FCC RF Test Report

APPLICANT	:	PEGATRON CORPORATION
EQUIPMENT	:	Tablet
BRAND NAME	:	TOSHIBA
MODEL NAME	:	TOSHIBA AT10LE-A TOSHIBA AT15LE-A TOSHIBA AT10PE-A TOSHIBA AT15PE-A
FCC ID	:	VUIPDAPDAAT10LE-A
STANDARD	:	FCC Part 15 Subpart E §15.407
CLASSIFICATION	:	(NII) Unlicensed National Information Infrastructure

The product was received on Mar. 22, 2013 and completely tested on May 01, 2013. We, SPORTON INTERNATIONAL INC., would like to declare that the tested sample has been evaluated in accordance with the procedures and shown the compliance with the applicable technical standards.

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

Reviewed by: Joseph Lin / Supervisor

Approved by: Jones Tsai / Manager

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

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REVISION HISTORY

REPORT NO.	VERSION	DESCRIPTION	ISSUED DATE
FR332221D	Rev. 01	Initial issue of report	May 15, 2013

SUMMARY OF TEST RESULT

Report Section	FCC Rule	IC Rule	Description	Limit	Result	Remark
3.1	15.403(i)	RSS-210 A9.2	26dB & 99% Bandwidth	-	Pass	-
3.2	15.407(a)	RSS-210 A9.2	Maximum Conducted Output Power	≤ 17, 24, 30 dBm (depend on band)	Pass	-
3.3	15.407(a)	RSS-210 A9.2	Power Spectral Density	≤ 4, 11, 17 dBm (depend on band)	Pass	-
3.4	15.407(a)(6)	RSS-210 A9.3	Peak Excursion Ratio	≤ 13dB	Pass	-
3.5	15.407(b)	RSS-210 A9.3	Unwanted Emissions	≤ -17, -27 dBm (depend on band)&15.209(a)	Pass	Under limit 0.42 dB at 5141.900 MHz
3.6	15.207	RSS-Gen 7.2.4	AC Conducted Emission	15.207(a)	Pass	Under limit 12.75 dB at 0.191 MHz
3.7	15.407(g)	RSS-210 A9.5	Frequency Stability	Within Operation Band	Pass	-
3.8	15.407(c)	RSS-210 A9.5	Automatically Discontinue Transmission	Discontinue Transmission	Pass	-
3.9	15.203 & 15.407(a)	RSS-210 A9.2	Antenna Requirement	N/A	Pass	-

1 General Description

1.1 Applicant

PEGATRON CORPORATION
No. 76, Ligong St., Beitou District, Taipei City 112

1.2 Manufacturer

Toshiba Corporation
1-1, Shibaura 1-chome, Minato-ku, Tokyo 105-8001, Japan

1.3 Feature of Equipment Under Test

Product Feature & Specification	
Equipment	Tablet
Brand Name	TOSHIBA
Model Name	TOSHIBA AT10LE-A TOSHIBA AT15LE-A TOSHIBA AT10PE-A TOSHIBA AT15PE-A
FCC ID	VUIPDAPDAAT10LE-A
EUT supports Radios application	WLAN 11a/ac/b/g/n / Bluetooth 2.1 / 4.0 / NFC
EUT Stage	Production Unit

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

1.4 Product Specification of Equipment Under Test

Product Specification subjective to this standard	
Tx/Rx Frequency Range	5180 MHz ~ 5240 MHz 5260 MHz ~ 5320 MHz 5500 MHz ~ 5580 MHz 5660 MHz ~ 5700 MHz
Maximum Output Power to Antenna	**<5180 MHz ~ 5240 MHz>** 802.11a : 11.87 dBm / 0.0154 W 802.11n HT20 : 11.67 dBm / 0.0147 W 802.11n HT40 : 11.21 dBm / 0.0132 W 802.11ac VHT20 : 11.18 dBm / 0.0131 W 802.11ac VHT40 : 11.45 dBm / 0.0140 W 802.11ac VHT80 : 11.50 dBm / 0.0141 W **<5260 MHz ~ 5320 MHz>** 802.11a : 10.64 dBm / 0.0116 W 802.11n HT20 : 10.52 dBm / 0.0113 W 802.11n HT40 : 10.27 dBm / 0.0106 W 802.11ac VHT20 : 10.51 dBm / 0.0112 W 802.11ac VHT40 : 10.39 dBm / 0.0109 W 802.11ac VHT80 : 10.37 dBm / 0.0109 W **<5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz >** 802.11a : 11.44 dBm / 0.0139 W 802.11n HT20 : 11.49 dBm / 0.0141 W 802.11n HT40 : 10.83 dBm / 0.0121 W 802.11ac VHT20 : 11.50 dBm / 0.0141 W 802.11ac VHT40 : 11.51 dBm / 0.0142 W 802.11ac VHT80 : 11.53 dBm / 0.0142 W
99% Occupied Bandwidth	802.11a : 18.100 MHz 802.11n HT20 : 18.800 MHz 802.11n HT40 : 36.720 MHz 802.11ac VHT20: 18.975 MHz 802.11ac VHT40 : 36.705 MHz 802.11ac VHT80 : 75.810 MHz
Antenna Type	**<5180 MHz ~ 5240 MHz>** 802.11a/ac/n : Chip Antenna with gain 3.92 dBi **<5260 MHz ~ 5320 MHz>** 802.11a/ac/n : Chip Antenna with gain 3.83 dBi **<5500 MHz ~ 5580 MHz and 5660 MHz ~ 5700 MHz >** 802.11a/ac/n : Chip Antenna with gain 2.90 dBi
Type of Modulation	802.11a/n : OFDM (BPSK / QPSK / 16QAM / 64QAM) 802.11ac : OFDM (BPSK / QPSK / 16QAM / 64QAM / 256QAM)

1.5 Testing Site

Test Site	SPORTON INTERNATIONAL INC.			
Test Site Location	No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park, Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C. TEL: +886-3-3273456 / FAX: +886-3-3284978			
Test Site No.	Sporton Site No.			FCC/IC Registration No.
	TH02-HY	CO05-HY	03CH06-HY	722060/4086B-1

The test site complies with ANSI C63.4 2003 requirement.

1.6 Applied Standards

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

- FCC Part 15 Subpart E
- FCC KDB 789033 D01 General UNII Test Procedures v01r03
- ANSI C63.10-2009

Remark:

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

2 Test Configuration of Equipment Under Test

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: conducted emission (150 KHz to 30 MHz) and radiated emission (9 KHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower). For radiated measurement, pre-scanned in three orthogonal panels, X, Y, Z. The worst cases (X plane) were recorded in this report.

The final configuration from all the combinations and the worst-case data rates were investigated by measuring the maximum power across all the data rates and modulation modes under section 2.2.

Based on the worst configuration found above, the RF power setting is set individually to meet FCC compliance limit for the final conducted and radiated tests shown in section 2.3.

2.1 Carrier Frequency Channel

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5150-5250 MHz Band 1	36	5180	44	5220
	38	5190	46	5230
	40	5200	48	5240
	42	5210	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5250-5350 MHz Band 2	52	5260	60	5300
	54	5270	62	5310
	56	5280	64	5320
	58	5290	-	-

Frequency Band	Channel	Freq. (MHz)	Channel	Freq. (MHz)
5470-5600 MHz and 5650-5725 MHz Band 3	100	5500	112	5560
	102	5510	116	5580
	104	5520	132	5660
	106	5530	134	5670
	108	5540	136	5680
	110	5550	140	5700

2.2 Pre-Scanned RF Power

Preliminary tests were performed in different data rate and antenna configurations as following table and the highest power data rates were chosen for full test in the following tables. Final Output Power equals to Measured Output Power adds the duty factor.

5GHz 802.11a mode								
Data Rate (MHz)	6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Average Power (dBm)	11.87	11.79	11.75	11.77	11.59	11.56	11.77	11.57

5GHz 802.11n HT20 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power dBm)	11.67	11.62	11.58	11.52	11.64	11.63	11.51	11.50

5GHz 802.11n HT40 mode								
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7
Average Power dBm)	11.21	11.11	11.19	11.20	11.20	11.07	11.17	11.18

5GHz 802.11ac VHT20 mode									
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8
Average Power dBm)	11.50	11.21	10.82	11.08	11.22	11.22	11.00	11.11	10.98

5GHz 802.11ac VHT40 mode										
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
Average Power dBm)	11.51	11.38	11.48	11.42	11.46	11.48	11.44	11.46	11.41	11.42

5GHz 802.11ac VHT80 mode										
Data Rate (MHz)	MCS0	MCS1	MCS2	MCS3	MCS4	MCS5	MCS6	MCS7	MCS8	MCS9
Average Power dBm)	11.53	11.42	11.42	11.49	11.28	11.45	11.47	11.48	11.51	11.47

2.3 Test Mode

Final results of test modes, data rates and test channels are shown as following table.

Test Cases				
	Test Items	Mode	Data rate	Test Channel
Conducted TCs	26dB and 99% BW Power Spectral Density	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11n HT40	MCS0	L/M/H
		802.11ac VHT20	MCS0	L/M/H
		802.11ac VHT40	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
	Output Power	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11n HT40	MCS0	L/M/H
		802.11ac VHT20	MCS0	L/M/H
		802.11ac VHT40	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
	Peak Excursion	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11n HT40	MCS0	L/M/H
		802.11ac VHT20	MCS0	L/M/H
		802.11ac VHT40	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
	Frequency Stability	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11n HT40	MCS0	L/M/H
		802.11ac VHT20	MCS0	L/M/H
		802.11ac VHT40	MCS0	L/M/H
		802.11ac VHT80	MCS0	M

Test Cases				
Radiated TCs	Radiated Band Edge	802.11a	6 Mbps	L/H
		802.11n HT20	MCS0	L/H
		802.11n HT40	MCS0	L/H
		802.11ac VHT80	MCS0	M
	Radiated Spurious Emission	802.11a	6 Mbps	L/M/H
		802.11n HT20	MCS0	L/M/H
		802.11n HT40	MCS0	L/M/H
		802.11ac VHT80	MCS0	M
AC Conducted Emission	Mode 1 : WLAN Link + Bluetooth Link + NFC On + Earphone + SD Card + MP3 + H pattern + HDMI Cable + USB Cable (Data Link with PC) + Adapter			

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11a	802.11a	802.11a
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

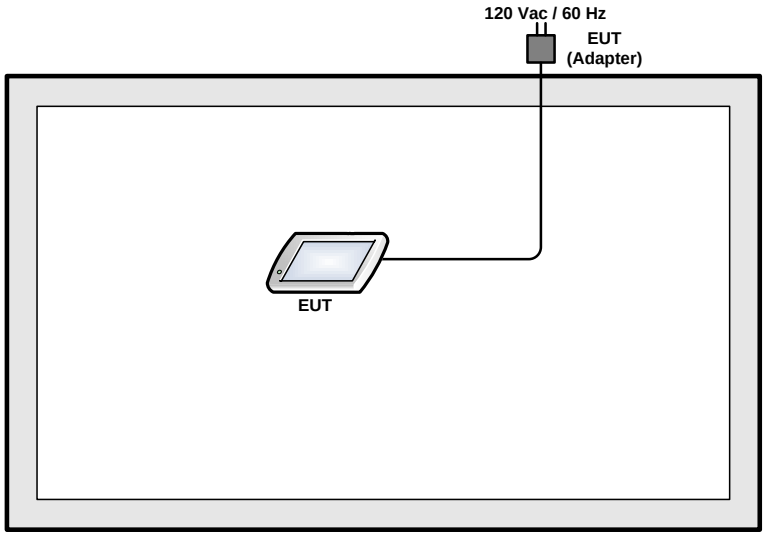
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11n HT20 / 802.11ac VHT20	802.11n HT20 / 802.11ac VHT20	802.11n HT20 / 802.11ac VHT20
L	Low	36	52	100
M	Middle	44	60	116
H	High	48	64	140

Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11n HT40 / 802.11ac VHT40	802.11n HT40 / 802.11ac VHT20	802.11n HT40 / 802.11ac VHT20
L	Low	38	54	102
M	Middle	-	-	110
H	High	46	62	134

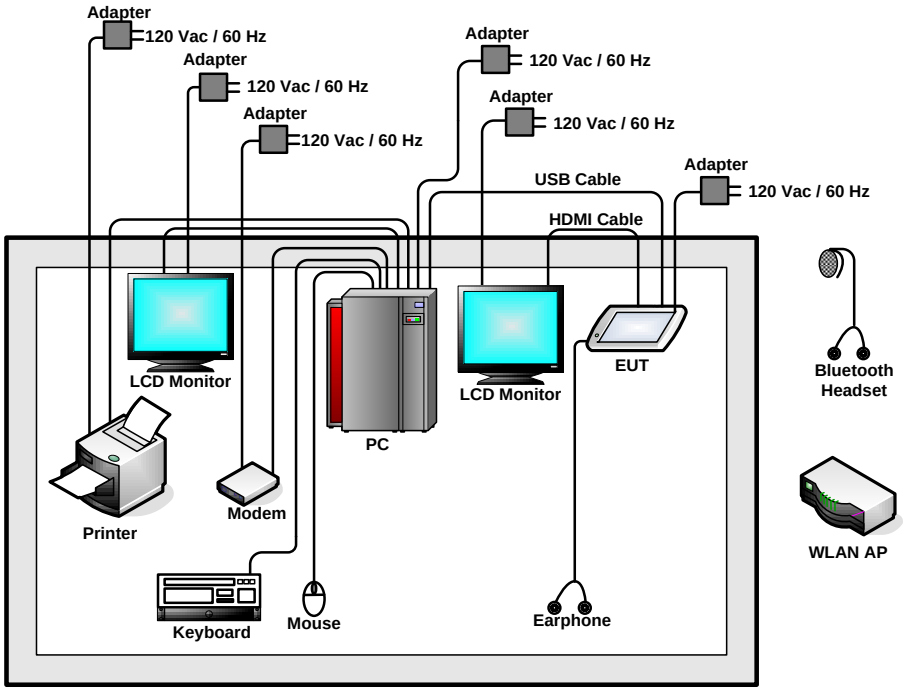
Ch. #		Band I：5150-5250 MHz	Band II：5250-5350 MHz	Band III：5470-5600 MHz and 5650-5725MHz
		802.11ac VHT80	802.11ac VHT80	802.11ac VHT80
L	Low	-	-	-
M	Middle	42	58	106
H	High	-	-	-

2.4 Connection Diagram of Test System

< WLAN Tx Mode>



< AC Conducted Emission Mode>



2.5 Support Unit used in test configuration and system

Item	Equipment	Trade Name	Model Name	FCC ID	Data Cable	Power Cord
1.	WLAN AP	D-Link	DNS-G120	N/A	N/A	Unshielded, 1.5 m
2.	Bluetooth Earphone	SONY	Z354	N/A	N/A	N/A
3.	Notebook	DELL	Latitude E6320	FCC DoC	N/A	AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m
4.	PC	HP	DC7700	FCC DoC	N/A	Unshielded, 1.8 m
5.	LCD Monitor	DELL	U2410f	FCC DoC	Shielded, 1.5 m	Unshielded, 1.8 m
6.	(USB) Mouse	Microsoft	1113	FCC DoC	Shielded, 1.8 m	N/A
7.	(USB) Keyboard	Microsoft	1366	FCC DoC	Shielded, 2.0 m	N/A
8.	Printer	EPSON	LQ300+	FCC DoC	Shielded, 1.8 m	Unshielded, 1.8 m
9.	Earphone	INTOPIC	JAZZ-368	N/A	Unshielded, 1.7m	N/A
10.	MicroSD Card	Transcend	8G	FCC DoC	N/A	N/A
11.	Modem	ACCEX	DM1414	IFAXDM1414	Shielded, 1 m	Unshielded, 1.8 m

2.6 Description of RF Function Operation Test Setup

For WLAN function, programmed RF utility, “WiFi Tx Command” installed in the notebook make the EUT provides functions like channel selection and power level for continuous transmitting and receiving signals.

2.7 Measurement Results Explanation Example

For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuator factor between EUT conducted output port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly the EUT RF output level.

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

Offset = RF cable loss + attenuator factor.

Following shows an offset computation example with cable loss 4.2 dB and 10dB attenuator.

Example :

Offset(dB) = RF cable loss(dB) + attenuator factor(dB).

