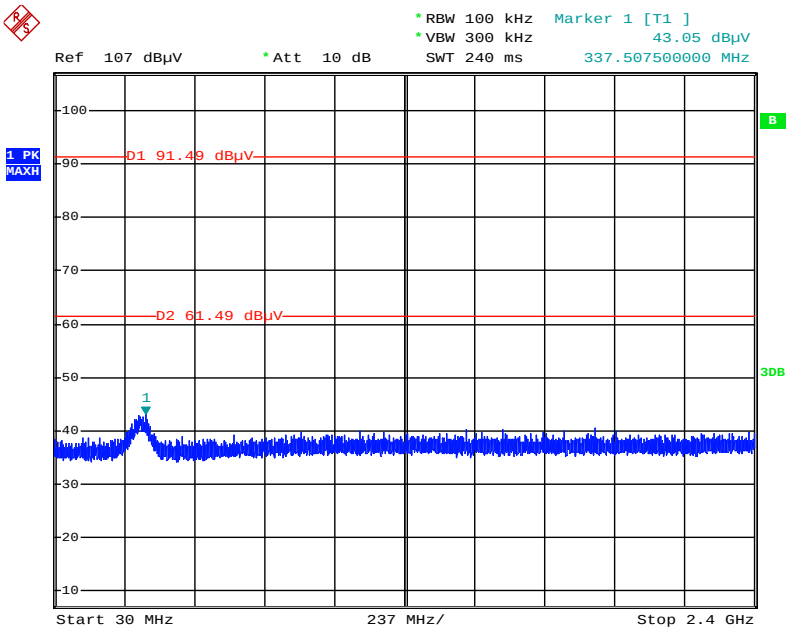
Date: 17.MAY.2014 08:40:03

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



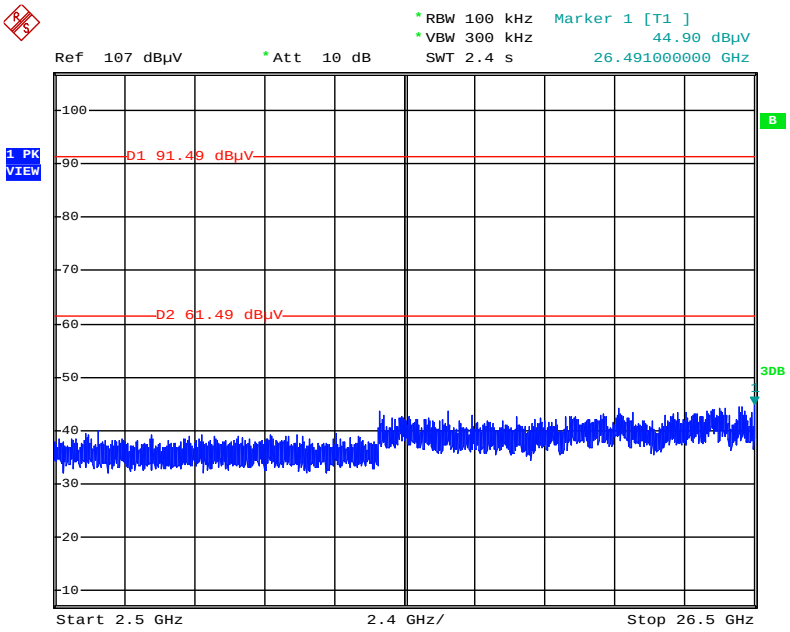
Date: 17.MAY.2014 08:43:33

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



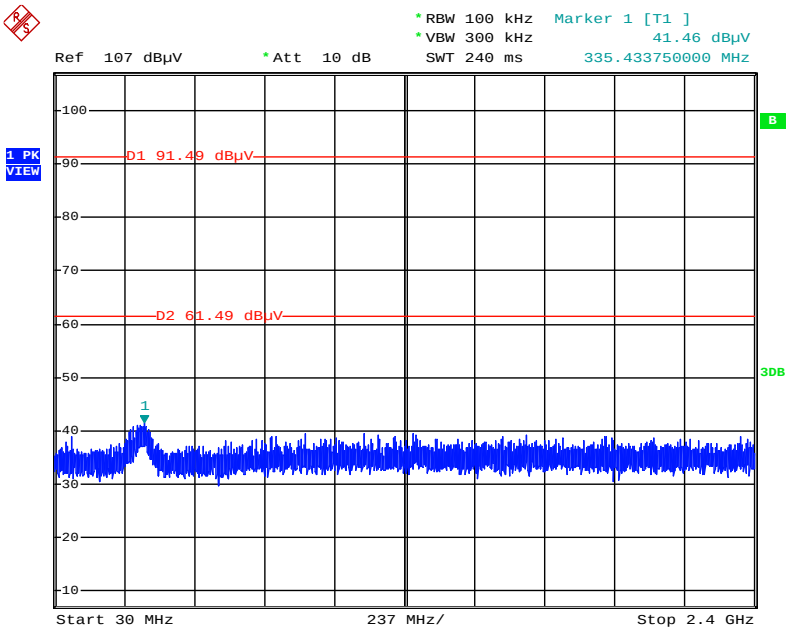
Date: 17.MAY.2014 08:45:39

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



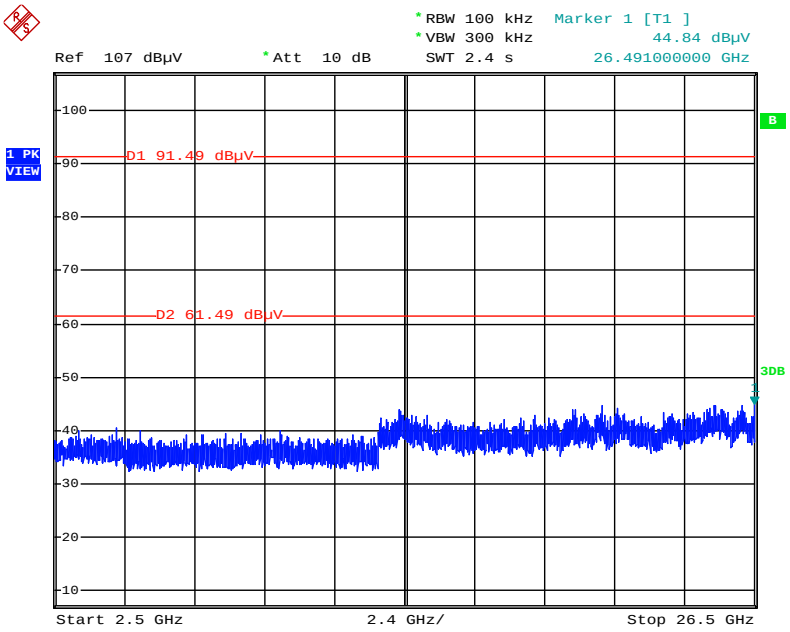
Date: 17.MAY.2014 08:44:34

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



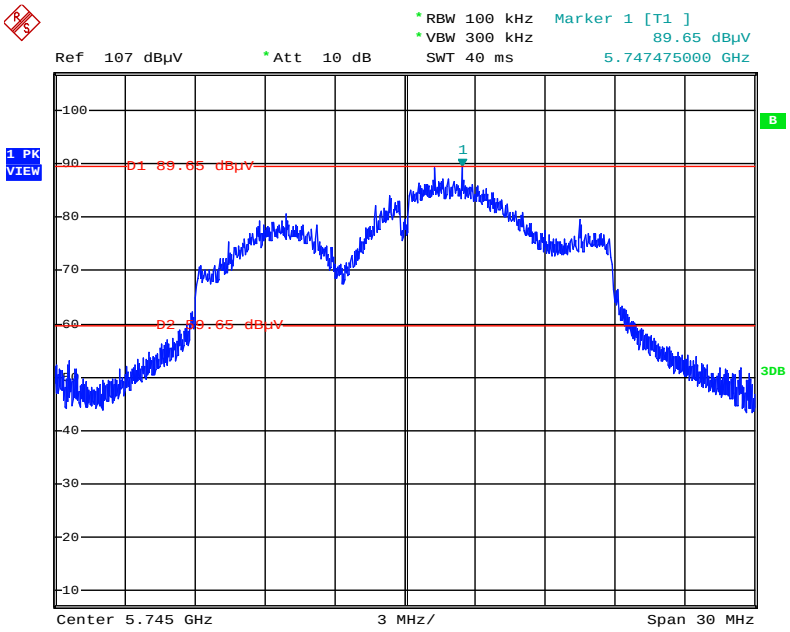
Date: 17.MAY.2014 08:46:50

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



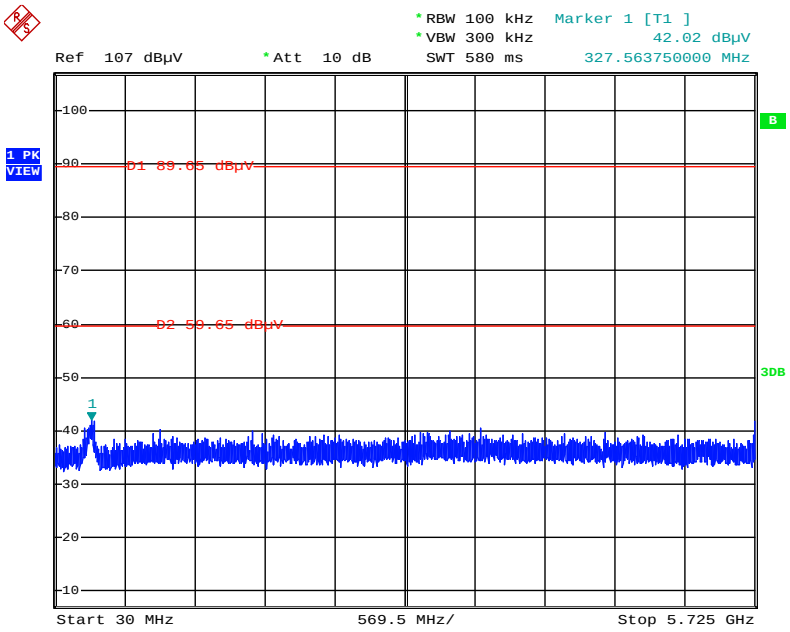
Date: 17.MAY.2014 08:47:37

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



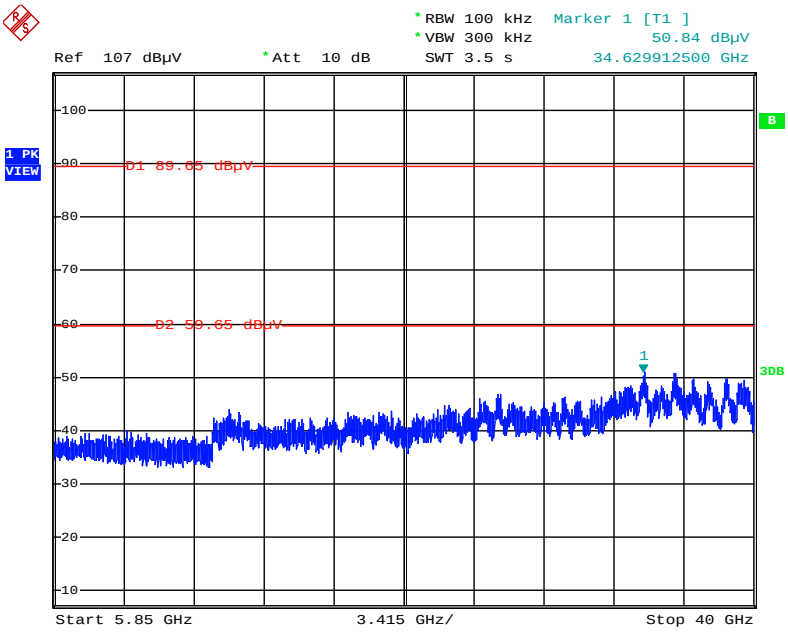
Date: 17.MAY.2014 07:36:21

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 30MHz~5725MHz (down 30dBc)