= 4.2 + 10 = 14.2 (dB)

3 Test Result

3.1 26dB & 99% Bandwidth Measurement

3.1.1 Description of Bandwidth Measurement

There is no restriction limits for bandwidth. The maximum conducted output power can be limited by measured emission bandwidth (B). For the band 5150-5250 MHz, the maximum conducted output power over the frequency band of operation shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B. For the bands 5250-5350 MHz and 5470-5600 MHz and 5650-5725MHz, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B.

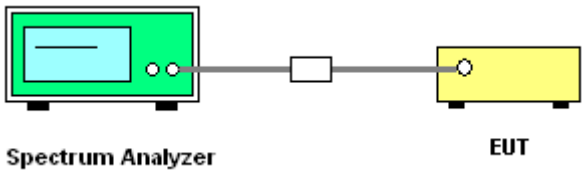
3.1.2 Measuring Instruments

See list of measuring instruments of this test report.

3.1.3 Test Procedures

1. The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03. Section D) Emission bandwidth
2. Set RBW = approximately 1% of the emission bandwidth.
3. Set the VBW > RBW.
4. Detector = Peak.
5. Trace mode = max hold
6. Measure the maximum width of the emission that is 26 dB down from the peak of the emission. Compare this with the RBW setting of the analyzer. Readjust RBW and repeat measurement as needed until the RBW/EBW ratio is approximately 1%.
7. For 99% Bandwidth Measurement, the spectrum analyzer's resolution bandwidth (RBW) is set 1MHz and set the Video bandwidth (VBW) ≥ 3 * RBW.
8. Measure and record the results in the test report.

3.1.4 Test Setup

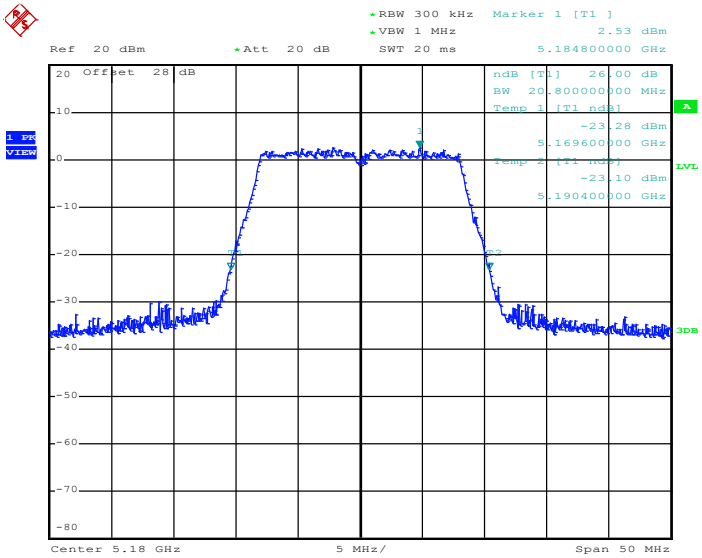


3.1.5 Test Result of 26dB Bandwidth Plots

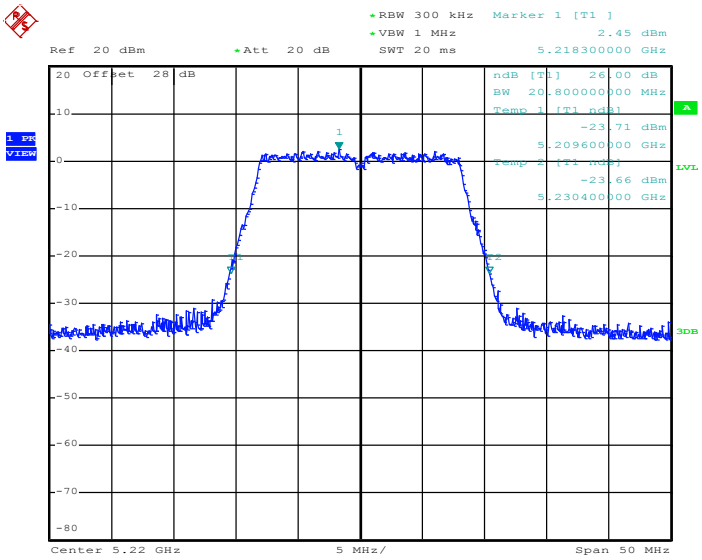
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11a 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	20.80	N/A
	44	5220	20.80	N/A
	48	5240	20.80	N/A
NII Band 2	52	5260	20.95	N/A
	60	5300	20.75	N/A
	64	5320	20.70	N/A
NII Band 3	100	5500	20.75	N/A
	116	5580	20.85	N/A
	140	5700	20.75	N/A

26 dB Bandwidth Plot on 802.11a Channel 36



26 dB Bandwidth Plot on 802.11a Channel 44



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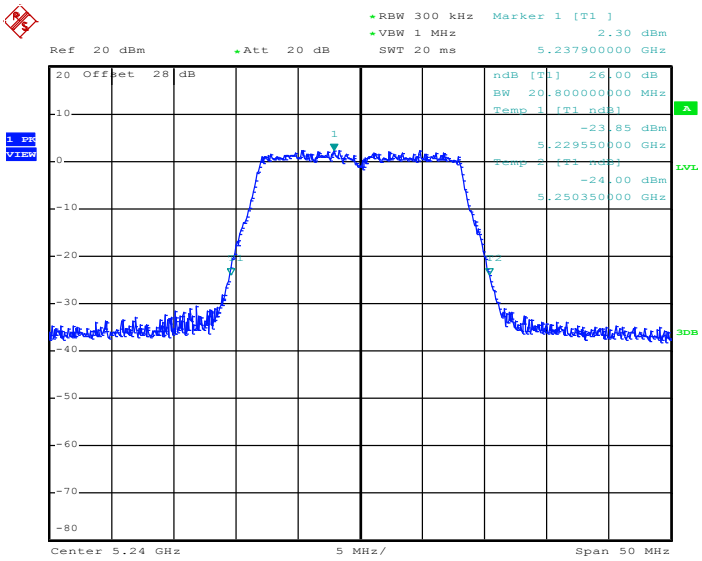
26 dB Bandwidth Plot on 802.11a Channel 48



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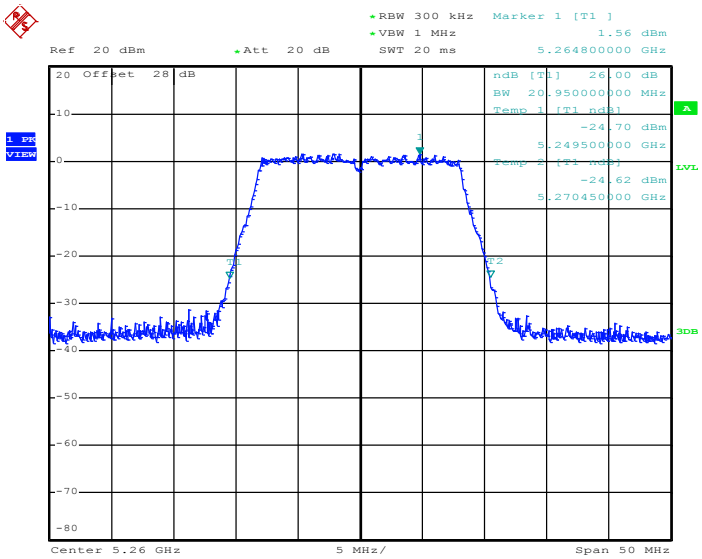

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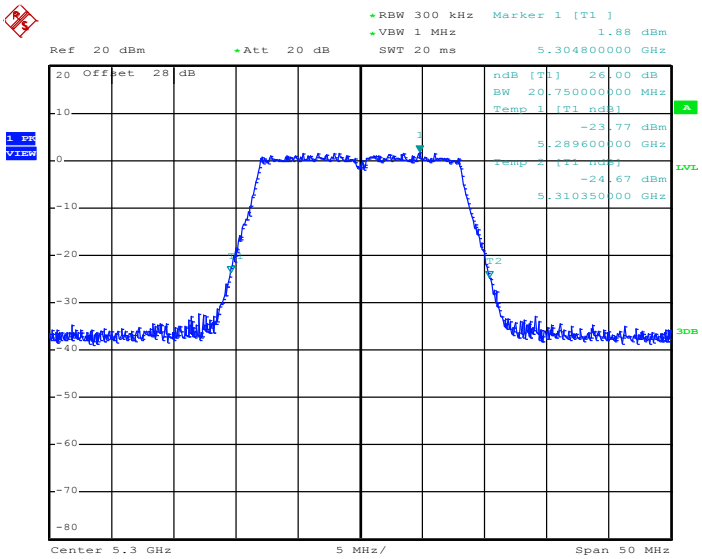

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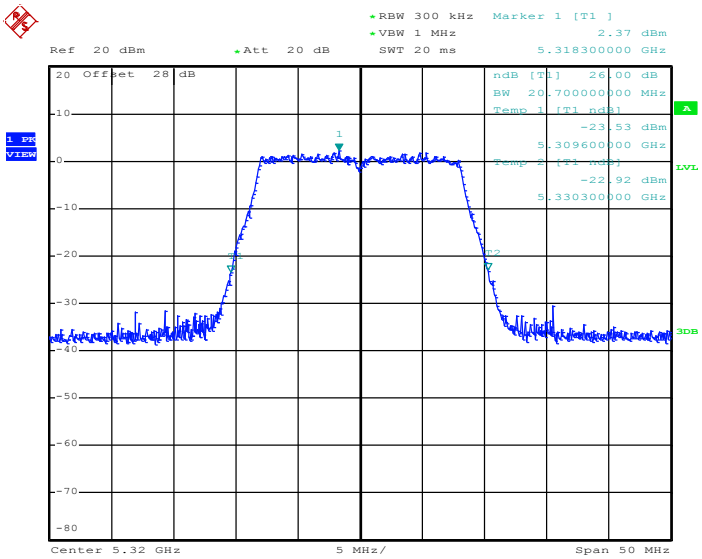

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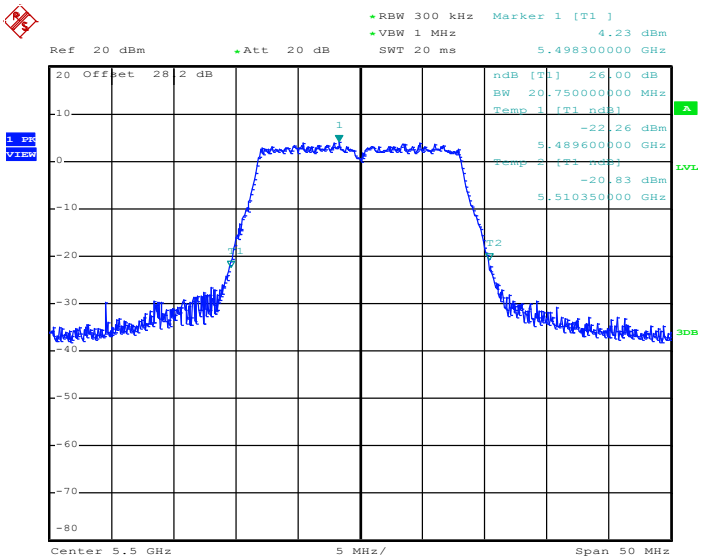

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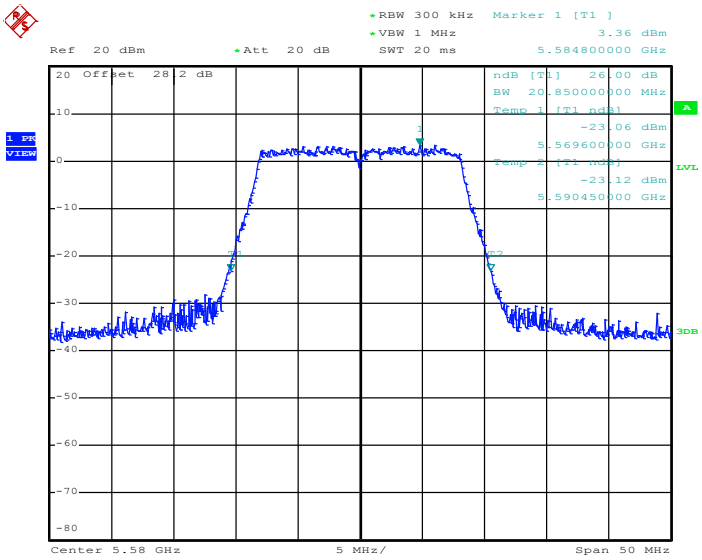

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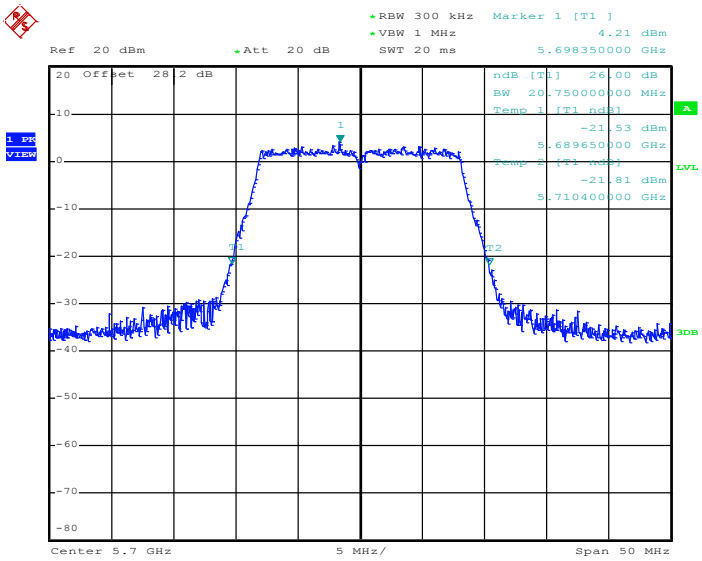

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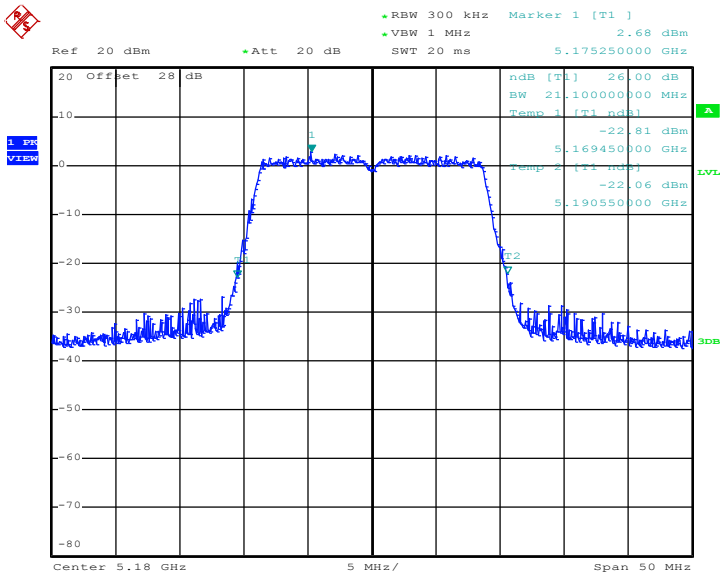
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11n HT20 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	21.10	N/A
	44	5220	21.00	N/A
	48	5240	21.35	N/A
NII Band 2	52	5260	21.05	N/A
	60	5300	21.25	N/A
	64	5320	21.10	N/A
NII Band 3	100	5500	21.15	N/A
	116	5580	21.20	N/A
	140	5700	21.20	N/A

26 dB Bandwidth Plot on 802.11n HT20 Channel 36



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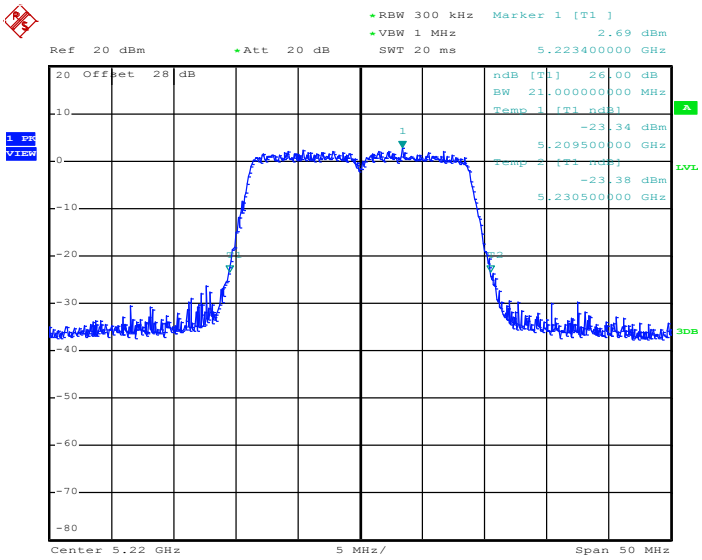
26 dB Bandwidth Plot on 802.11n HT20 Channel 44



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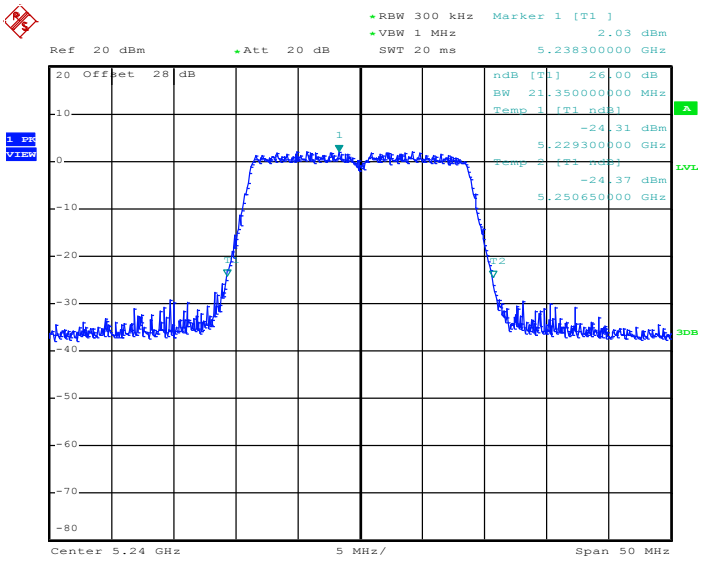
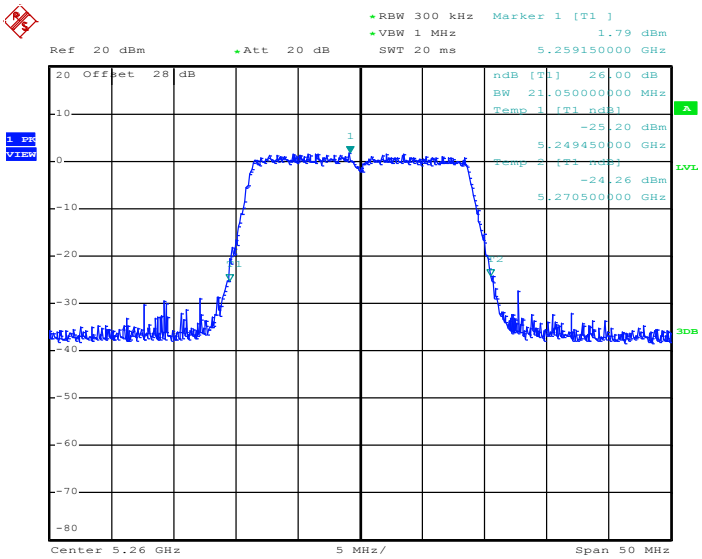
26 dB Bandwidth Plot on 802.11n HT20 Channel 48



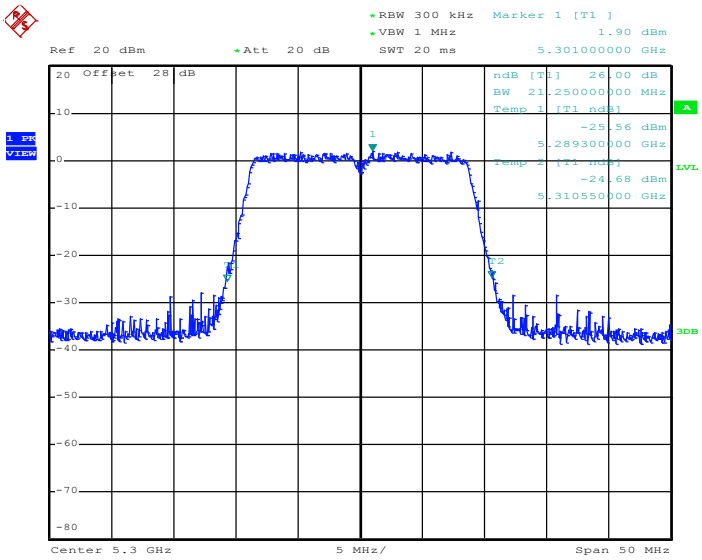
Date: 12.APR.2013 00:14:56

26 dB Bandwidth Plot on 802.11n HT20 Channel 52



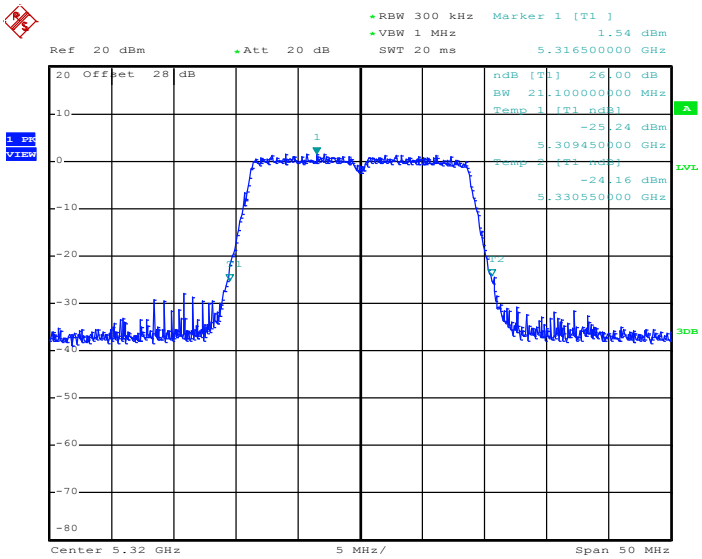
Date: 19.APR.2013 19:54:53

26 dB Bandwidth Plot on 802.11n HT20 Channel 60



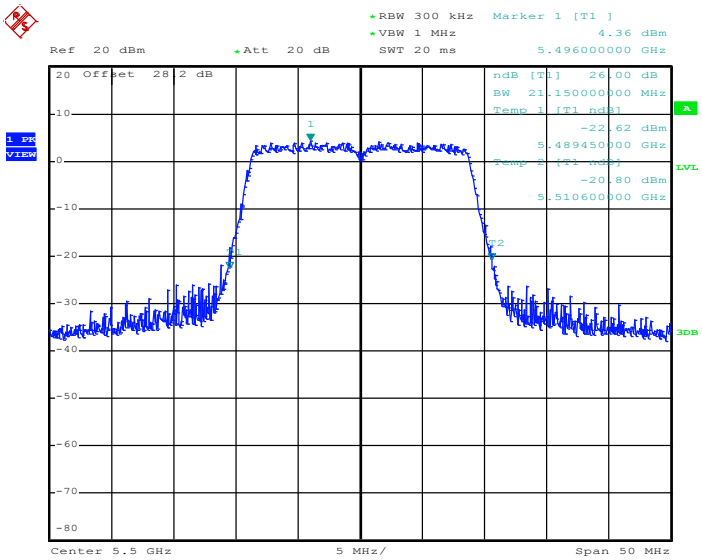
Date: 19.APR.2013 19:45:42

26 dB Bandwidth Plot on 802.11n HT20 Channel 64



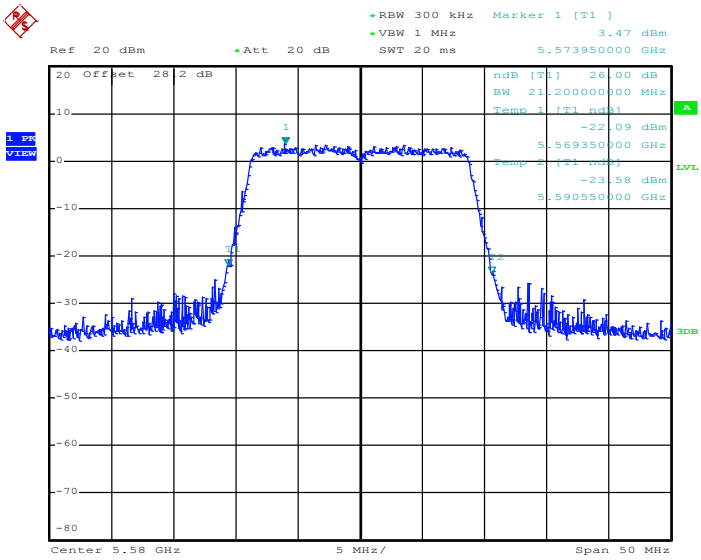
Date: 19.APR.2013 19:38:30

26 dB Bandwidth Plot on 802.11n HT20 Channel 100



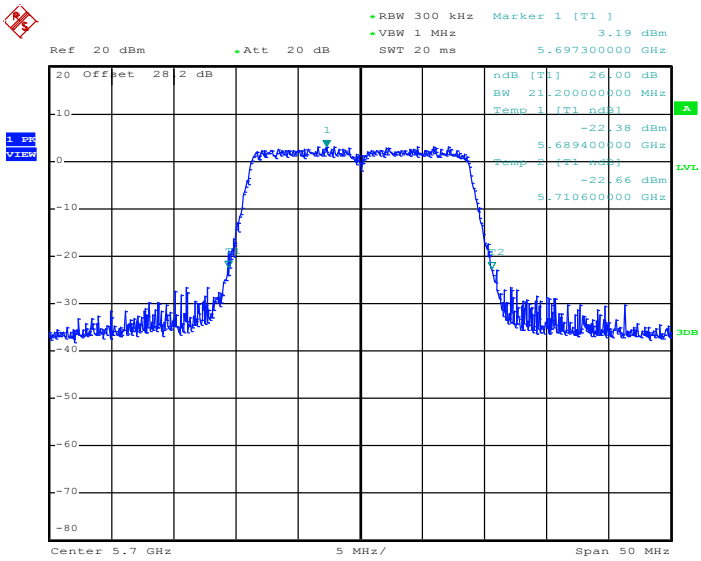
Date: 12.APR.2013 20:21:01

26 dB Bandwidth Plot on 802.11n HT20 Channel 116



Date: 11.APR.2013 23:47:00

26 dB Bandwidth Plot on 802.11n HT20 Channel 140

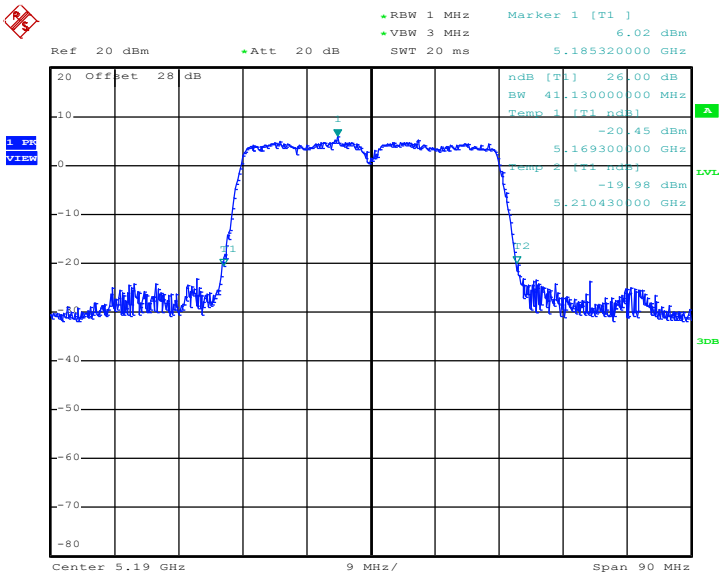


Date: 11.APR.2013 23:26:53

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

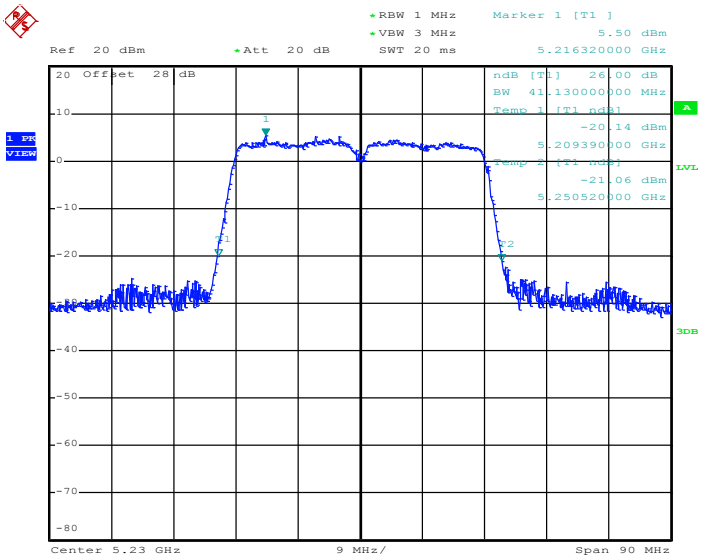
Band	Channel	Frequency (MHz)	802.11n HT40 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	38	5190	41.13	N/A
	46	5230	41.13	N/A
NII Band 2	54	5270	41.22	N/A
	62	5310	41.04	N/A
NII Band 3	102	5510	41.31	N/A
	110	5550	41.31	N/A
	134	5670	41.22	N/A