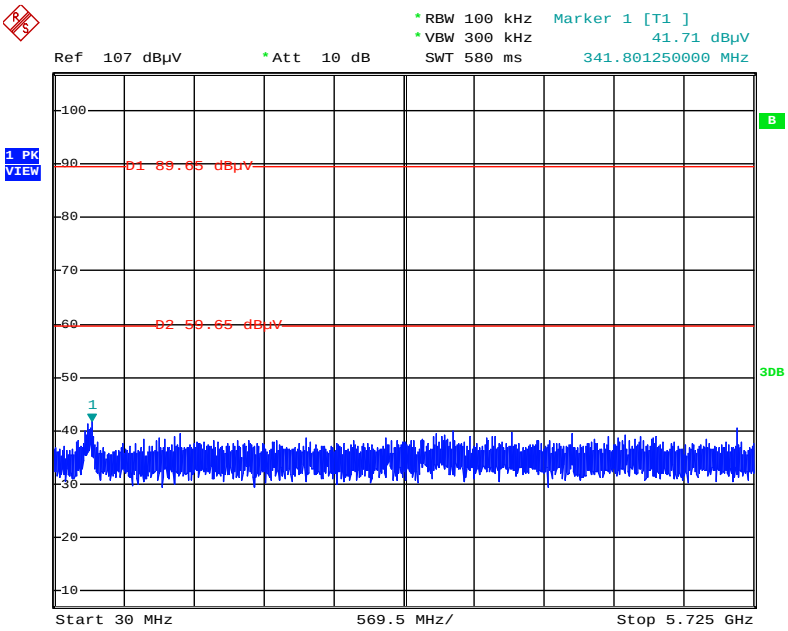
Date: 17.MAY.2014 07:37:48

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 5850MHz~40000MHz (down 30dBc)



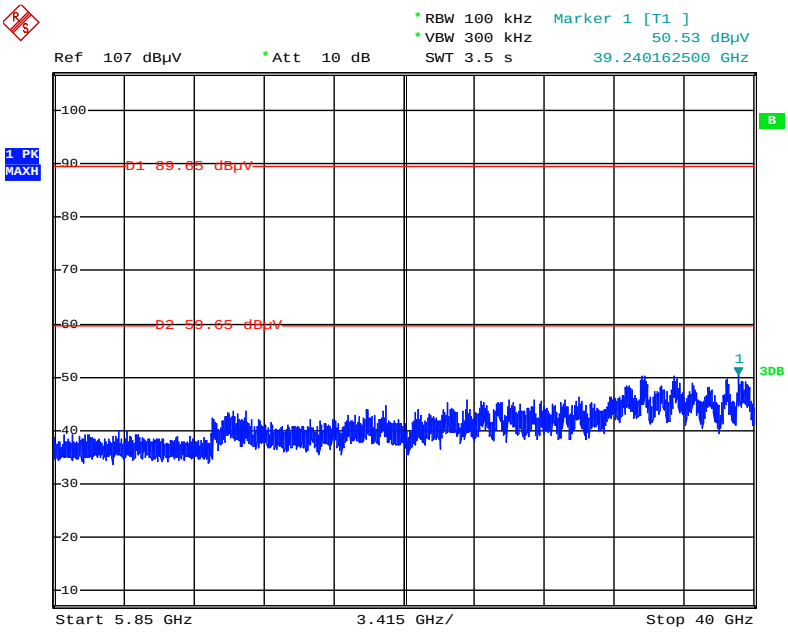
Date: 17.MAY.2014 07:38:23

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 30MHz~5725MHz (down 30dBc)



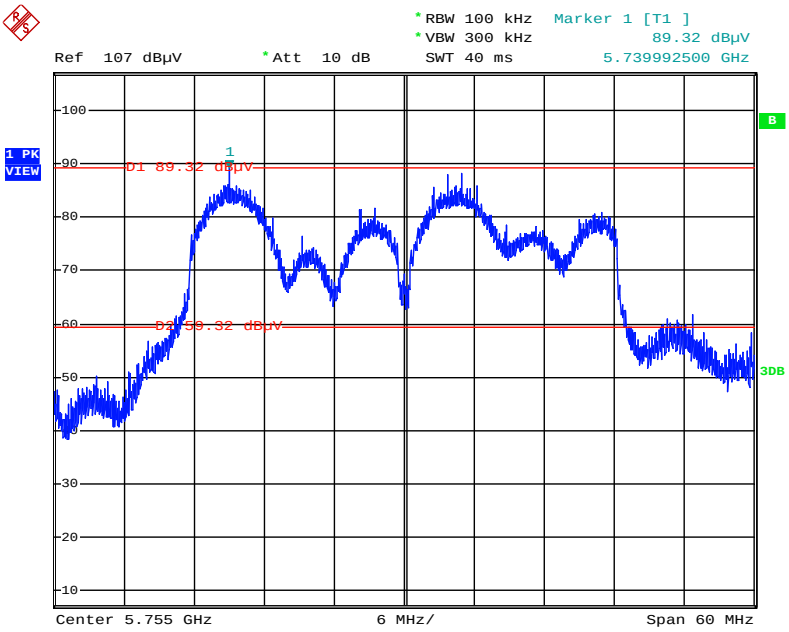
Date: 17.MAY.2014 07:39:42

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 5850MHz~40000MHz (down 30dBc)



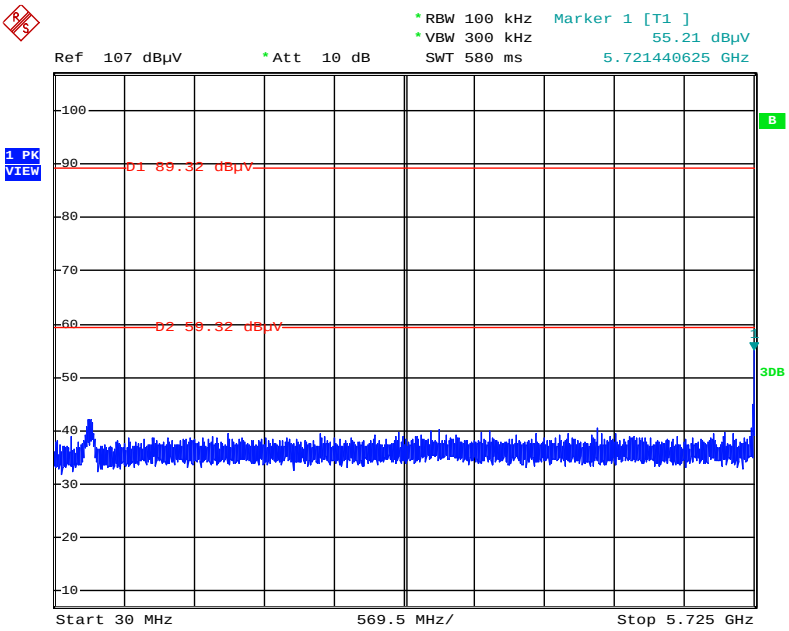
Date: 17.MAY.2014 07:39:10

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



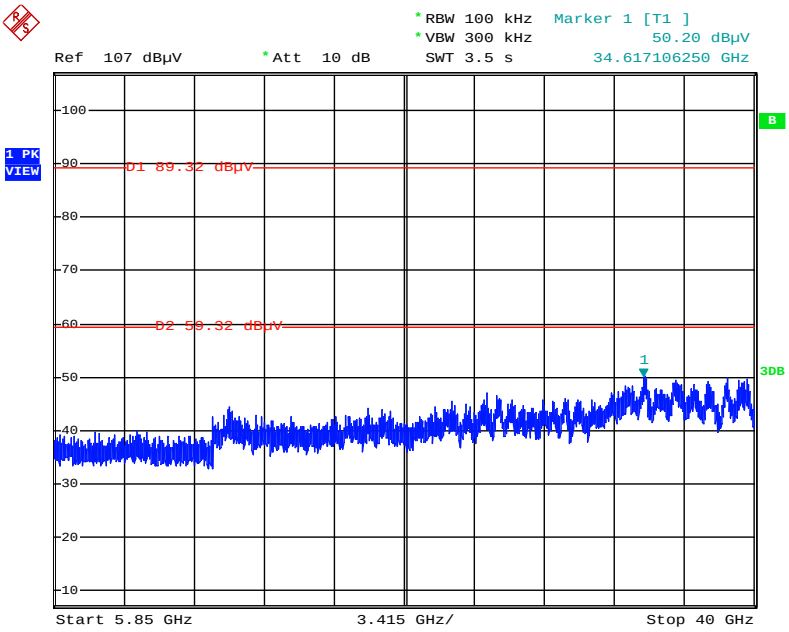
Date: 17.MAY.2014 07:50:17

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 30MHz~5725MHz (down 30dBc)



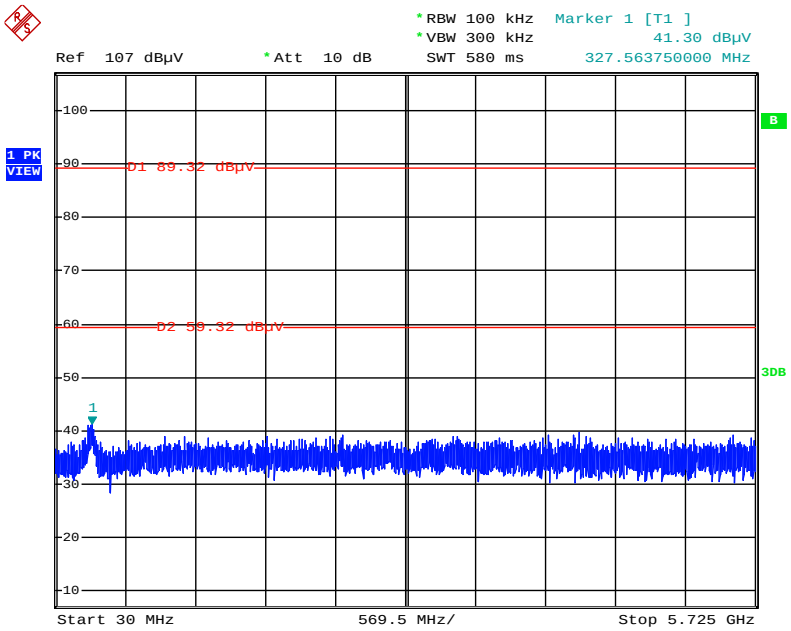
Date: 17.MAY.2014 07:50:47

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 5850MHz~40000MHz (down 30dBc)



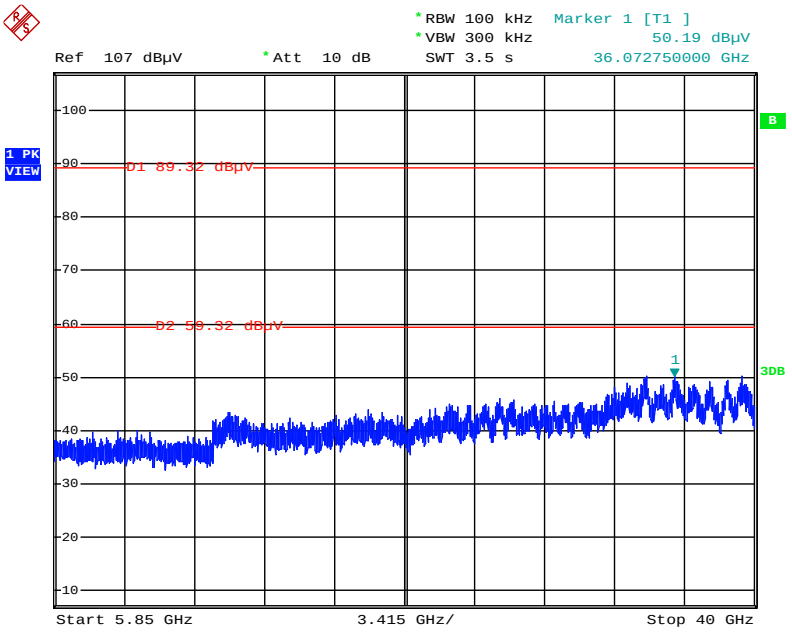
Date: 17.MAY.2014 07:51:16

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 30MHz~5725MHz (down 30dBc)



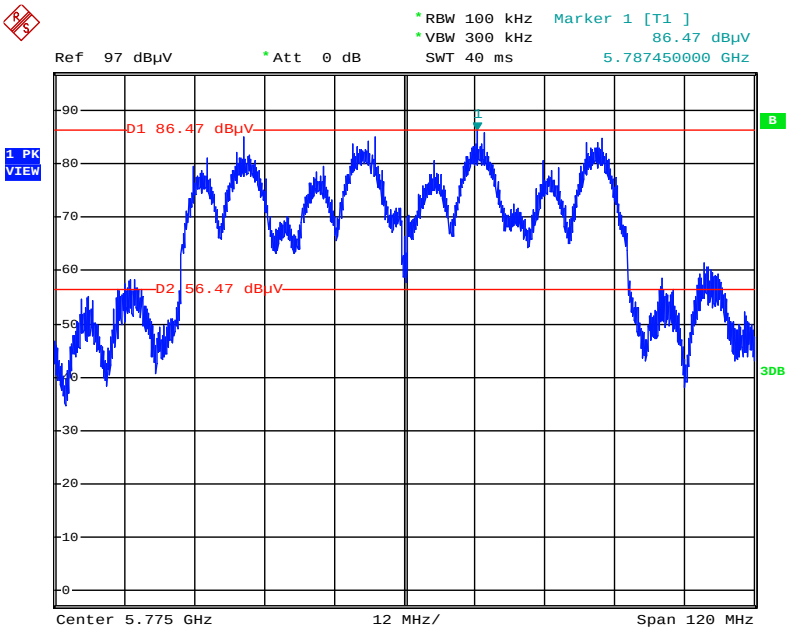
Date: 17.MAY.2014 07:52:19

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 5850MHz~40000MHz (down 30dBc)



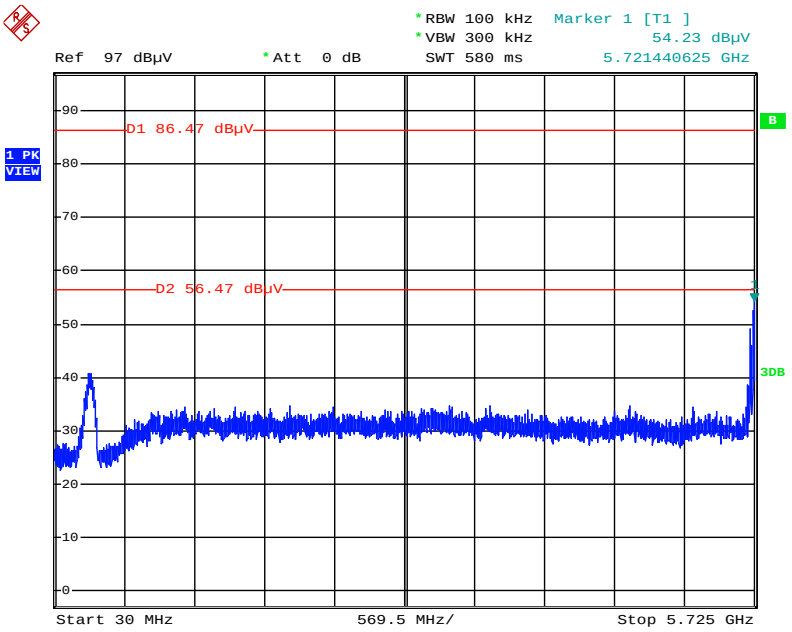
Date: 17.MAY.2014 07:52:00

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Reference Level



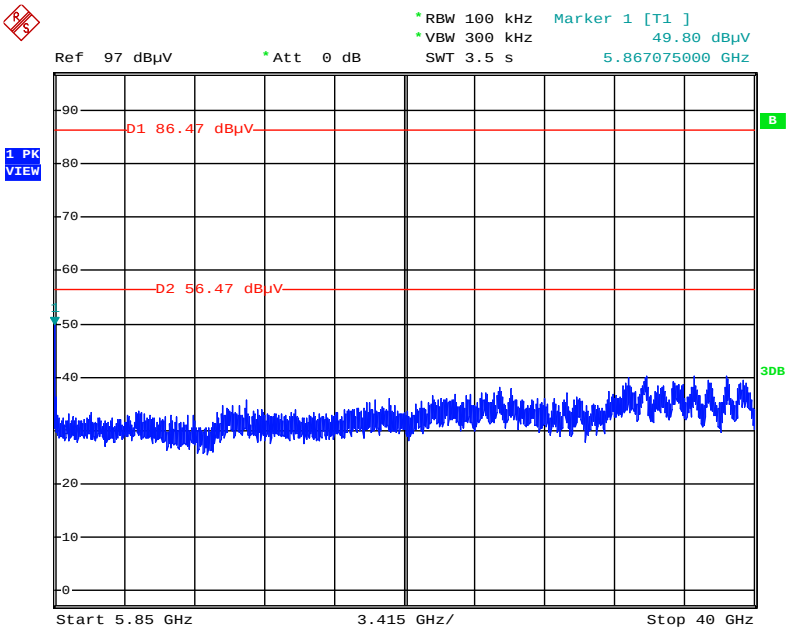
Date: 17.MAY.2014 07:57:37

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 30MHz~5725MHz (down 30dBc)



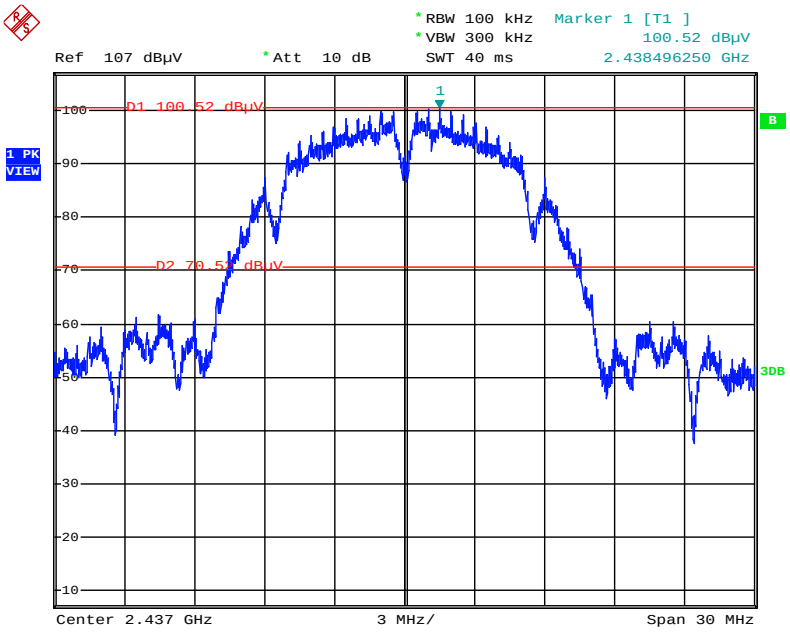
Date: 17.MAY.2014 07:58:21

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 5850MHz~40000MHz (down 30dBc)



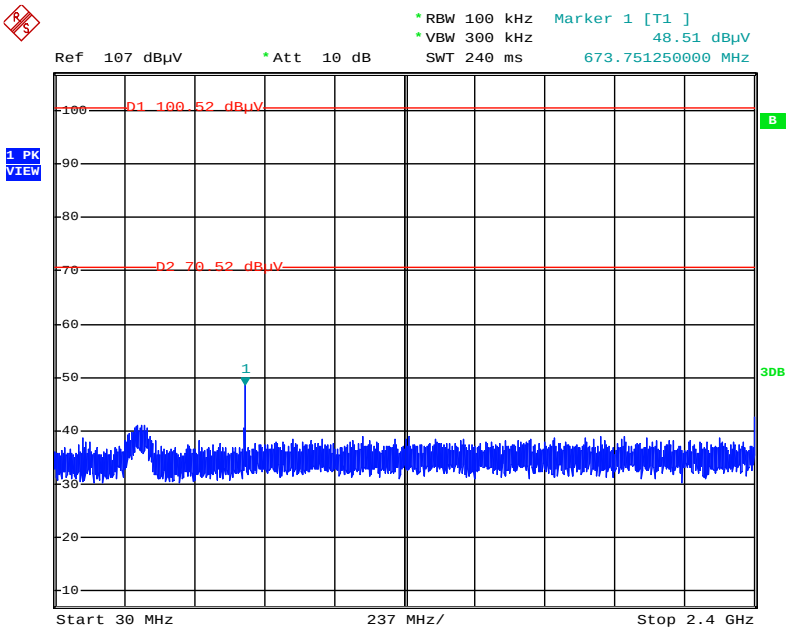
Date: 17.MAY.2014 07:58:43

Plot on Configuration IEEE 802.11b / Reference Level



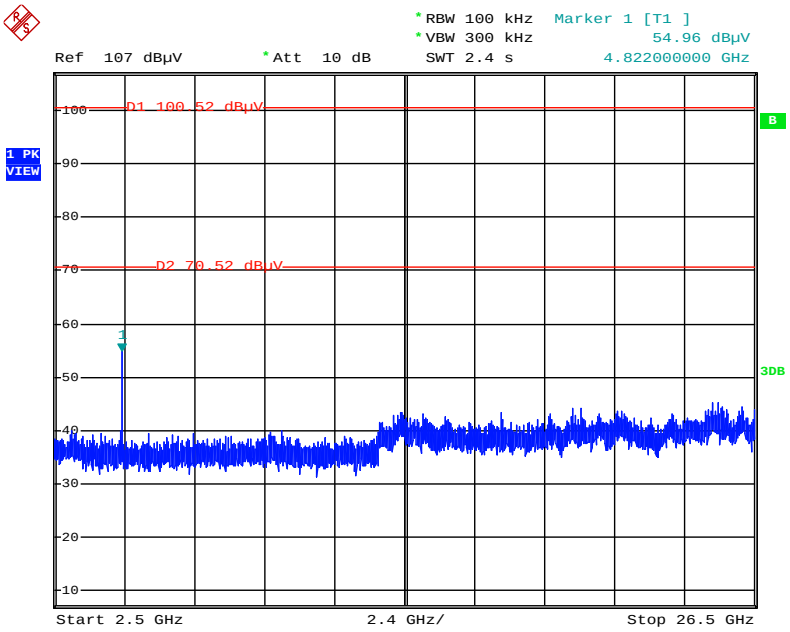
Date: 17.MAY.2014 08:23:23

Plot on Configuration IEEE 802.11b / CH 1 / 30MHz~2400MHz (down 30dBc)



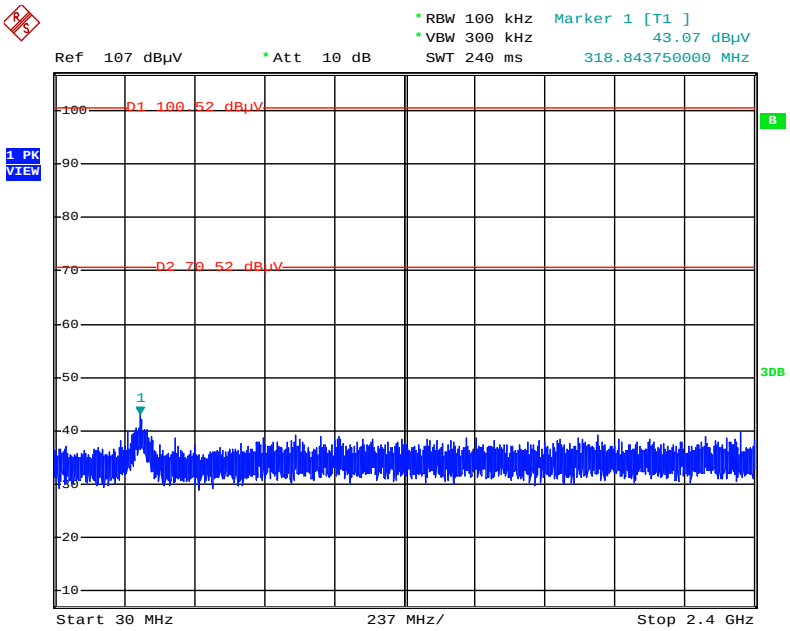
Date: 17.MAY.2014 08:26:19

Plot on Configuration IEEE 802.11b / CH 1 / 2500MHz~26500MHz (down 30dBc)



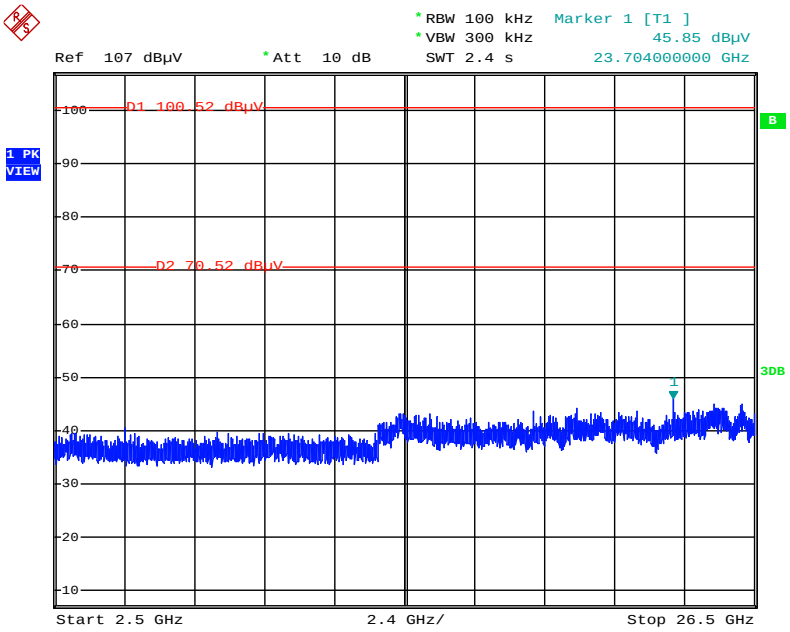
Date: 17.MAY.2014 08:26:03

Plot on Configuration IEEE 802.11b / CH 11 / 30MHz~2400MHz (down 30dBc)