26 dB Bandwidth Plot on 802.11n HT40 Channel 38



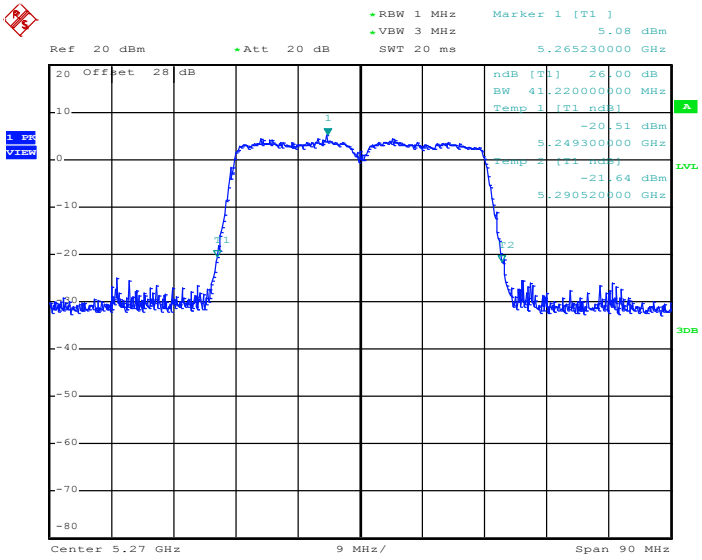
Date: 12.APR.2013 00:35:25

26 dB Bandwidth Plot on 802.11n HT40 Channel 46



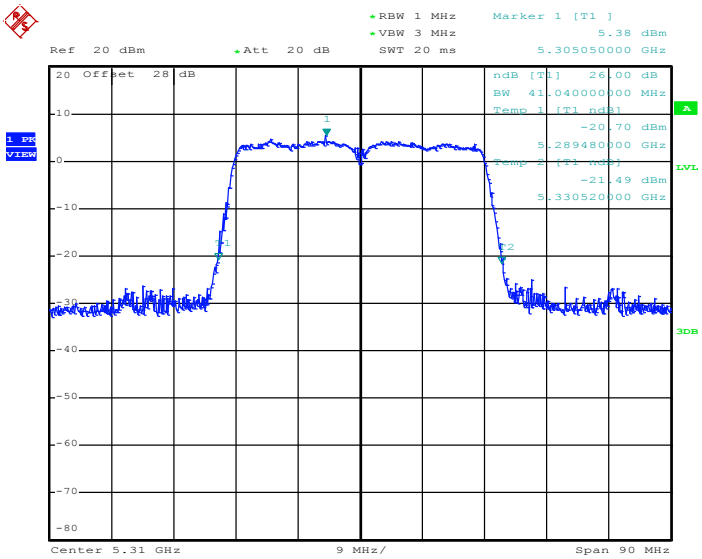
Date: 12.APR.2013 00:38:22

26 dB Bandwidth Plot on 802.11n HT40 Channel 54



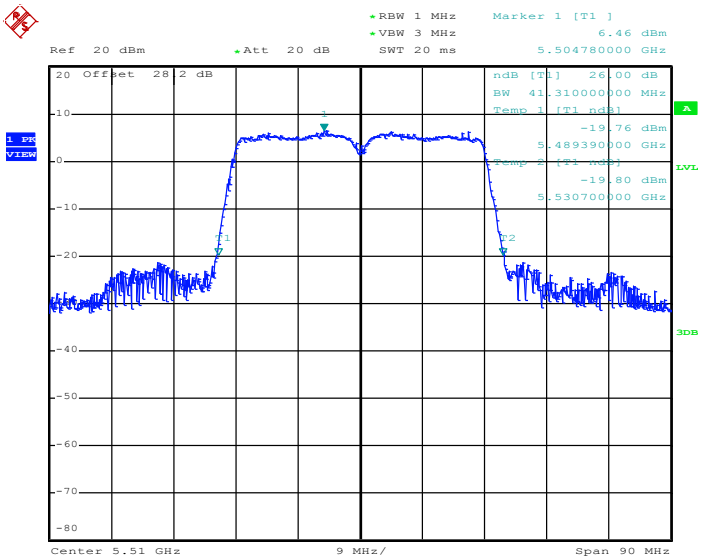
Date: 19.APR.2013 21:06:25

26 dB Bandwidth Plot on 802.11n HT40 Channel 62



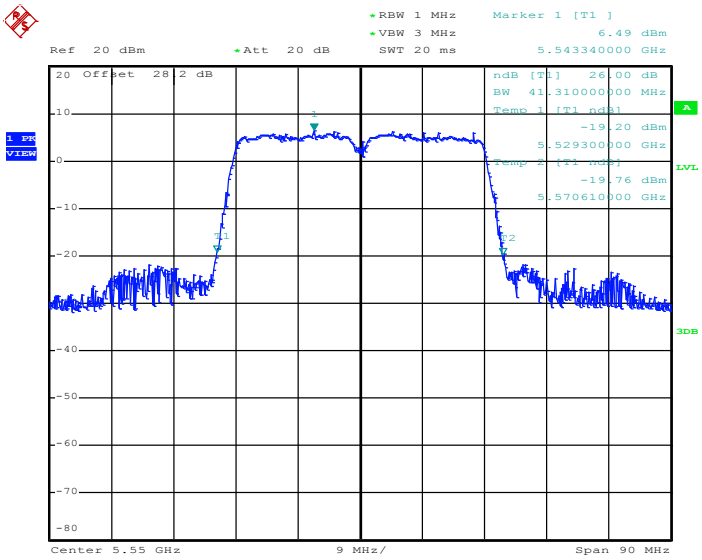
Date: 19.APR.2013 21:12:03

26 dB Bandwidth Plot on 802.11n HT40 Channel 102



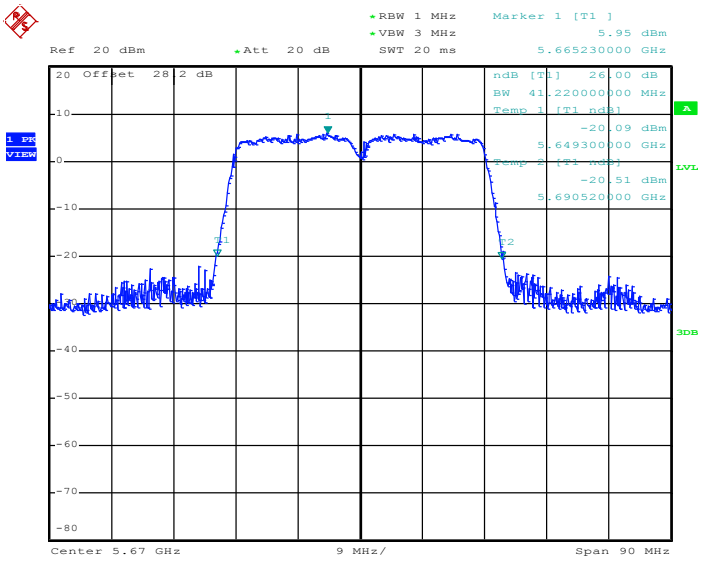
Date: 12.APR.2013 00:48:03

26 dB Bandwidth Plot on 802.11n HT40 Channel 110



Date: 12.APR.2013 00:52:47

26 dB Bandwidth Plot on 802.11n HT40 Channel 134

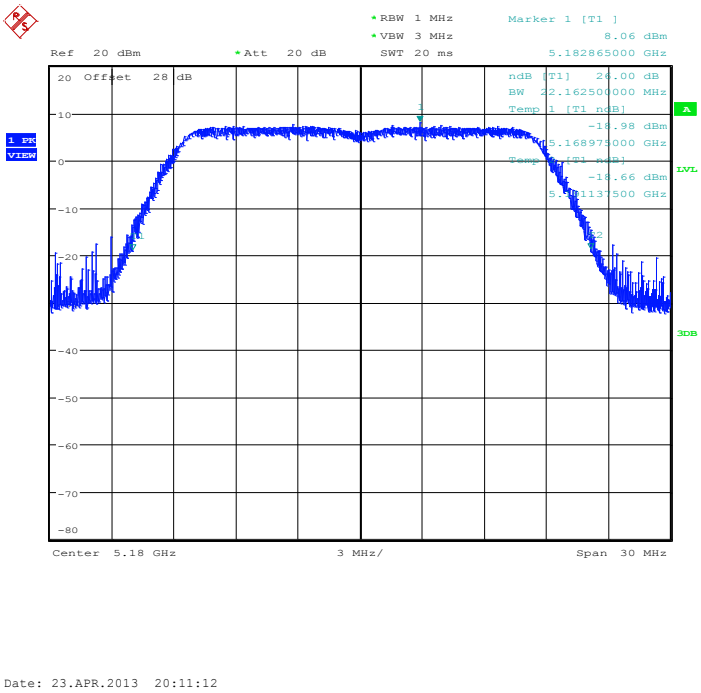


Date: 12.APR.2013 00:56:30

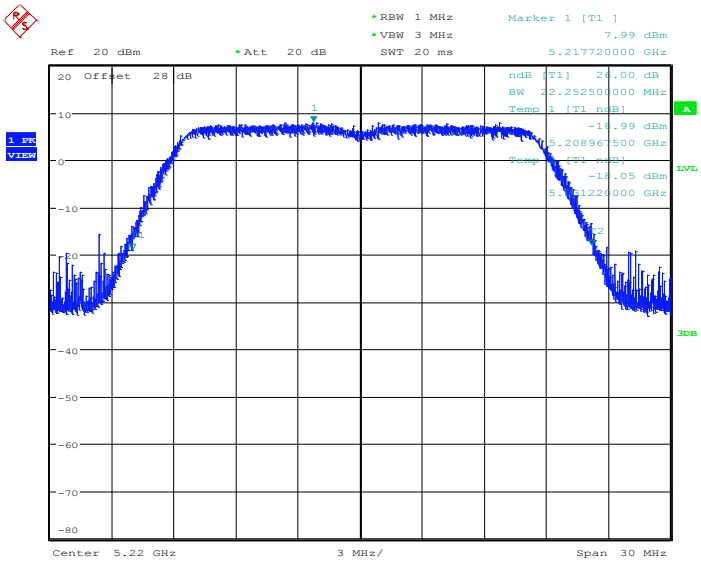
Test Mode :	802.11ac VHT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11ac VHT20 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	22.163	N/A
	44	5220	22.253	N/A
	48	5240	21.983	N/A
NII Band 2	52	5260	22.215	N/A
	60	5300z	22.133	N/A
	64	5320	22.230	N/A
NII Band 3	100	5500	22.095	N/A
	116	5580	22.073	N/A
	140	5700	22.200	N/A