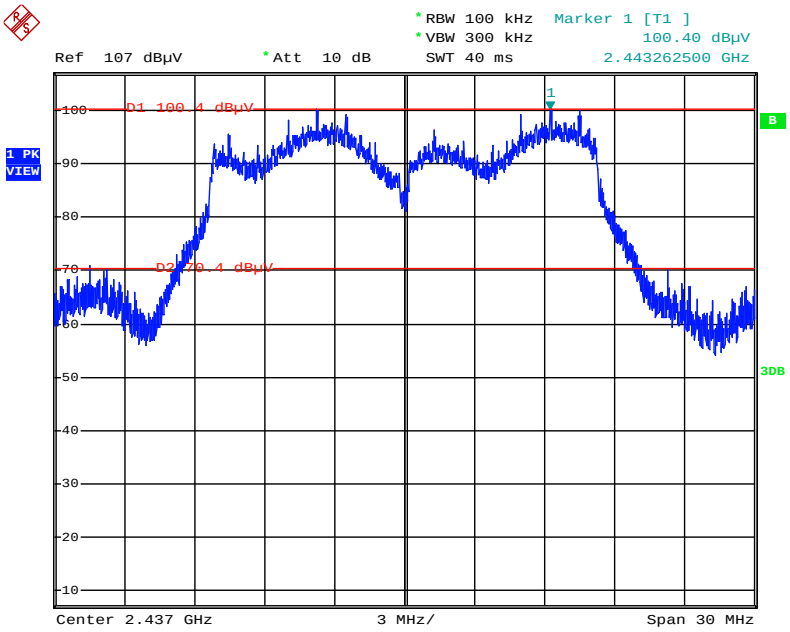
Date: 17.MAY.2014 08:33:54

Plot on Configuration IEEE 802.11b / CH 11 / 2500MHz~26500MHz (down 30dBc)



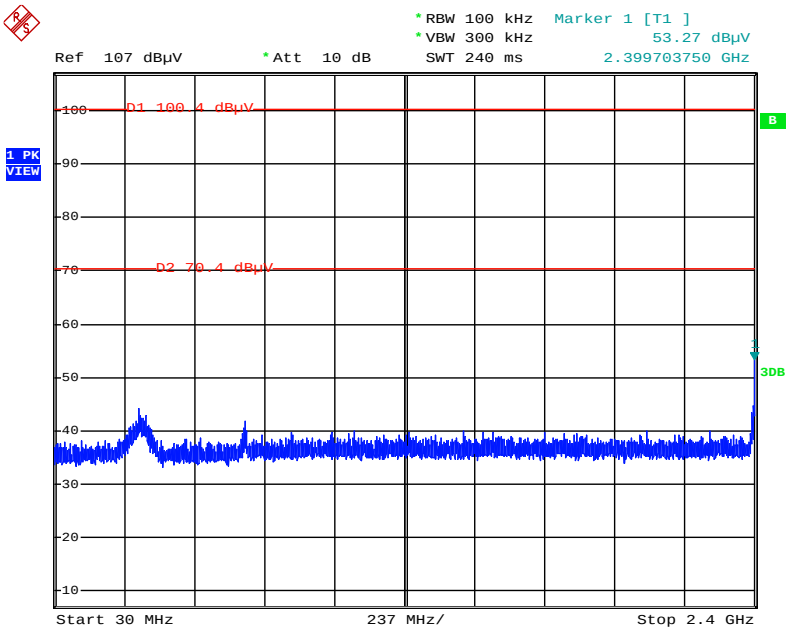
Date: 17.MAY.2014 08:34:20

Plot on Configuration IEEE 802.11g / Reference Level



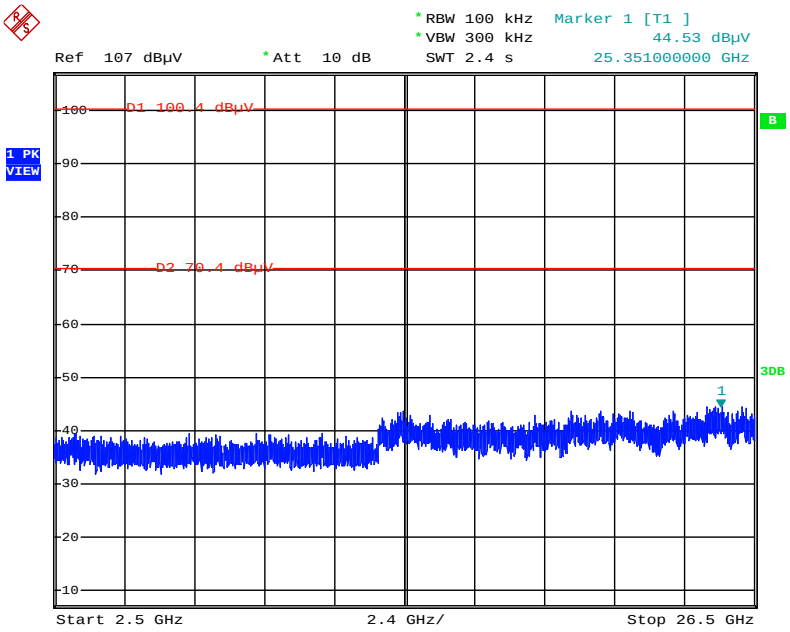
Date: 17.MAY.2014 08:29:24

Plot on Configuration IEEE 802.11g / CH 1 / 30MHz~2400MHz (down 30dBc)



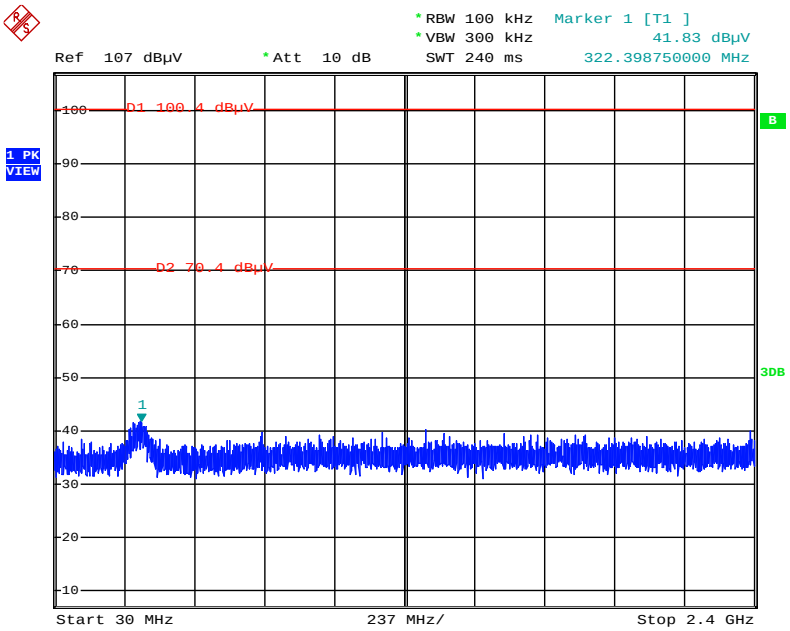
Date: 17.MAY.2014 08:30:59

Plot on Configuration IEEE 802.11g / CH 1 / 2500MHz~26500MHz (down 30dBc)



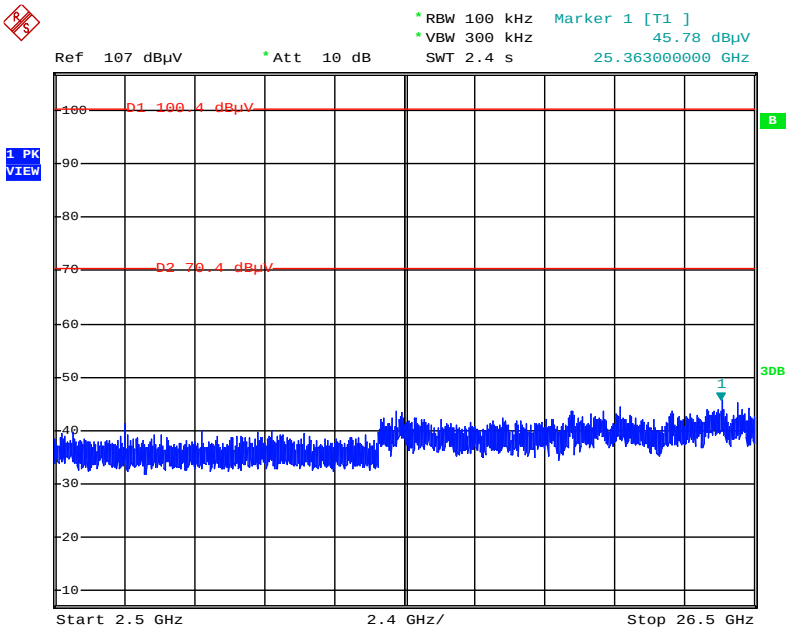
Date: 17.MAY.2014 08:31:23

Plot on Configuration IEEE 802.11g / CH 11 / 30MHz~2400MHz (down 30dBc)



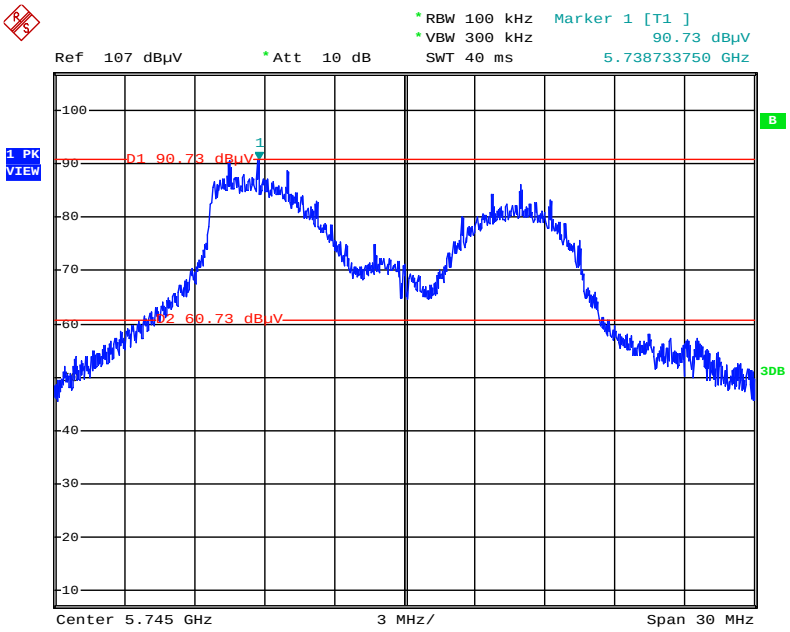
Date: 17.MAY.2014 08:33:09

Plot on Configuration IEEE 802.11g / CH 11 / 2500MHz~26500MHz (down 30dBc)



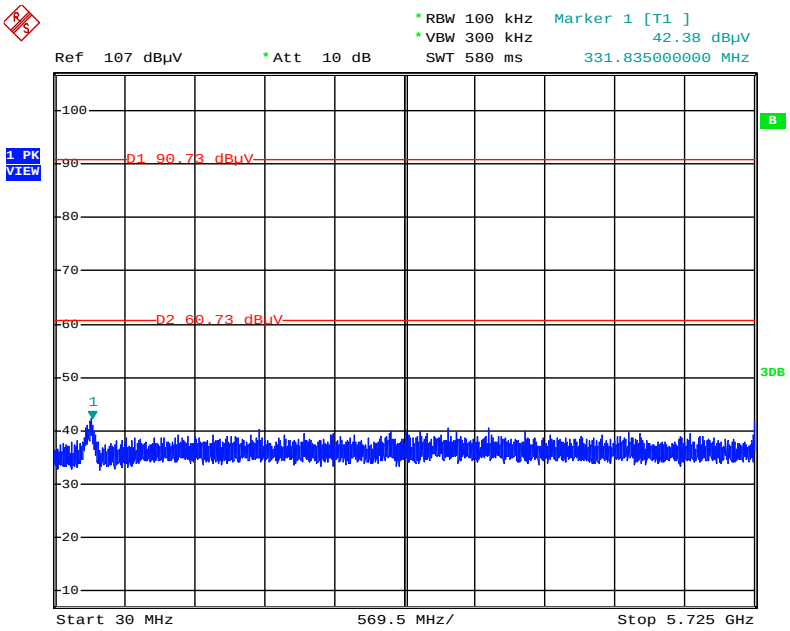
Date: 17.MAY.2014 08:32:40

Plot on Configuration IEEE 802.11a / Reference Level



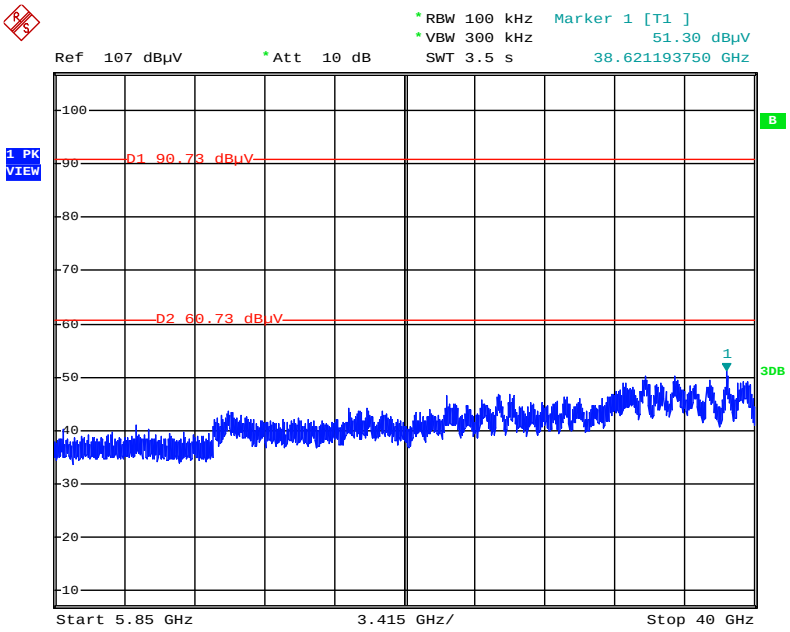
Date: 17.MAY.2014 07:18:16

Plot on Configuration IEEE 802.11a / CH 149 / 30MHz~5725MHz (down 30dBc)