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 36

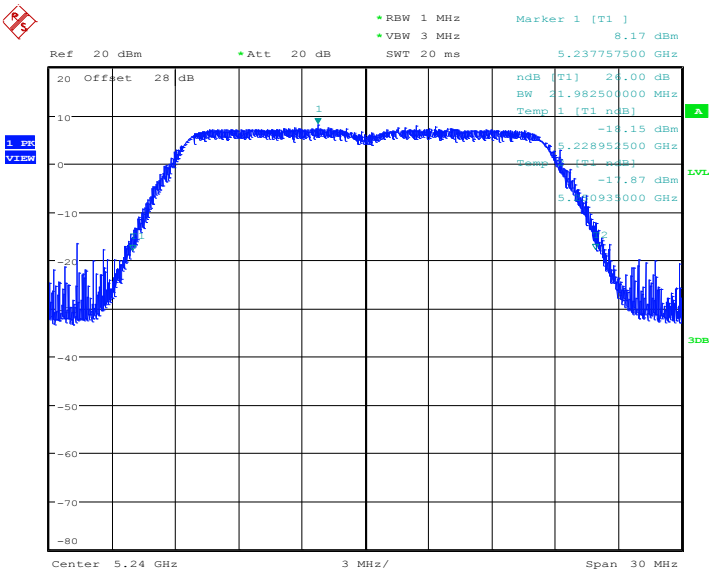


26 dB Bandwidth Plot on 802.11ac VHT20 Channel 44



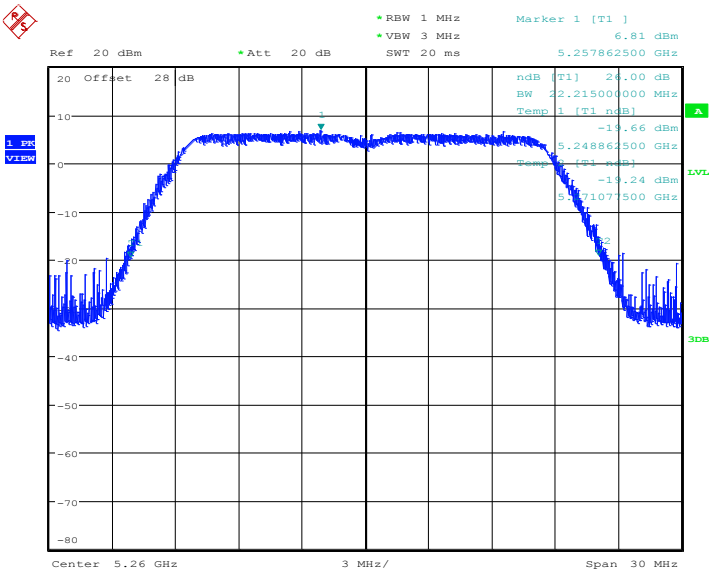
Date: 23.APR.2013 20:13:37

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 48



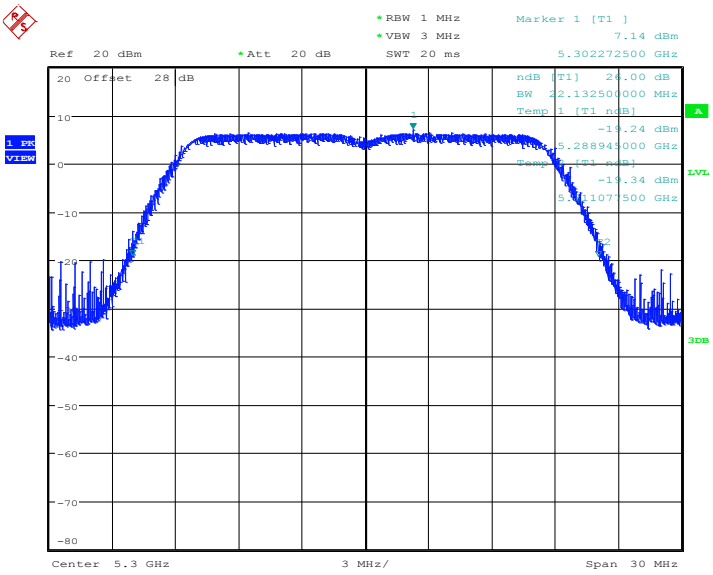
Date: 23.APR.2013 20:17:24

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 52



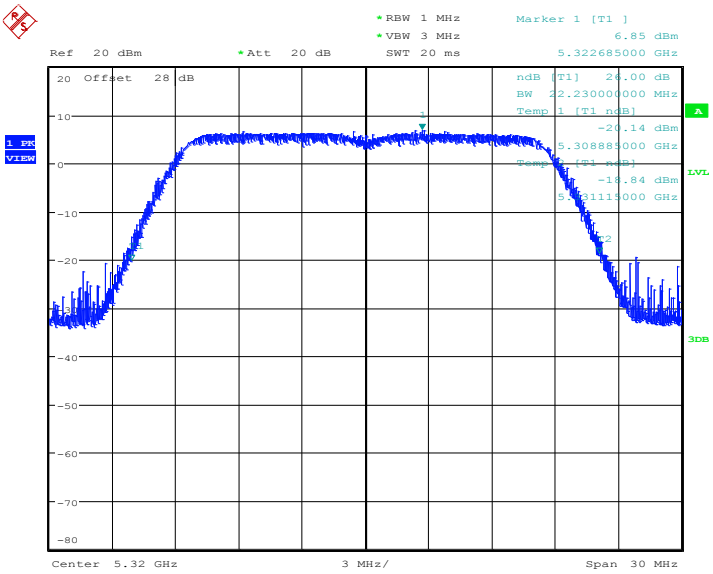
Date: 23.APR.2013 20:19:06

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 60



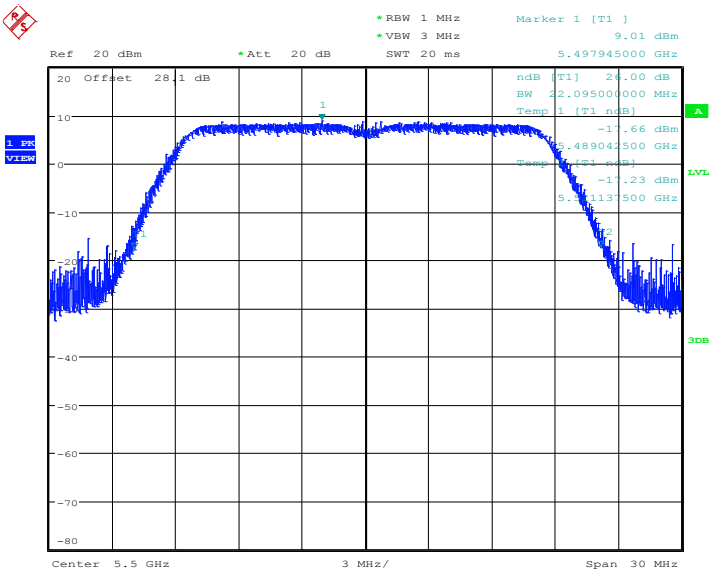
Date: 23.APR.2013 20:20:20

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 64



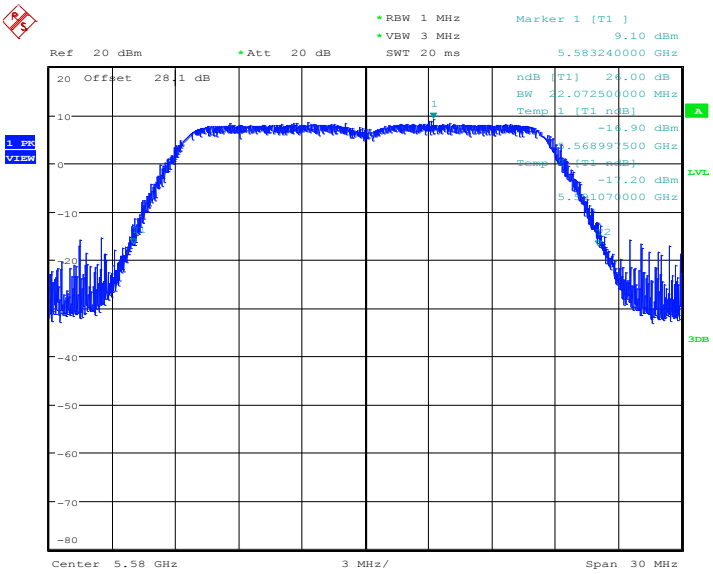
Date: 23.APR.2013 20:22:01

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 100



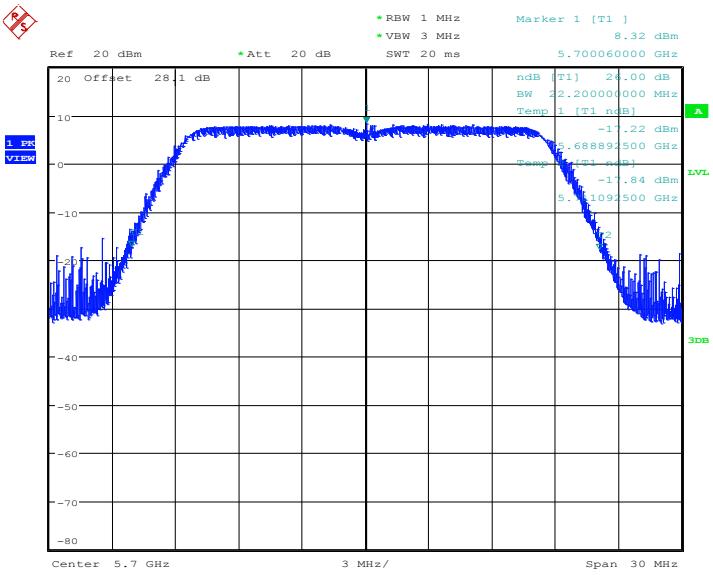
Date: 23.APR.2013 20:23:57

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 116



Date: 23.APR.2013 20:25:33

26 dB Bandwidth Plot on 802.11ac VHT20 Channel 140

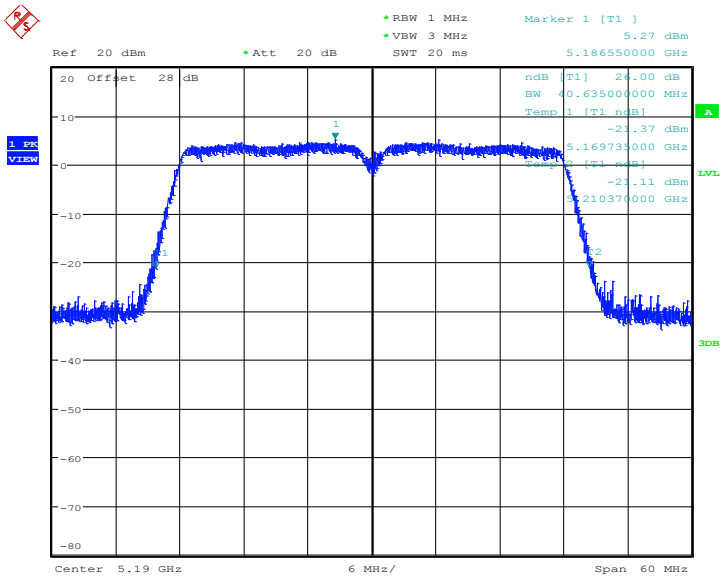


Date: 23.APR.2013 20:27:10

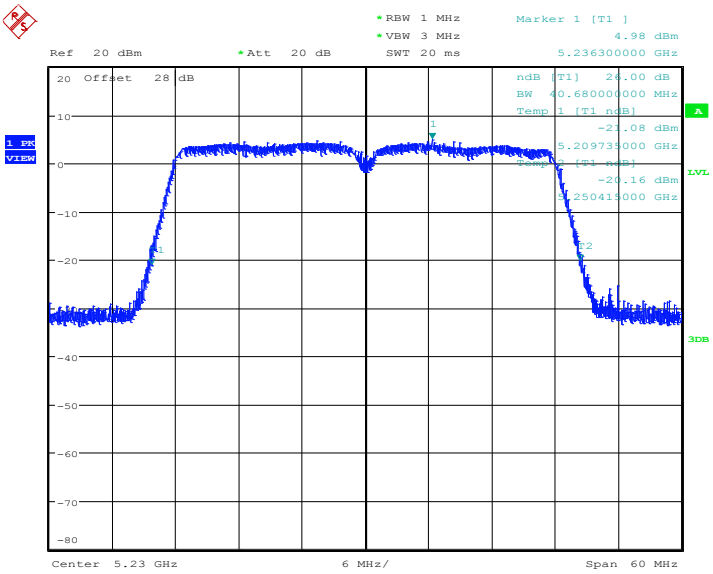
Test Mode :	802.11ac VHT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11ac VHT40 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	38	5190	40.635	N/A
	46	5230	40.680	N/A
NII Band 2	54	5270	40.785	N/A
	62	5310	40.680	N/A
NII Band 3	102	5510	40.650	N/A
	110	5550	40.800	N/A
	134	5670	40.605	N/A

26 dB Bandwidth Plot on 802.11ac VHT40 Channel 38

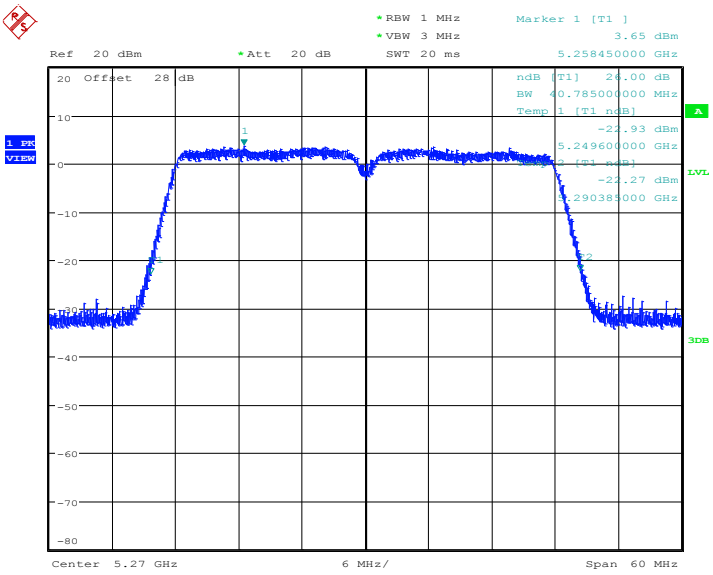


26 dB Bandwidth Plot on 802.11ac VHT40 Channel 46



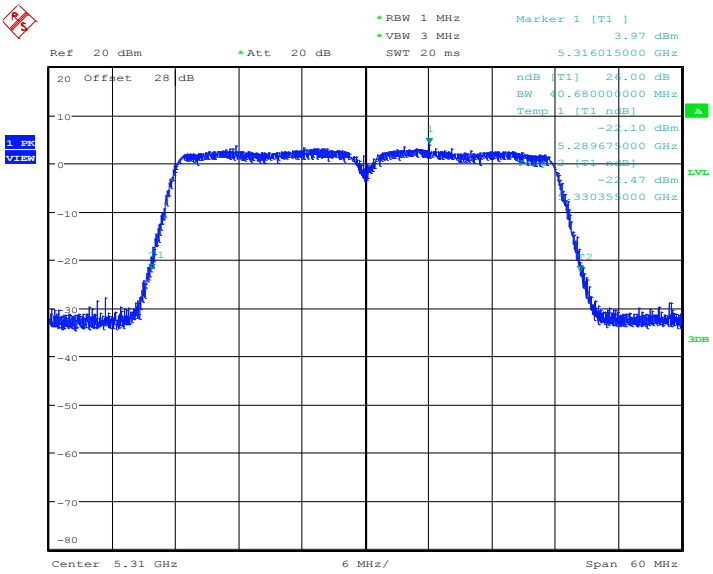
Date: 23.APR.2013 20:50:16

26 dB Bandwidth Plot on 802.11ac VHT40 Channel 54

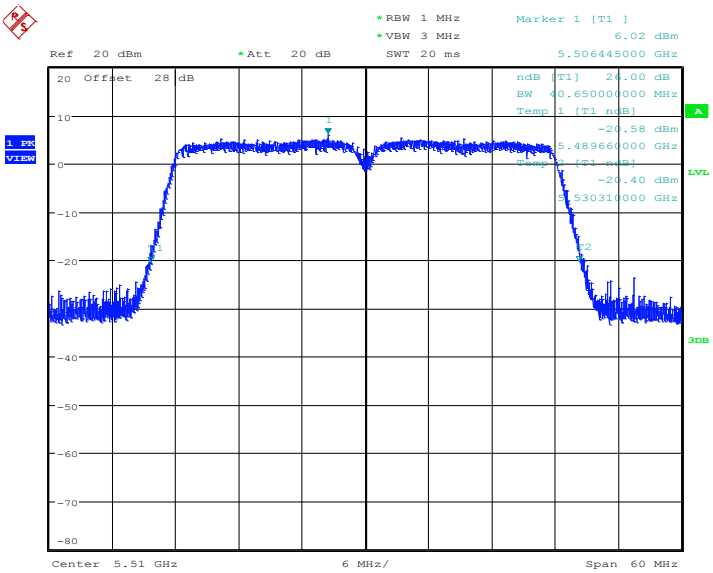


Date: 23.APR.2013 20:51:54

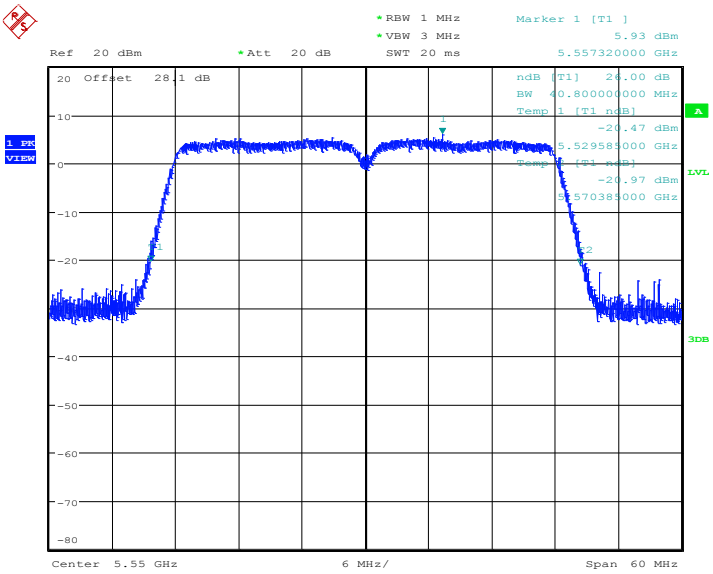
26 dB Bandwidth Plot on 802.11ac VHT40 Channel 62



26 dB Bandwidth Plot on 802.11ac VHT40 Channel 102

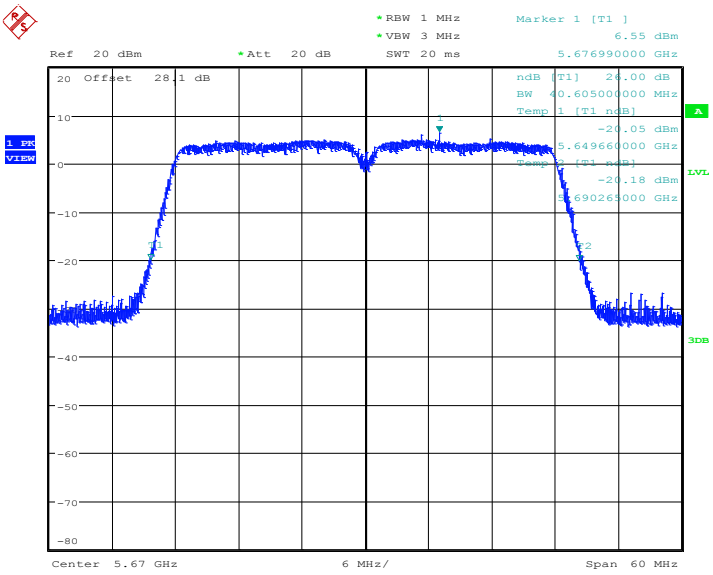


26 dB Bandwidth Plot on 802.11ac VHT40 Channel 110



Date: 23.APR.2013 21:16:22

26 dB Bandwidth Plot on 802.11ac VHT40 Channel 134

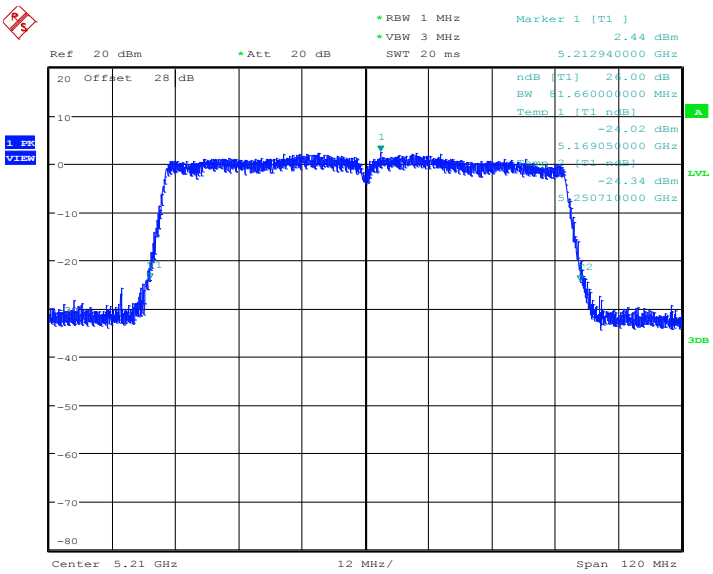


Date: 23.APR.2013 21:01:29

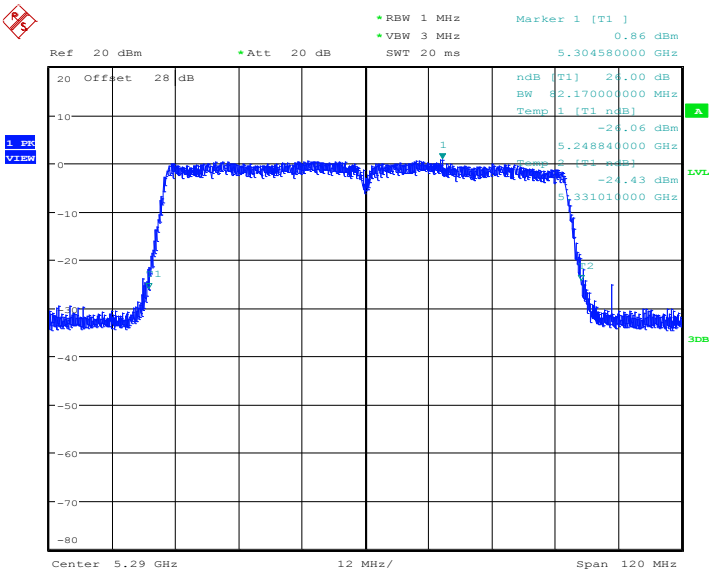
Test Mode :	802.11ac VHT80	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11ac VHT80 26dB Bandwidth (MHz)	Pass/Fail
NII Band 1	42	5210	81.66	N/A
NII Band 2	58	5290	82.17	N/A
NII Band 3	106	5530	82.08	N/A