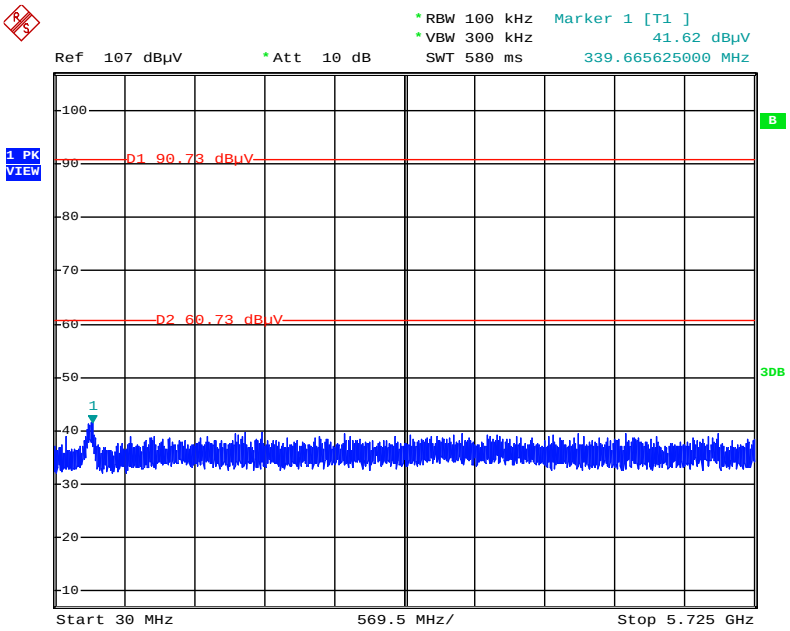
Date: 17.MAY.2014 07:19:08

Plot on Configuration IEEE 802.11a / CH 149 / 5850MHz~40000MHz (down 30dBc)



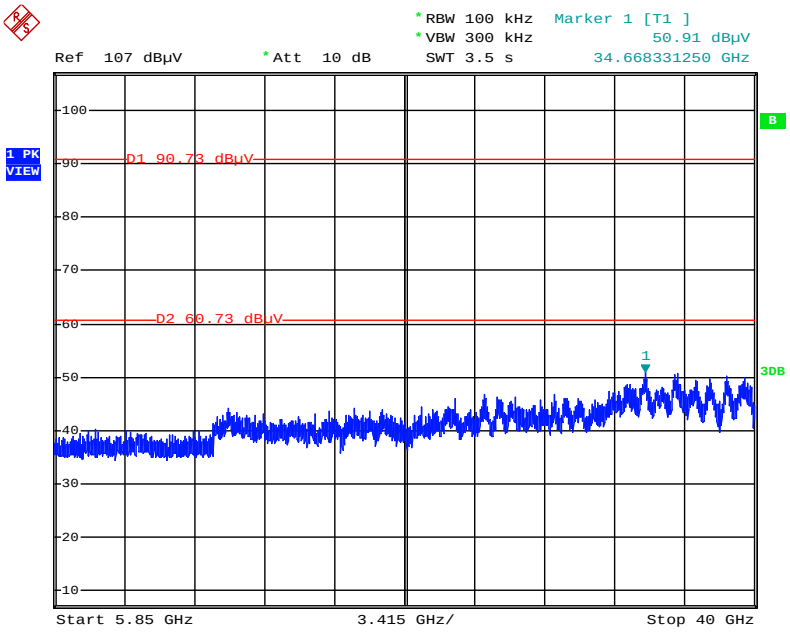
Date: 17.MAY.2014 07:21:54

Plot on Configuration IEEE 802.11a / CH 165 / 30MHz~5725MHz (down 30dBc)



Date: 17.MAY.2014 07:26:10

Plot on Configuration IEEE 802.11a / CH 165 / 5850MHz~40000MHz (down 30dBc)

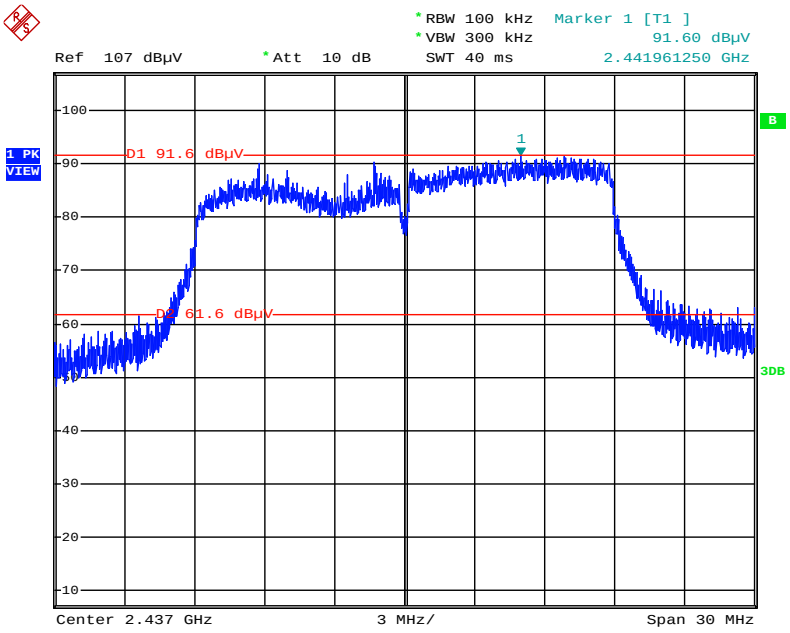


Date: 17.MAY.2014 07:25:26

<For Beamforming Mode>

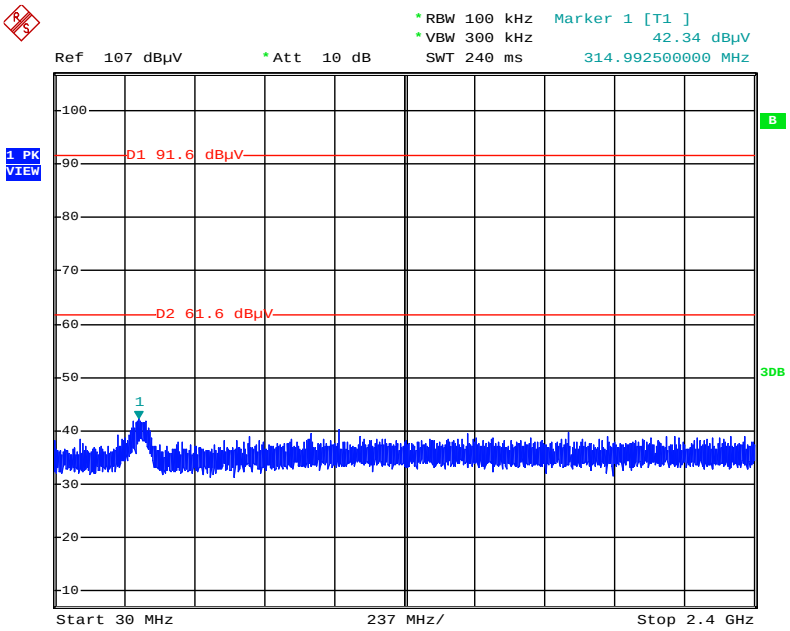
For Emission not in Restricted Band

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



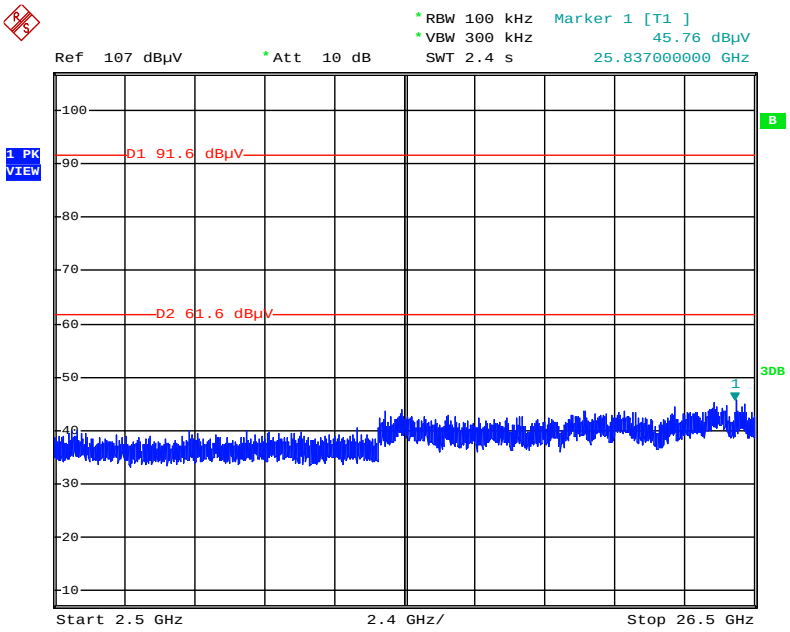
Date: 17.MAY.2014 12:27:16

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 30MHz~2400MHz (down 30dBc)



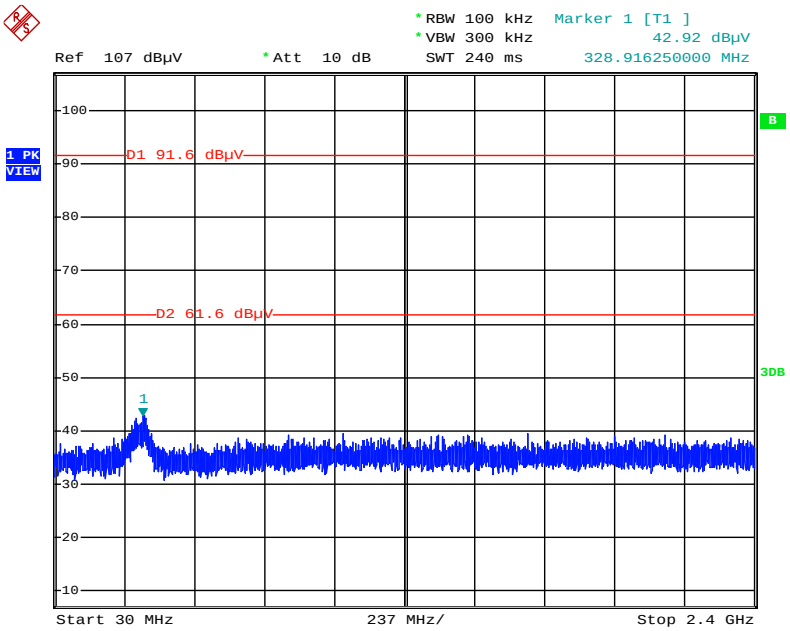
Date: 17.MAY.2014 12:28:06

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 1 / 2500MHz~26500MHz (down 30dBc)