26 dB Bandwidth Plot on 802.11ac VHT80 Channel 42

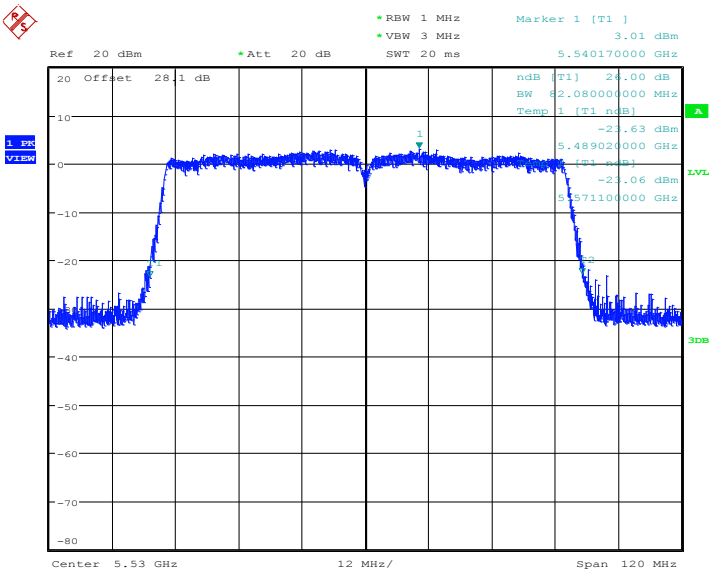


26 dB Bandwidth Plot on 802.11ac VHT80 Channel 58



Date: 23.APR.2013 21:21:04

26 dB Bandwidth Plot on 802.11ac VHT80 Channel 106



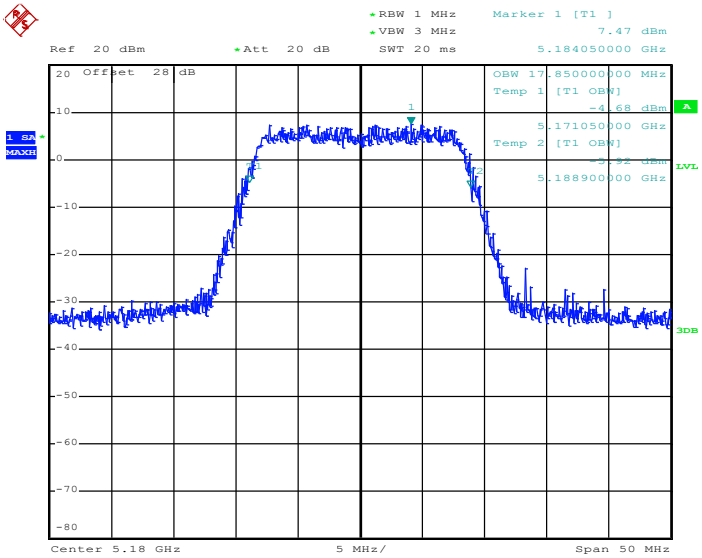
Date: 23.APR.2013 21:26:37

3.1.6 Test Result of 99% Occupied Bandwidth Plots

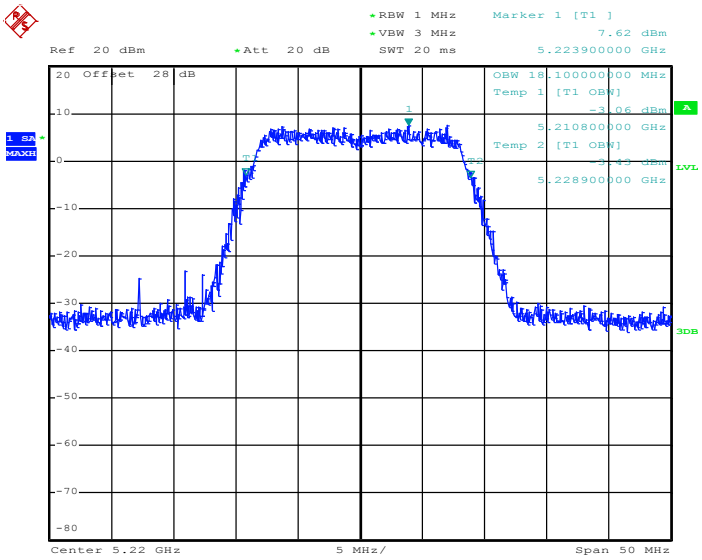
Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11a 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	17.850	N/A
	44	5220	18.100	N/A
	48	5240	17.800	N/A
NII Band 2	52	5260	17.900	N/A
	60	5300	17.900	N/A
	64	5320	17.950	N/A
NII Band 3	100	5500	18.000	N/A
	116	5580	18.050	N/A
	140	5700	17.650	N/A

99% Occupied Bandwidth Plot on 802.11a Channel 36

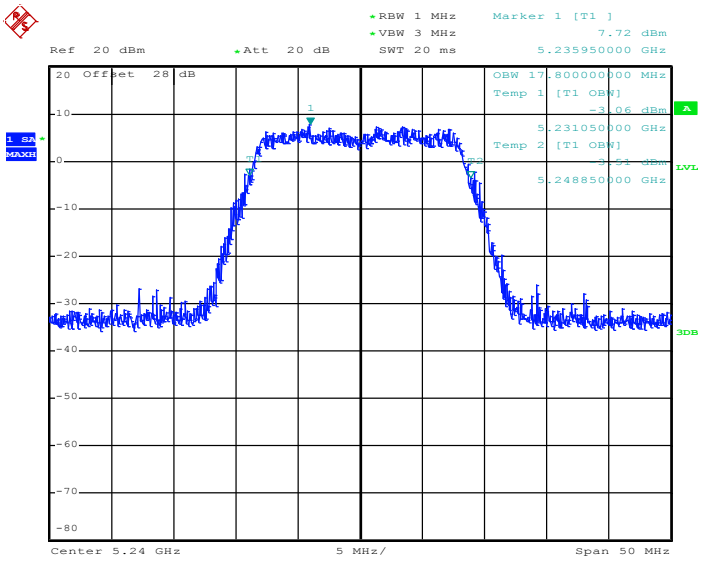


99% Occupied Bandwidth Plot on 802.11a Channel 44



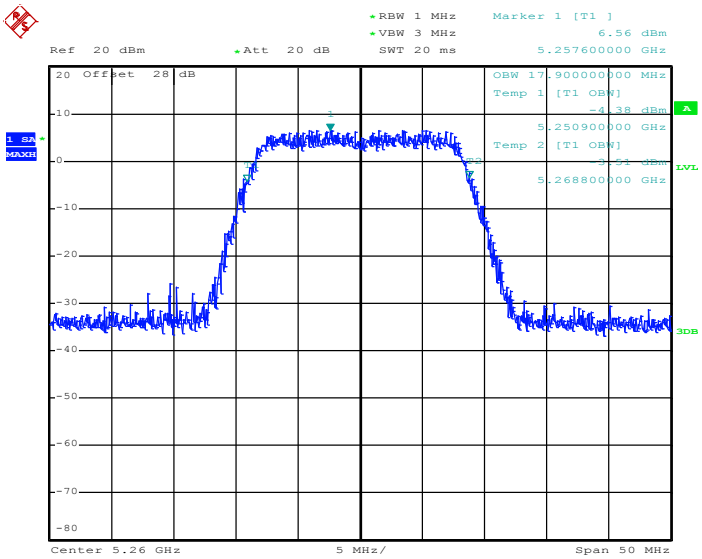
Date: 11.APR.2013 22:49:37

99% Occupied Bandwidth Plot on 802.11a Channel 48



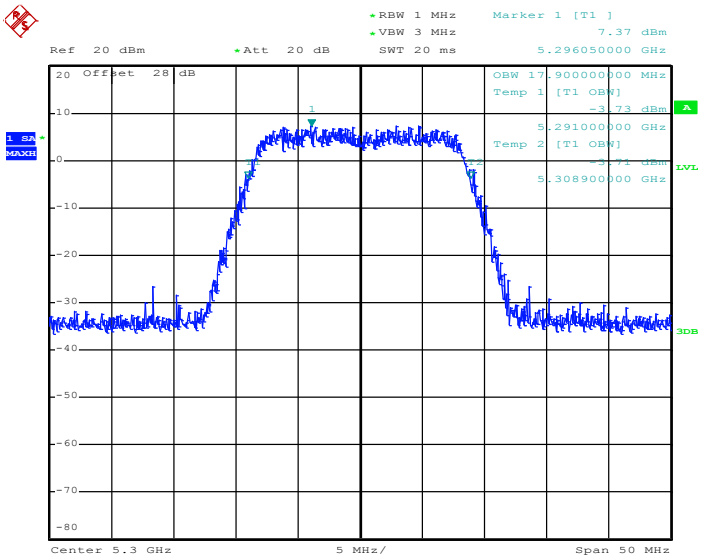
Date: 11.APR.2013 22:52:09

99% Occupied Bandwidth Plot on 802.11a Channel 52



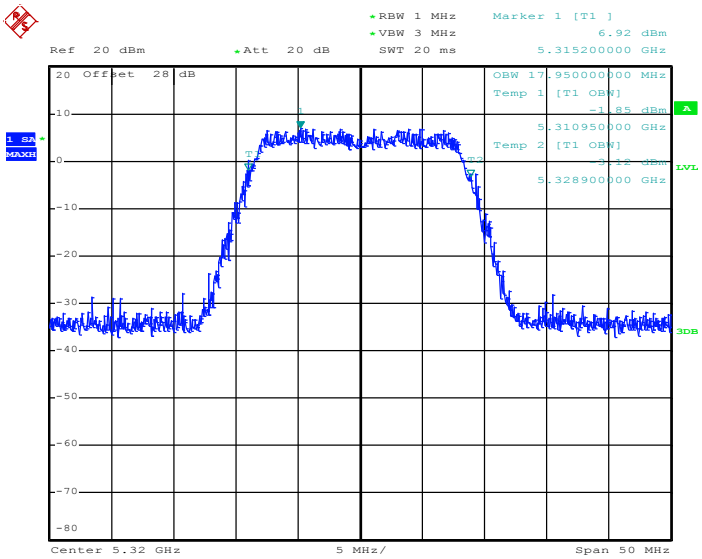
Date: 19.APR.2013 19:18:45

99% Occupied Bandwidth Plot on 802.11a Channel 60



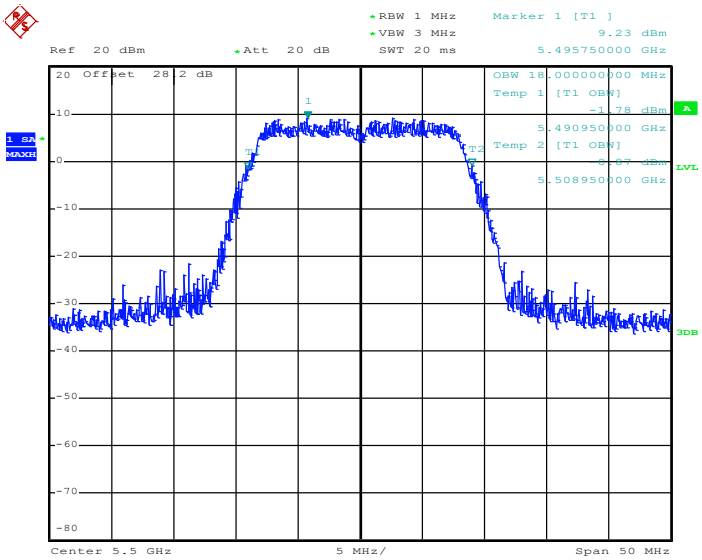
Date: 19.APR.2013 19:31:56

99% Occupied Bandwidth Plot on 802.11a Channel 64



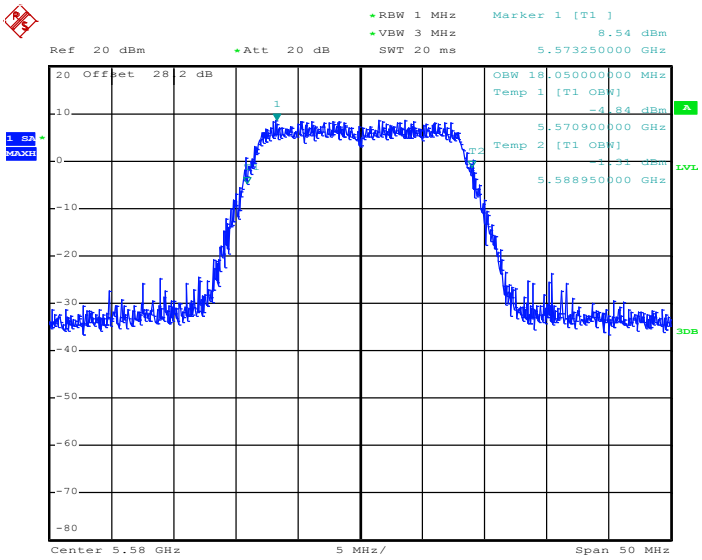
Date: 19.APR.2013 19:36:02

99% Occupied Bandwidth Plot on 802.11a Channel 100



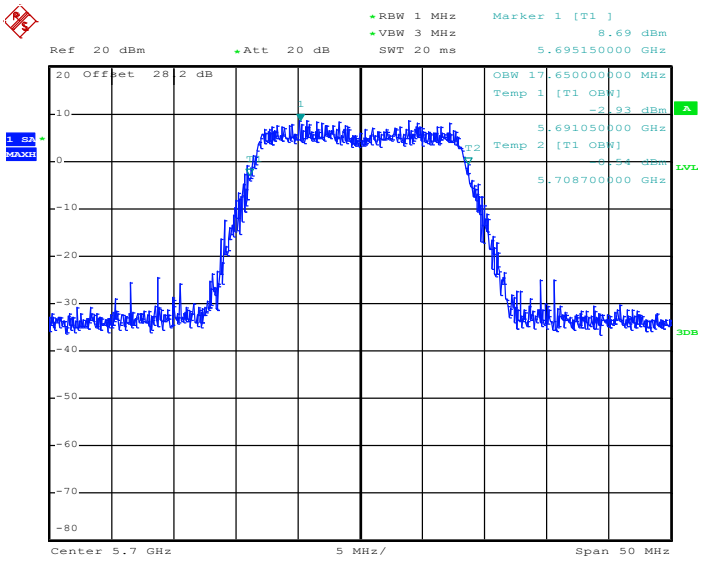
Date: 11.APR.2013 23:08:38

99% Occupied Bandwidth Plot on 802.11a Channel 116



Date: 11.APR.2013 23:12:31

99% Occupied Bandwidth Plot on 802.11a Channel 140

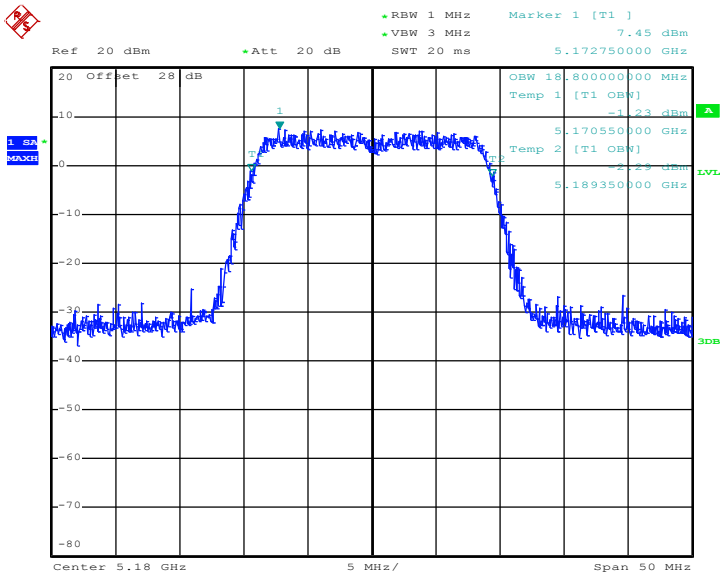


Date: 11.APR.2013 23:15:23

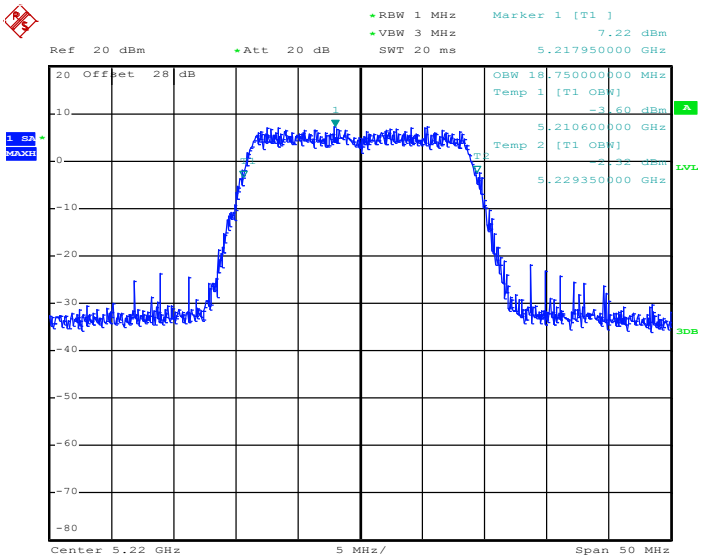
Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11n HT20 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	18.800	N/A
	44	5220	18.750	N/A
	48	5240	18.700	N/A
NII Band 2	52	5260	18.700	N/A
	60	5300	18.750	N/A
	64	5320	18.650	N/A
NII Band 3	100	5500	18.750	N/A
	116	5580	18.750	N/A
	140	5700	18.600	N/A

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 36

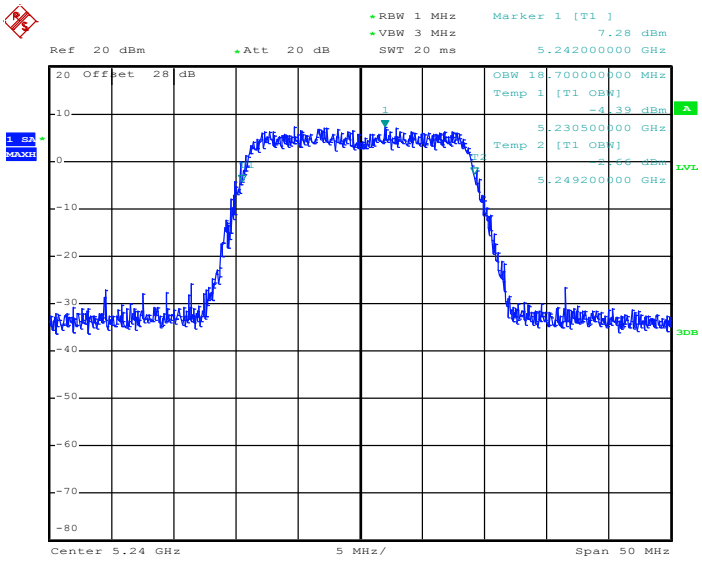


99% Occupied Bandwidth Plot on 802.11n HT20 Channel 44



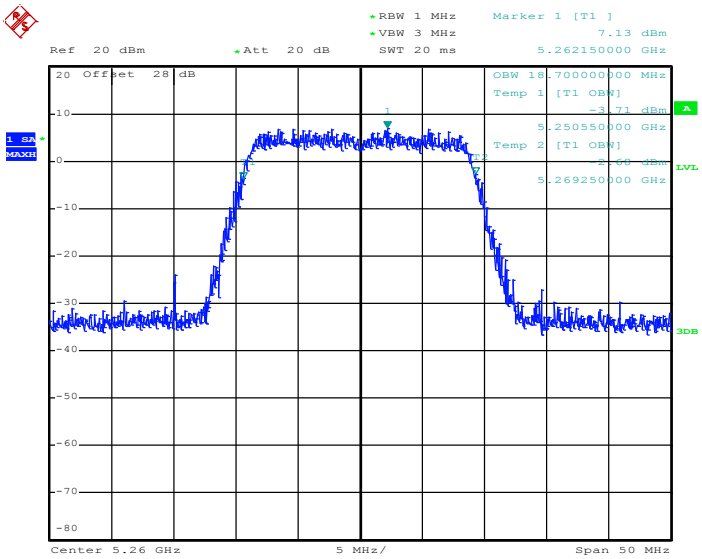
Date: 12.APR.2013 00:18:21

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 48



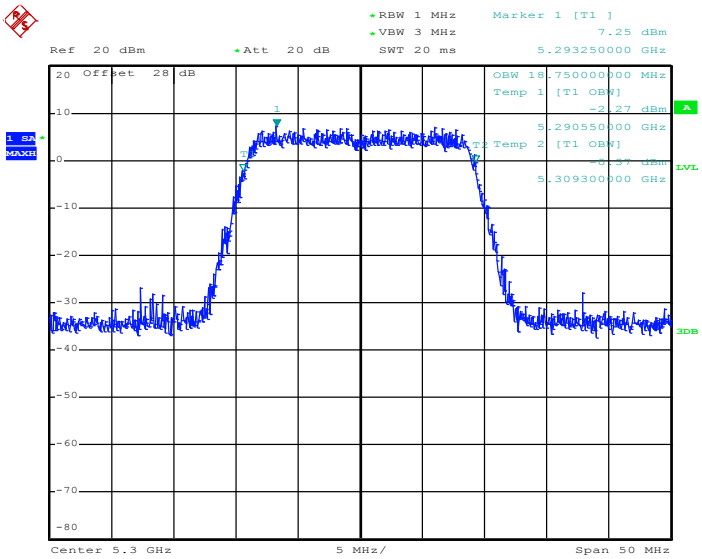
Date: 12.APR.2013 00:15:49

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 52



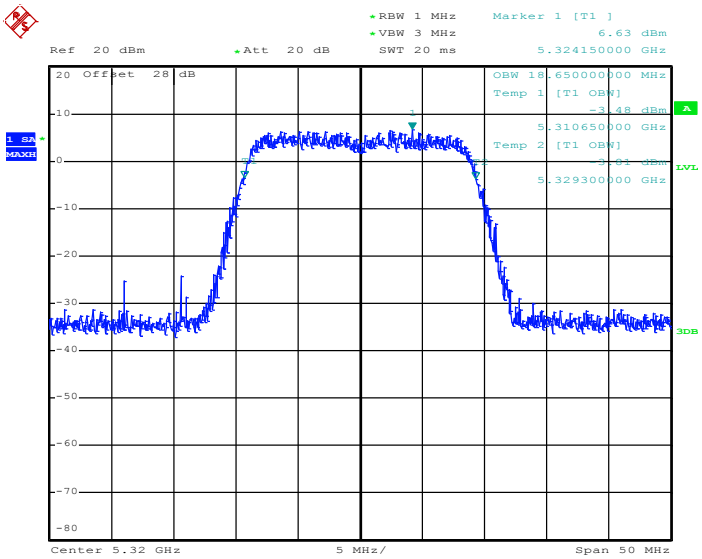
Date: 19.APR.2013 19:56:12

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 60



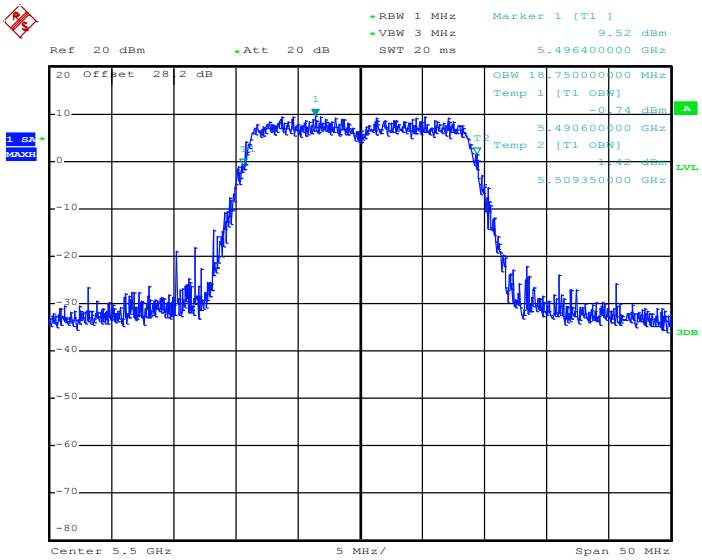
Date: 19.APR.2013 19:46:32

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 64



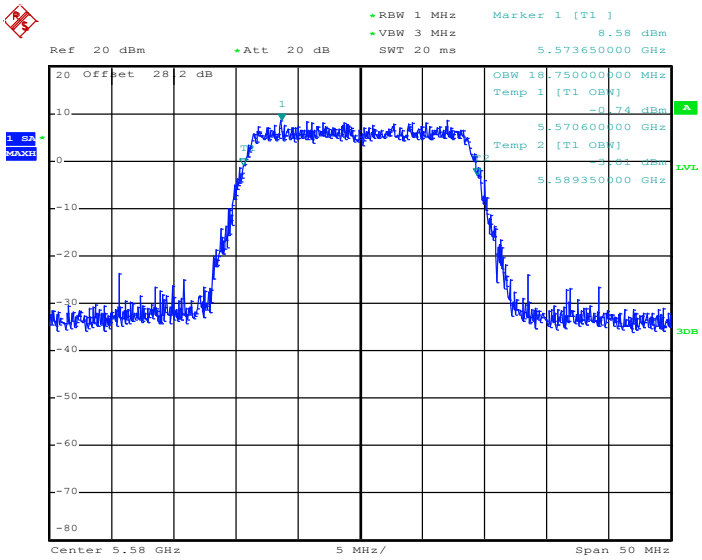
Date: 19.APR.2013 19:39:46

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 100



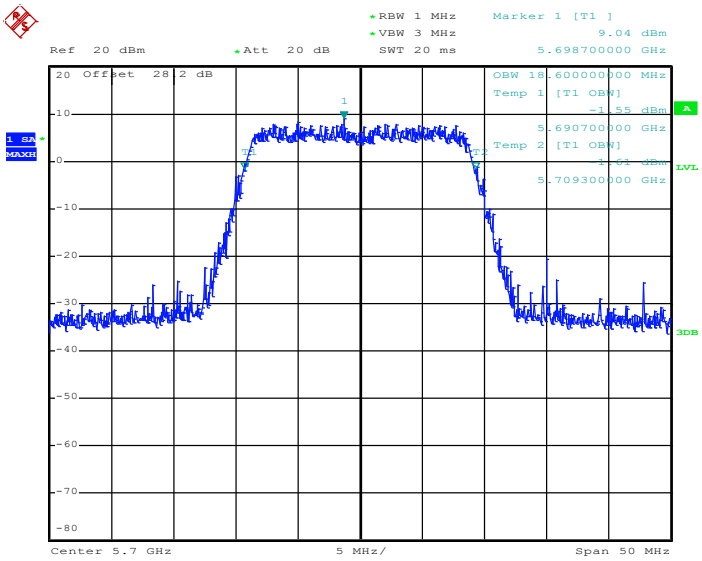
Date: 12.APR.2013 20:21:53

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 116



Date: 11.APR.2013 23:47:59

99% Occupied Bandwidth Plot on 802.11n HT20 Channel 140

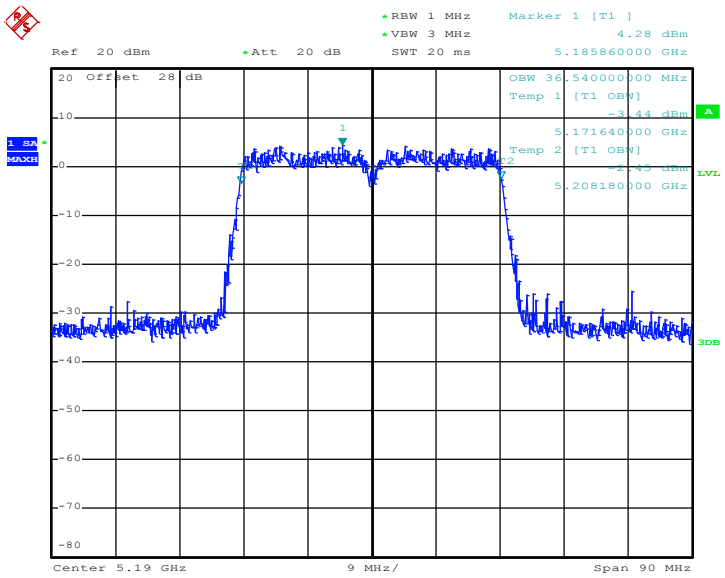


Date: 11.APR.2013 23:28:08

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

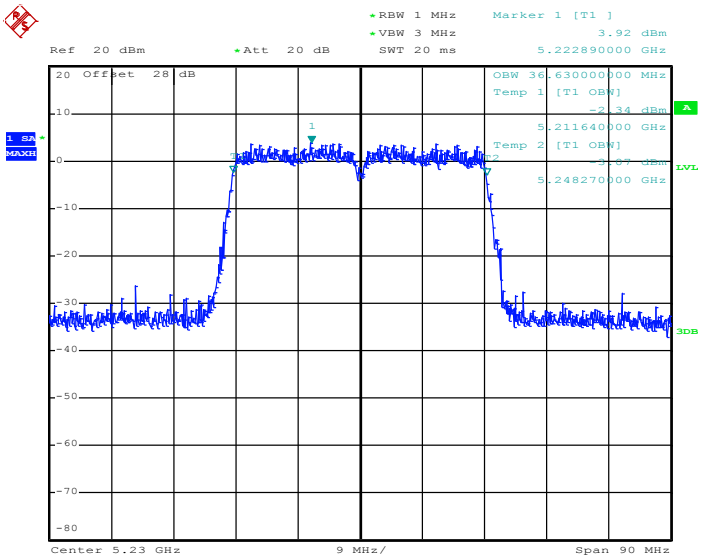
Band	Channel	Frequency (MHz)	802.11n HT40 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	38	5190	36.540	N/A
	46	5230	36.630	N/A
NII Band 2	54	5270	36.720	N/A
	62	5310	36.540	N/A
NII Band 3	102	5510	36.630	N/A
	110	5550	36.630	N/A
	134	5670	36.630	N/A