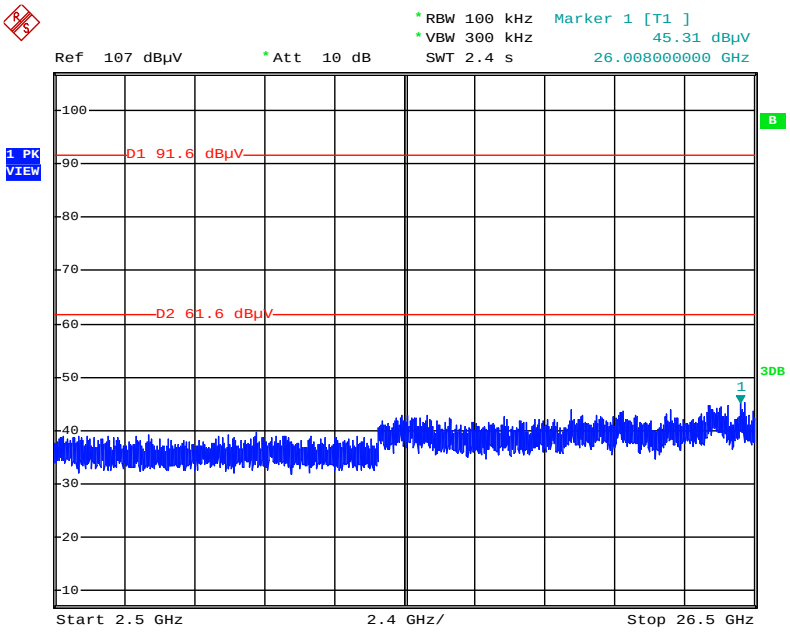
Date: 17.MAY.2014 12:29:04

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 30MHz~2400MHz (down 30dBc)



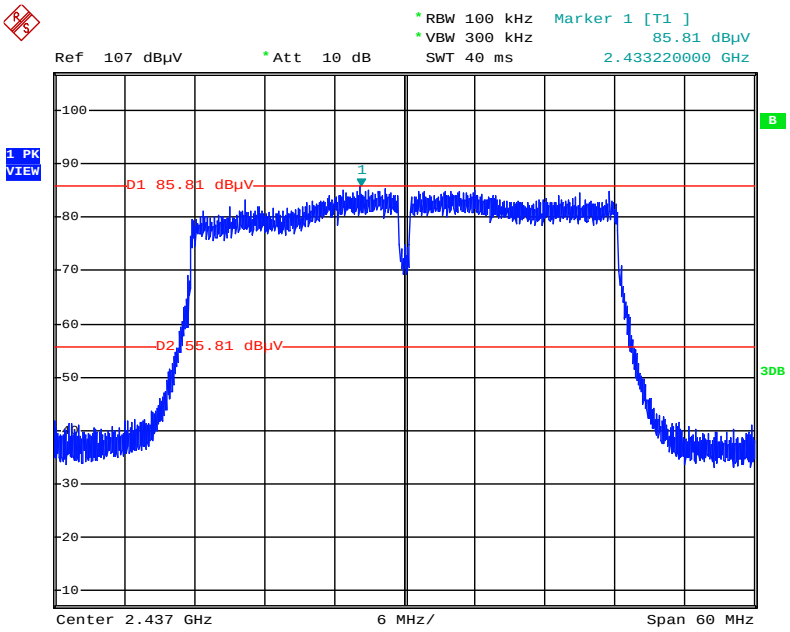
Date: 17.MAY.2014 12:31:07

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 11 / 2500MHz~26500MHz (down 30dBc)



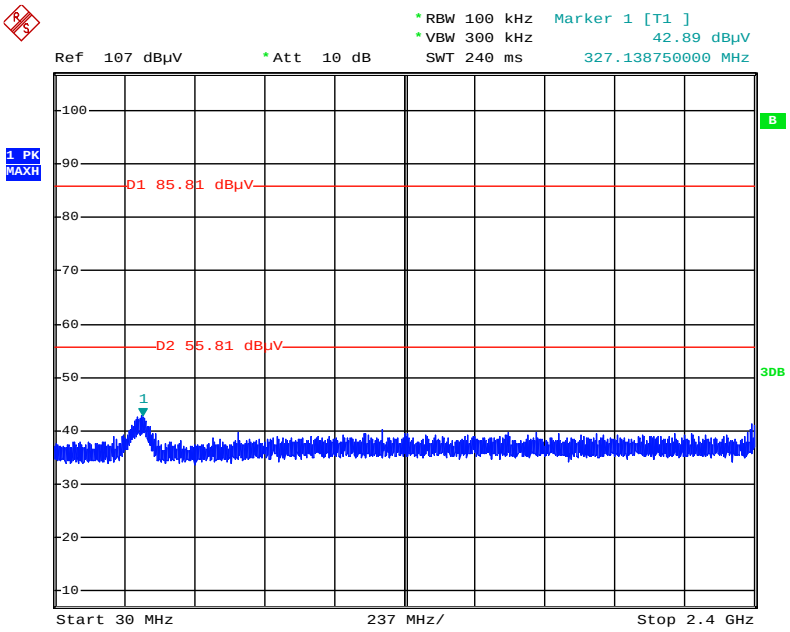
Date: 17.MAY.2014 12:30:49

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



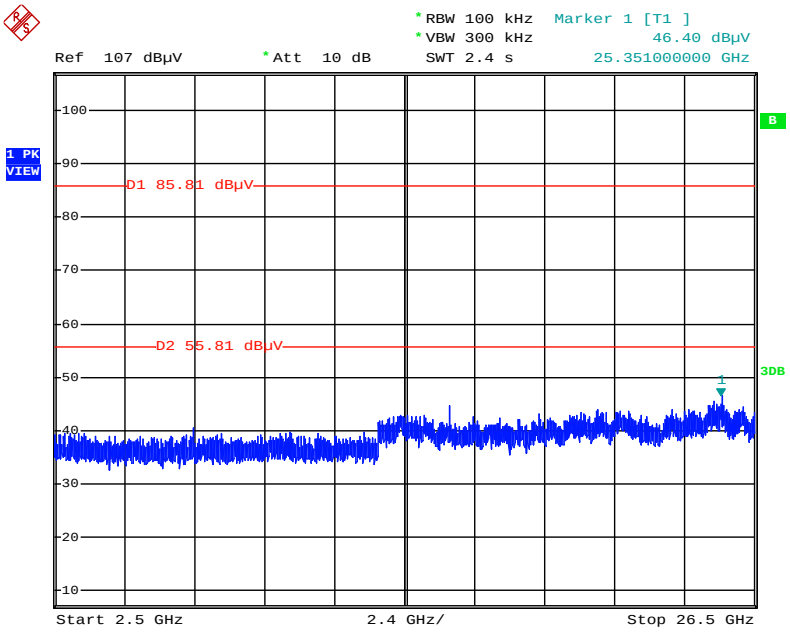
Date: 17.MAY.2014 12:36:19

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 30MHz~2400MHz (down 30dBc)



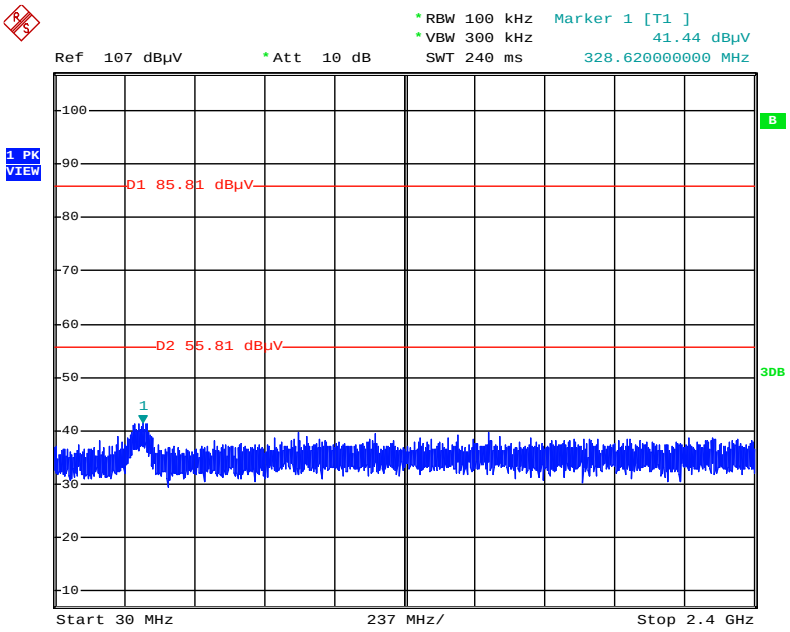
Date: 17.MAY.2014 12:37:38

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 3 / 2500MHz~26500MHz (down 30dBc)



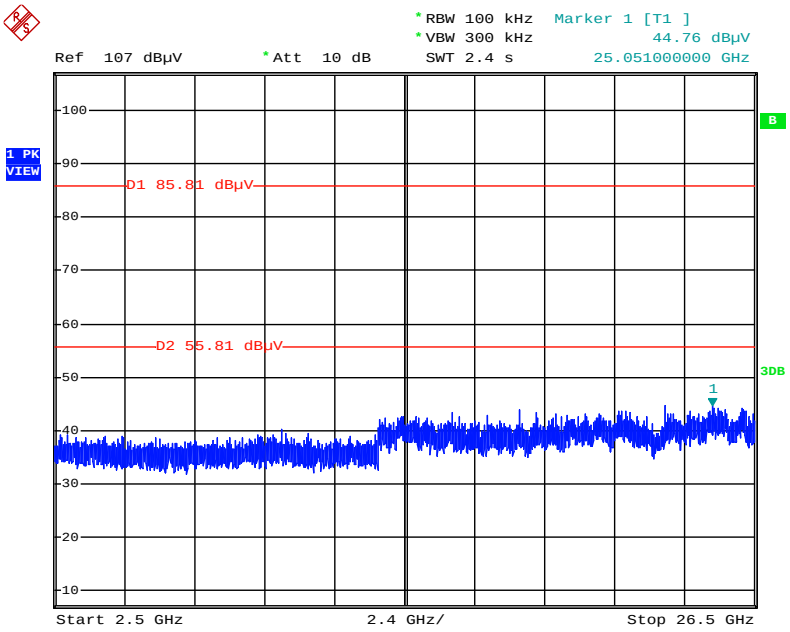
Date: 17.MAY.2014 12:38:33

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 30MHz~2400MHz (down 30dBc)



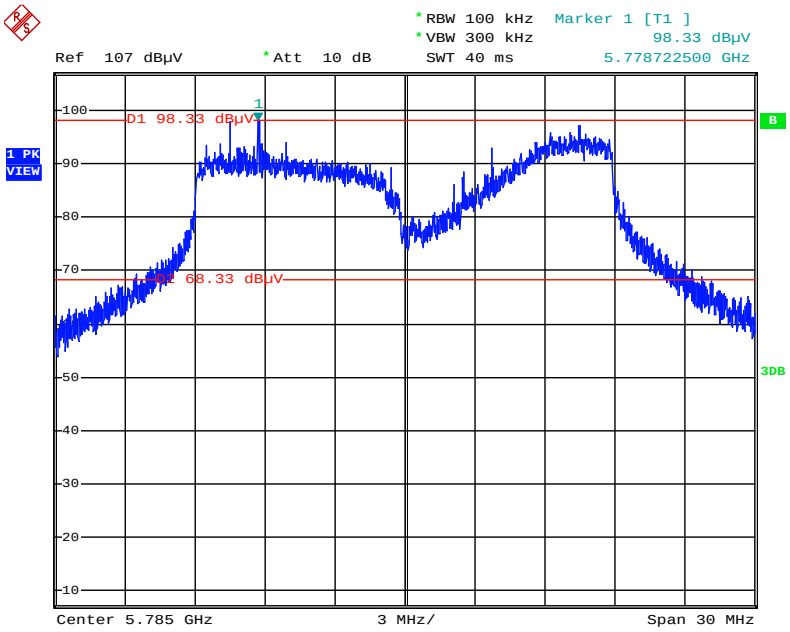
Date: 17.MAY.2014 12:39:39

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 9 / 2500MHz~26500MHz (down 30dBc)



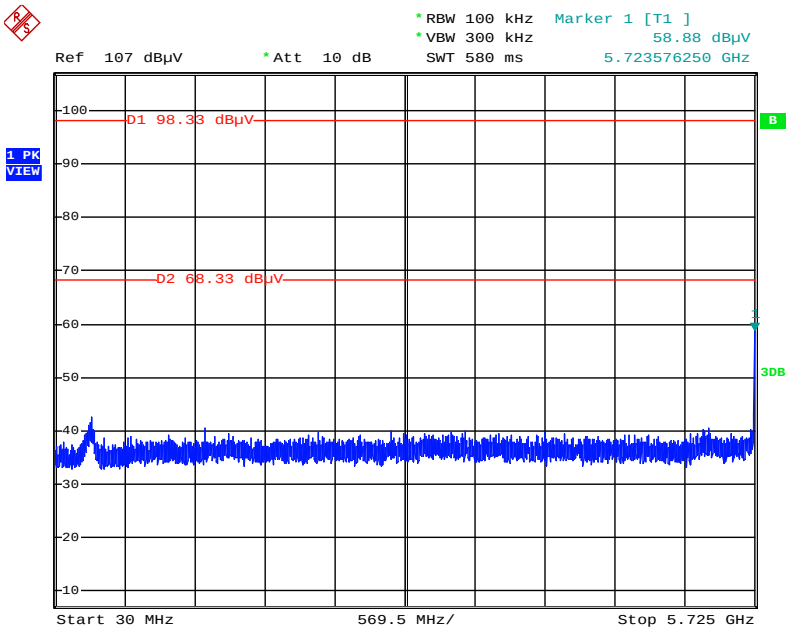
Date: 17.MAY.2014 12:39:17

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / Reference Level



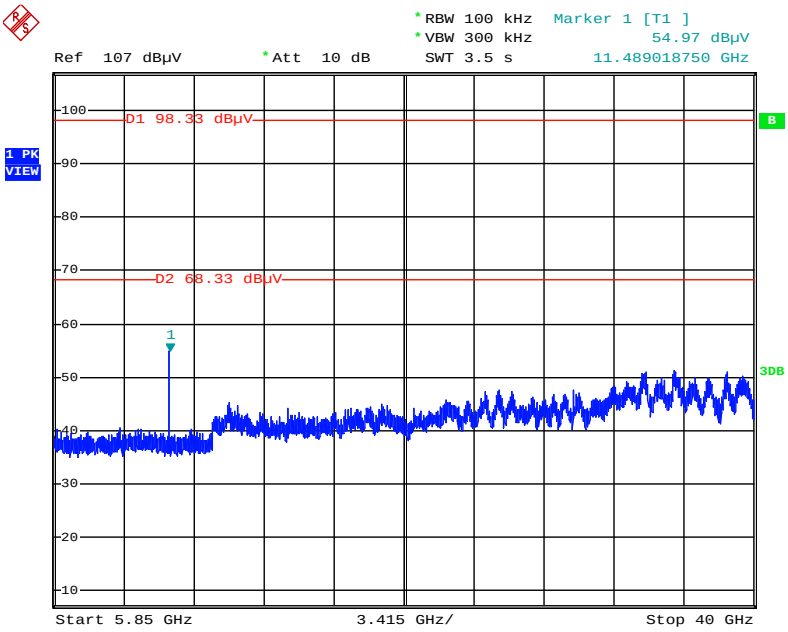
Date: 20.MAY.2014 03:09:19

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 30MHz~5725MHz (down 30dBc)



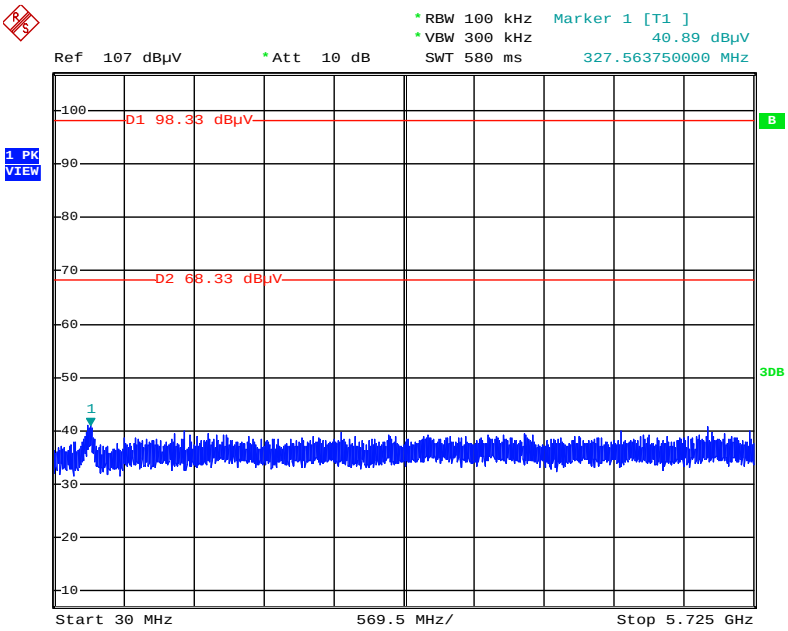
Date: 20.MAY.2014 03:13:25

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 149 / 5850MHz~40000MHz (down 30dBc)



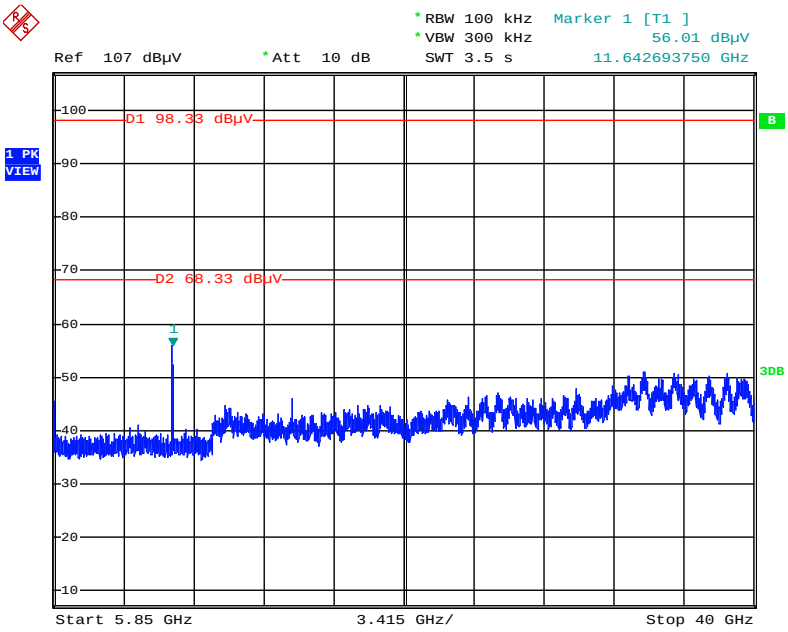
Date: 20.MAY.2014 03:14:20

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 30MHz~5725MHz (down 30dBc)



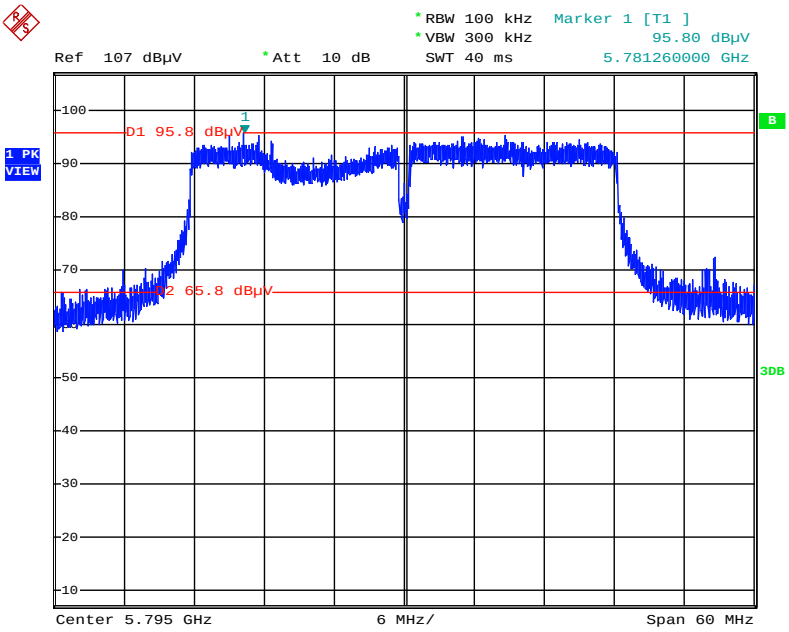
Date: 20.MAY.2014 03:19:18

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT20 / CH 165 / 5850MHz~40000MHz (down 30dBc)



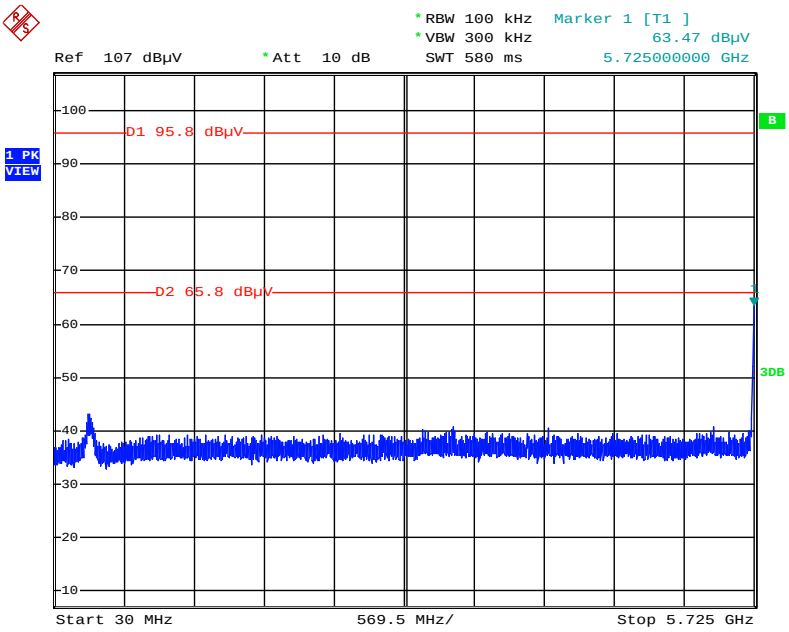
Date: 20.MAY.2014 03:18:19

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / Reference Level



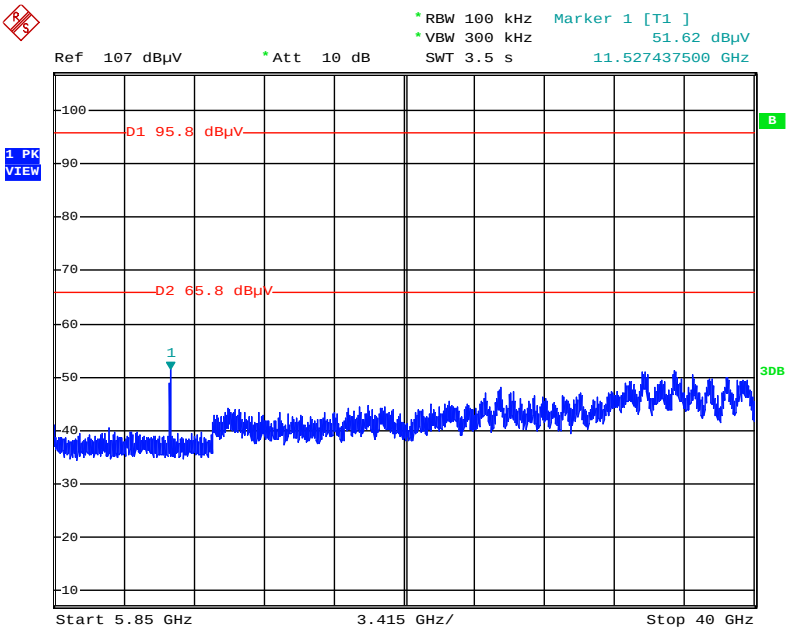
Date: 20.MAY.2014 03:44:32

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 30MHz~5725MHz (down 30dBc)



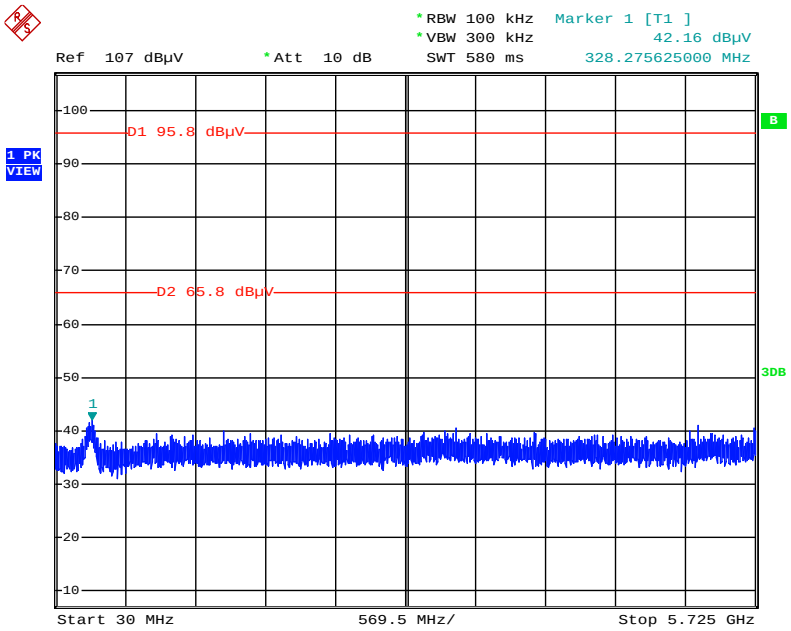
Date: 20.MAY.2014 03:51:05

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 151 / 5850MHz~40000MHz (down 30dBc)



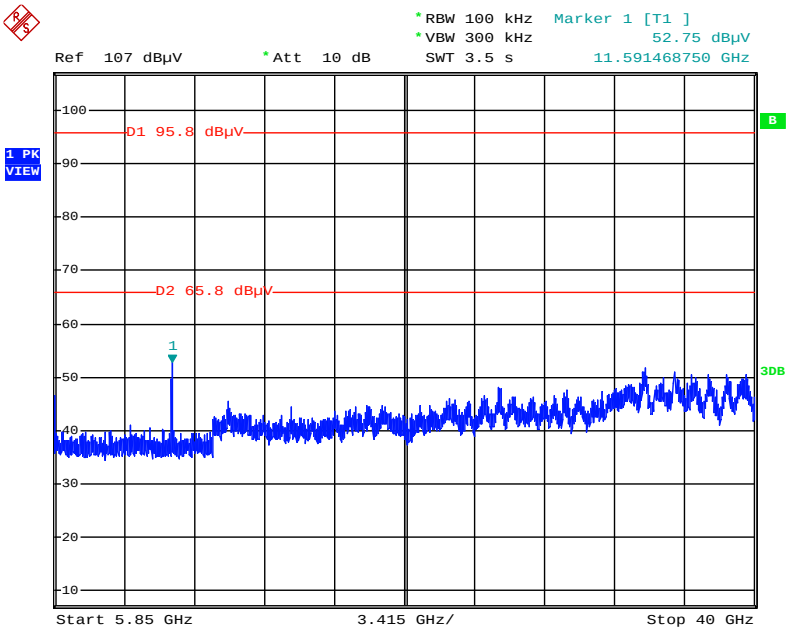
Date: 20.MAY.2014 03:51:44

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 30MHz~5725MHz (down 30dBc)



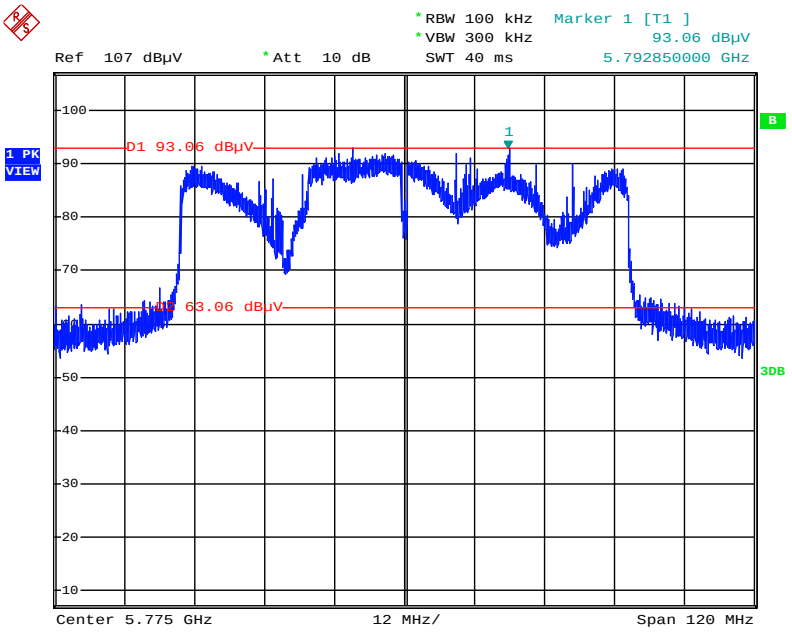
Date: 20.MAY.2014 03:45:23

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT40 / CH 159 / 5850MHz~40000MHz (down 30dBc)



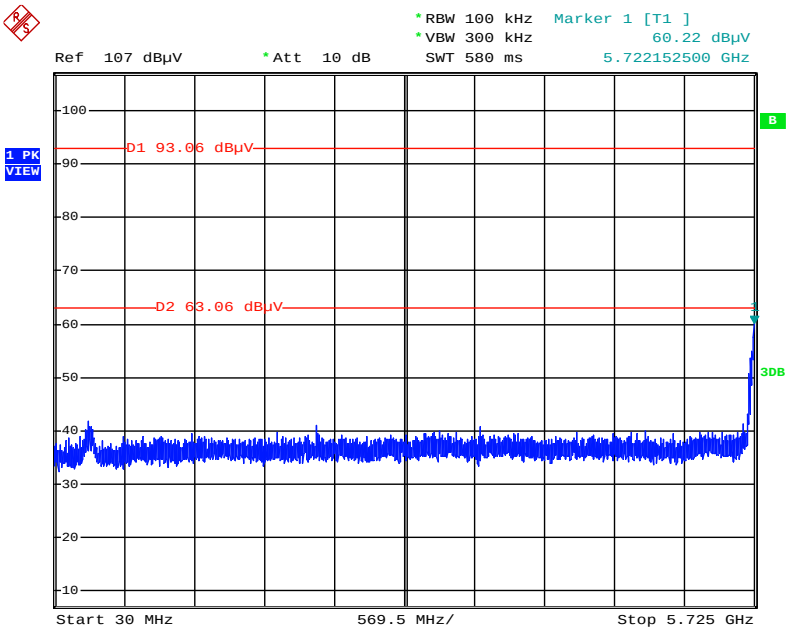
Date: 20.MAY.2014 03:46:34

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / Reference Level



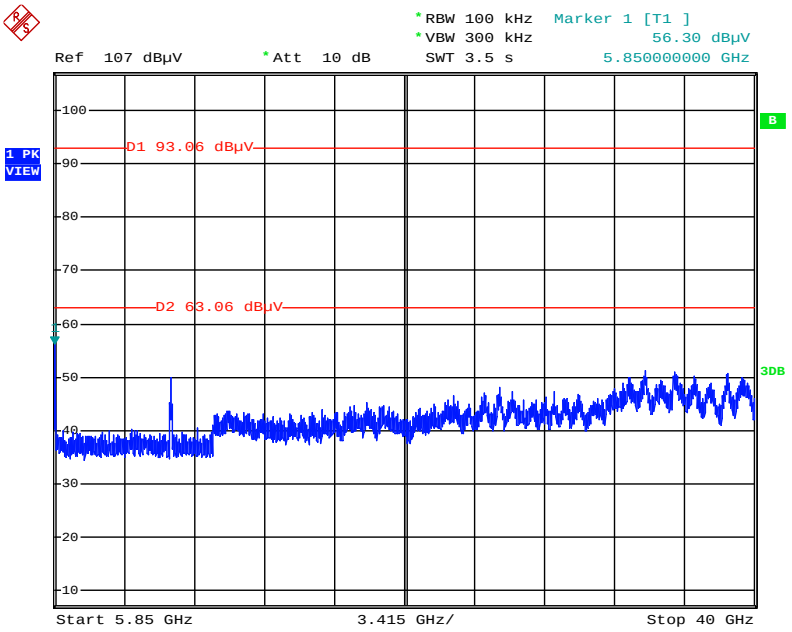
Date: 20.MAY.2014 02:07:19

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 30MHz~5725MHz (down 30dBc)



Date: 20.MAY.2014 02:08:35

Plot on Configuration IEEE 802.11ac MCS0/Nss1 VHT80 / CH 155 / 5850MHz~40000MHz (down 30dBc)



Date: 20.MAY.2014 02:09:25

4.7. Antenna Requirements

4.7.1. 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.

4.7.2. 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	100355	9 kHz ~ 2.75 GHz	Apr. 23, 2014	Conduction (CO01-CB)
LISN	F.C.C.	FCC-LISN-50-16-2	04083	150 kHz ~ 100 MHz	Nov. 23, 2013	Conduction (CO01-CB)
LISN	Schwarzbeck	NSLK 8127	8127478	9kHz ~ 30MHz	Nov. 11, 2013	Conduction (CO01-CB)
COND Cable	Woken	Cable	01	150 kHz ~ 30 MHz	Dec. 04, 2013	Conduction (CO01-CB)
Software	Audix	E3	5.410e	-	N.C.R.	Conduction (CO01-CB)
BILOG ANTENNA	Schaffner	CBL6112B	2928	30MHz ~ 2GHz	Dec. 27, 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. 01, 2013	Radiation (03CH01-CB)
Horn Antenna	SCHWARZBEAK	BBHA 9170	BBHA9170252	15GHz ~ 40GHz	Dec. 17, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8447D	2944A10991	0.1MHz ~ 1.3GHz	Nov. 12, 2013	Radiation (03CH01-CB)
Pre-Amplifier	Agilent	8449B	3008A02310	1GHz ~ 26.5GHz	Dec. 16, 2013	Radiation (03CH01-CB)
Pre-Amplifier	WM	TF-130N-R1	923365	26GHz ~ 40GHz	Oct. 23, 2013	Radiation (03CH01-CB)
Spectrum analyzer	R&S	FSP40	100019	9kHz~40GHz	Dec. 02, 2013	Radiation (03CH01-CB)
EMI Test Receiver	Agilent	N9038A	MY52260123	9kHz ~ 8GHz	Dec. 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. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-1	N/A	1 GHz – 26.5 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-2	N/A	1 GHz – 26.5 GHz	Nov. 17, 2013	Radiation (03CH01-CB)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
RF Cable-high	Woken	High Cable-3	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
RF Cable-high	Woken	High Cable-4	N/A	1 GHz - 40 GHz	Nov. 17, 2013	Radiation (03CH01-CB)
Signal analyzer	R&S	FSV40	100979	9kHz~40GHz	Nov. 29, 2013	Conducted (TH01-CB)
RF Power Divider	Woken	2 Way	0120A02056002D	2GHz ~ 18GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Power Divider	Woken	3 Way	MDC2366	2GHz ~ 18GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Power Divider	Woken	4 Way	0120A04056002D	2GHz ~ 18GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-7	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-8	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-9	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-10	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
RF Cable-high	Woken	High Cable-11	-	1 GHz – 26.5 GHz	Nov. 17, 2013	Conducted (TH01-CB)
Power Sensor	Anritsu	MA2411B	0917223	300MHz~40GHz	Sep. 18, 2013	Conducted (TH01-CB)
Power Meter	Anritsu	ML2495A	1035008	300MHz~40GHz	Sep. 18, 2013	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 Uc(y)				1.2
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				2.4

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

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	±0.173	dB	k=1	0.086
Cable loss	±0.174	dB	k=2	0.087
Antenna gain	±0.169	dB	k=2	0.084
Site imperfection	±0.433	dB	Triangular	0.214
Pre-amplifier gain	±0.366	dB	k=2	0.183
Transmitter antenna	±1.200	dB	Rectangular	0.600
Signal generator	±0.461	dB	Rectangular	0.231
Mismatch	±0.080	dB	U-shape	0.040
Spectrum analyzer	±0.500	dB	Rectangular	0.250
Combined standard uncertainty Uc(y)				1.778
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				3.555

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

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	±0.191	dB	k=1	0.095
Cable loss	±0.169	dB	k=2	0.084
Antenna gain	±0.191	dB	k=2	0.096
Site imperfection	±0.582	dB	Triangular	0.291
Pre-amplifier gain	±0.304	dB	k=2	0.152
Transmitter antenna	±1.200	dB	Rectangular	0.600
Signal generator	±0.461	dB	Rectangular	0.231
Mismatch	±0.080	dB	U-shape	0.040
Spectrum analyzer	±0.500	dB	Rectangular	0.250
Combined standard uncertainty Uc(y)				1.839
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				3.678

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

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Receiver reading	±0.186	dB	k=1	0.093
Cable loss	±0.167	dB	k=2	0.083
Antenna gain	±0.190	dB	k=2	0.095
Site imperfection	±0.488	dB	Triangular	0.244
Pre-amplifier gain	±0.269	dB	k=2	0.134
Transmitter antenna	±1.200	dB	Rectangular	0.600
Signal generator	±0.461	dB	Rectangular	0.231
Mismatch	±0.080	dB	U-shape	0.040
Spectrum analyzer	±0.500	dB	Rectangular	0.250
Combined standard uncertainty Uc(y)				1.771
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				3.541

Uncertainty of Conducted Emission Measurement

Contribution	Uncertainty of x_i			$u(x_i)$
	Value	Unit	Probability Distribution k	
Cable loss	±0.038	dB	k=2	0.019
Attenuator	±0.047	dB	k=2	0.024
Power Meter specification	±0.300	dB	Triangular	0.150
Power Sensor specification	±0.300	dB	Rectangular	0.150
Signal generator	±0.461	dB	Rectangular	0.231
Mismatch	±0.080	dB	U-shape	0.040
Spectrum analyzer	±0.500	dB	Rectangular	0.250
Combined standard uncertainty Uc(y)				0.863
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)				1.726