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 38



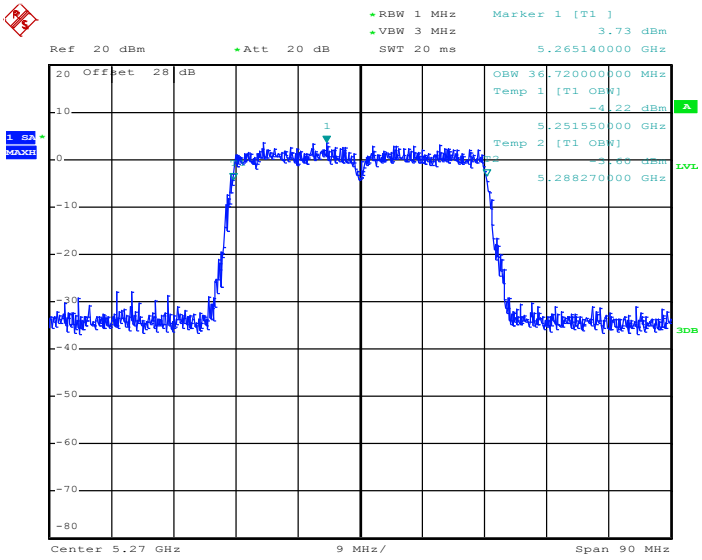
Date: 12.APR.2013 00:36:14

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 46



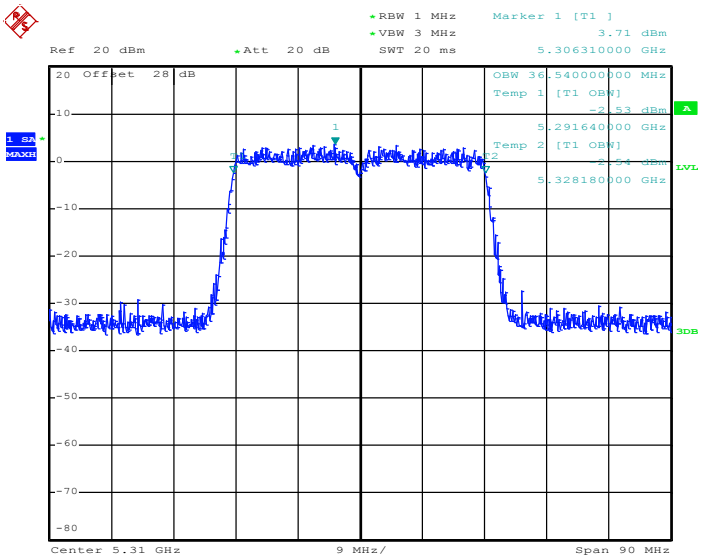
Date: 12.APR.2013 00:39:12

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 54



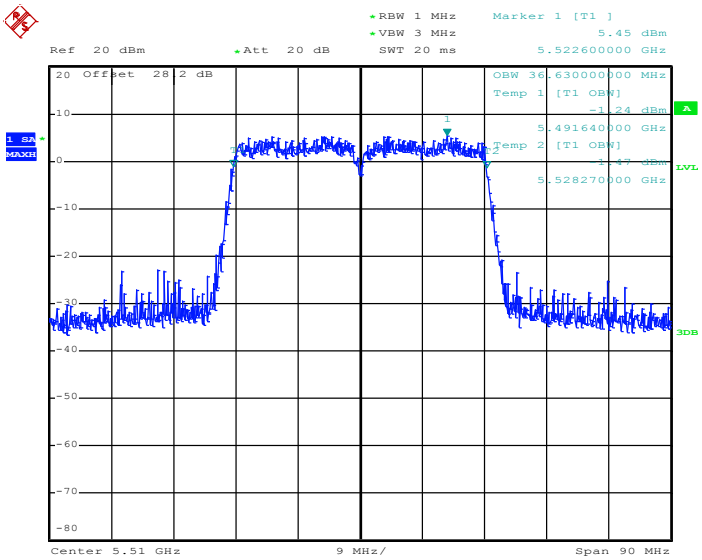
Date: 19.APR.2013 21:07:14

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 62



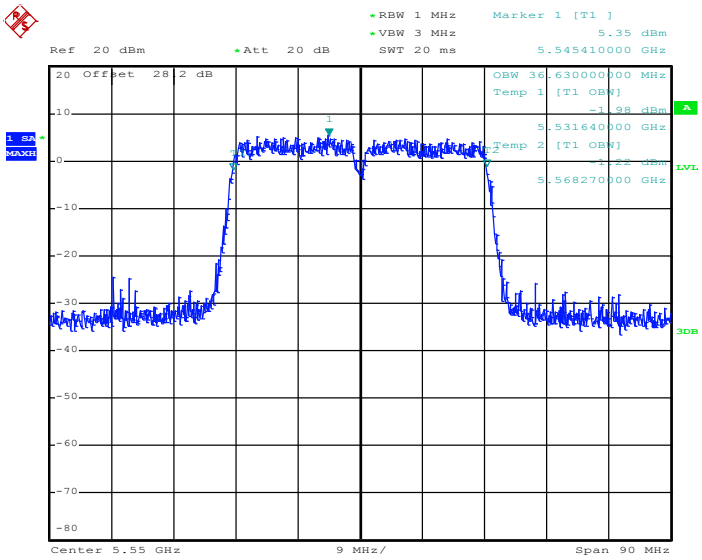
Date: 19.APR.2013 21:13:58

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 102



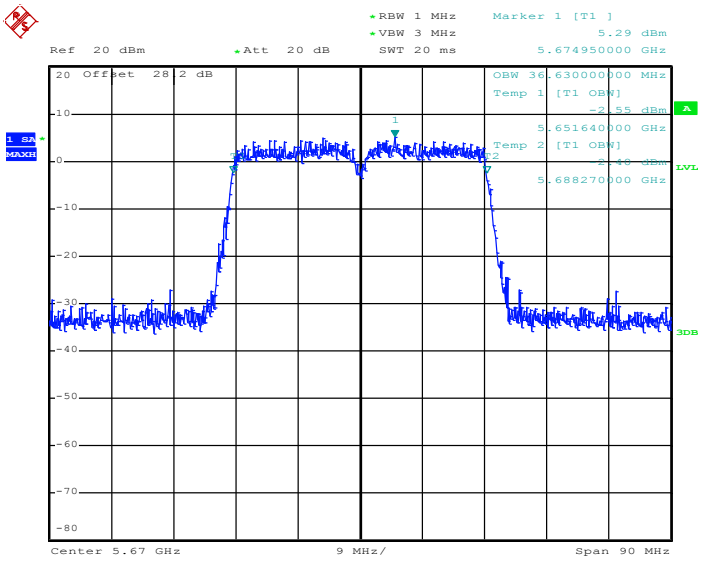
Date: 12.APR.2013 00:49:04

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 110



Date: 12.APR.2013 00:53:38

99% Occupied Bandwidth Plot on 802.11n HT40 Channel 134

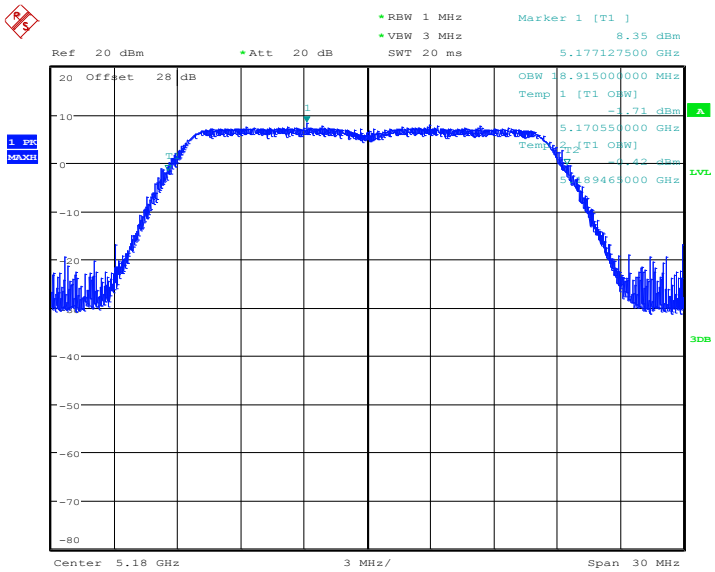


Date: 12.APR.2013 00:57:35

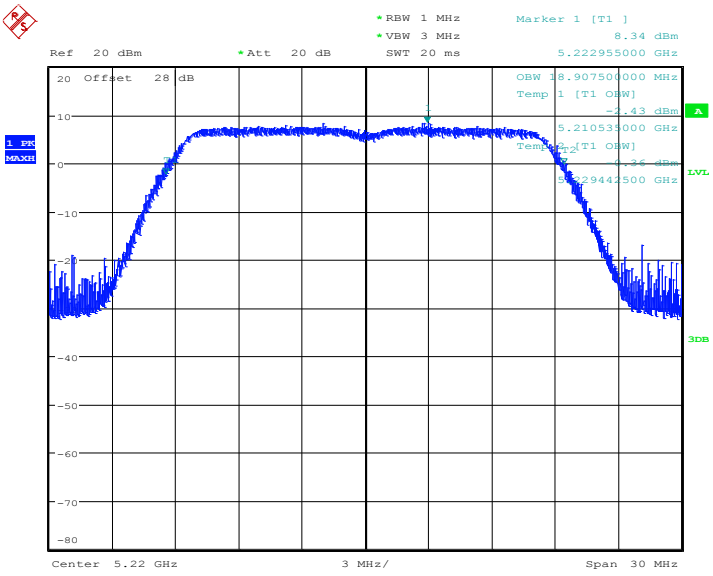
Test Mode :	802.11ac VHT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11ac VHT20 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	36	5180	18.915	N/A
	44	5220	18.908	N/A
	48	5240	18.915	N/A
NII Band 2	52	5260	18.915	N/A
	60	5300	18.908	N/A
	64	5320	18.908	N/A
NII Band 3	100	5500	18.938	N/A
	116	5580	18.930	N/A
	140	5700	18.945	N/A

99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 36

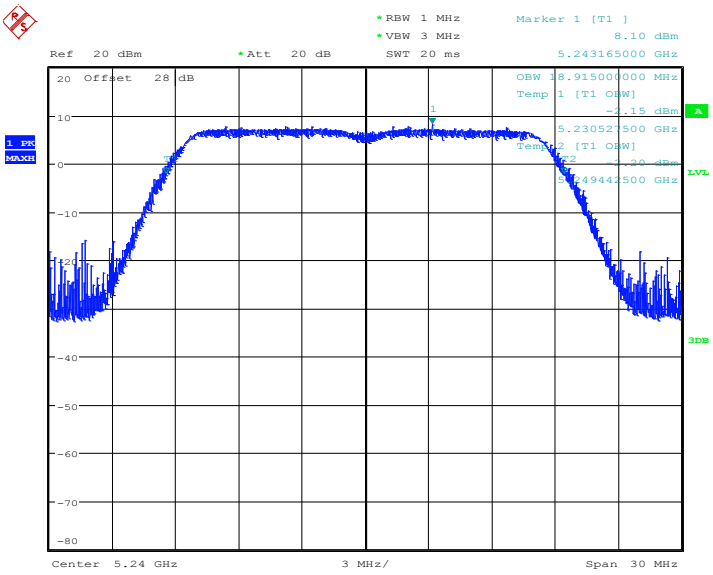


99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 44



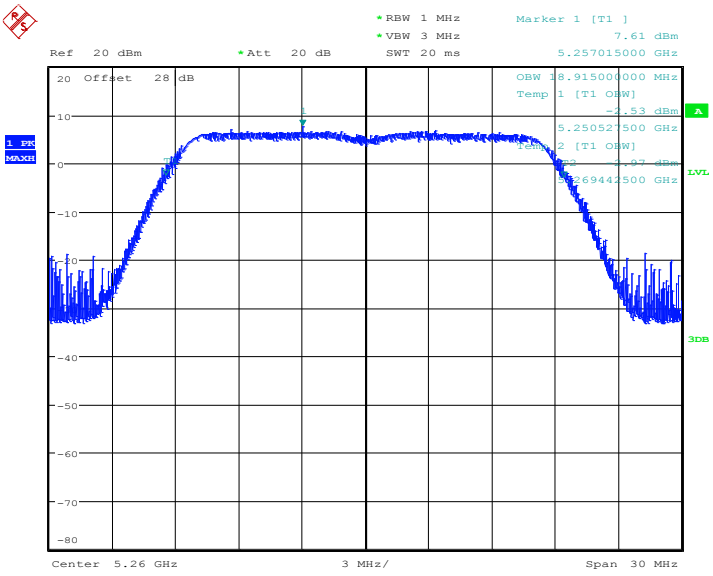
Date: 23.APR.2013 20:14:24

99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 48



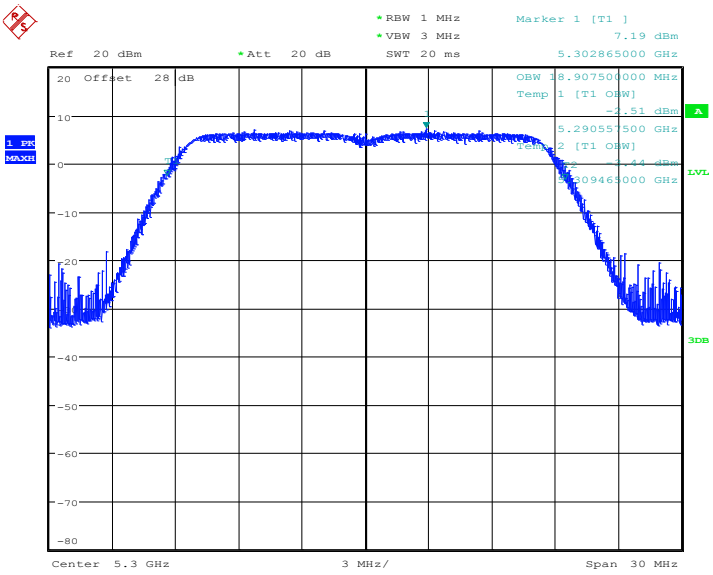
Date: 23.APR.2013 20:18:13

99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 52



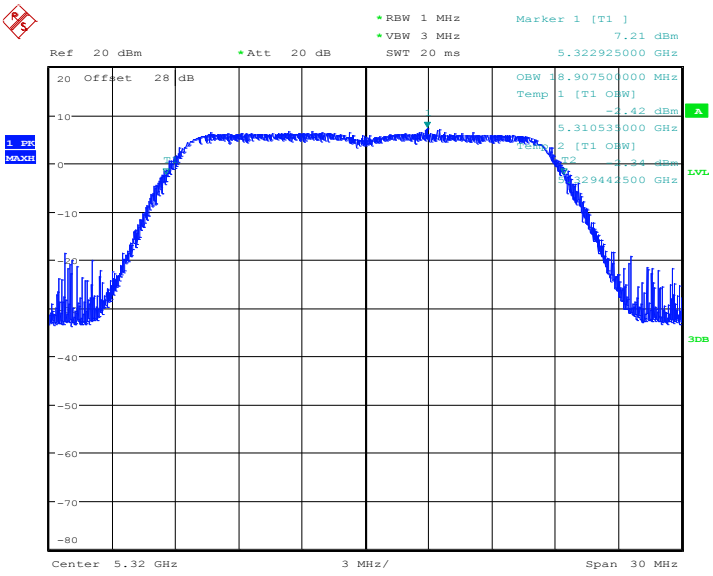
Date: 23.APR.2013 20:19:37

99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 60

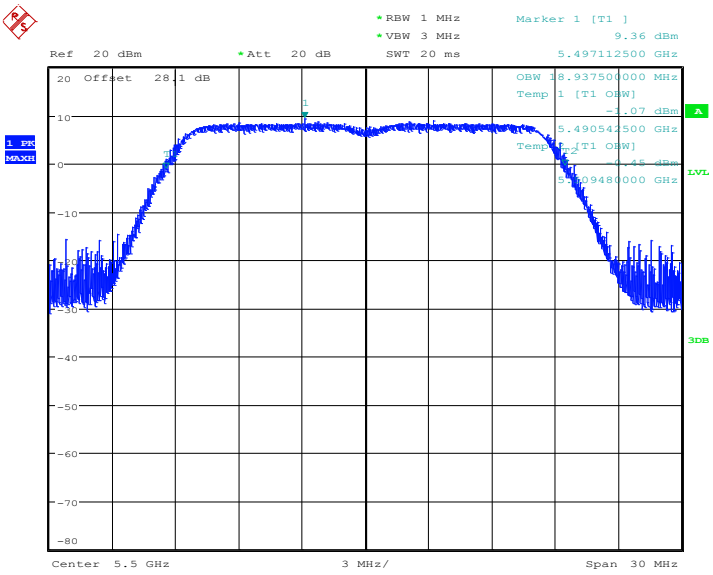


Date: 23.APR.2013 20:21:01

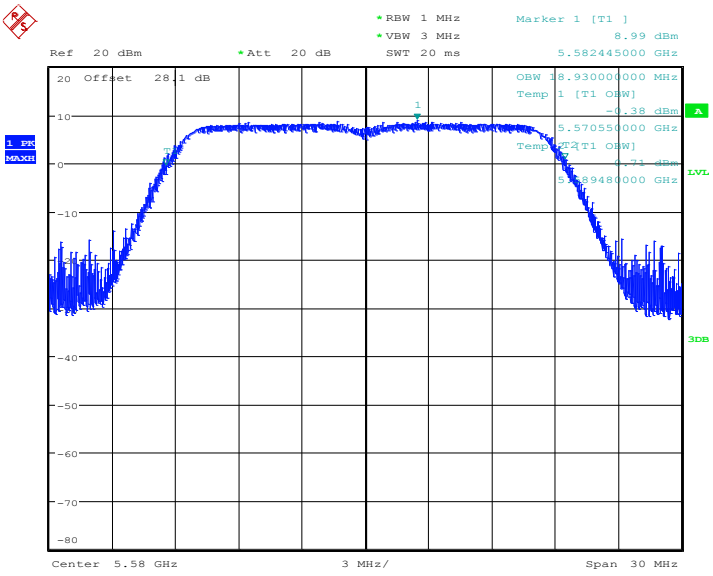
99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 64



99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 100

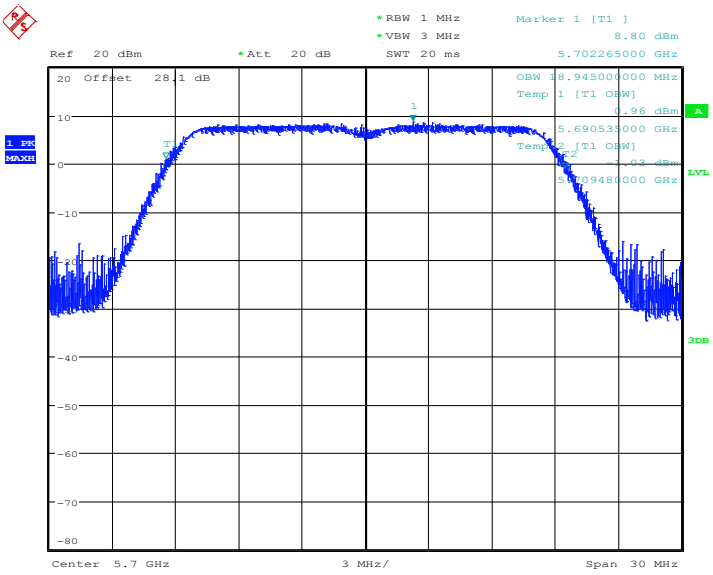


99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 116



Date: 23.APR.2013 20:26:12

99% Occupied Bandwidth Plot on 802.11ac VHT20 Channel 140

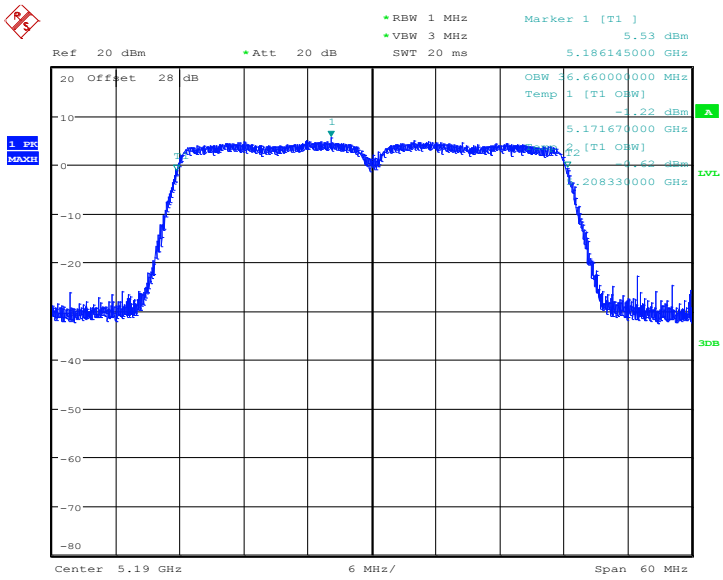


Date: 23.APR.2013 20:27:40

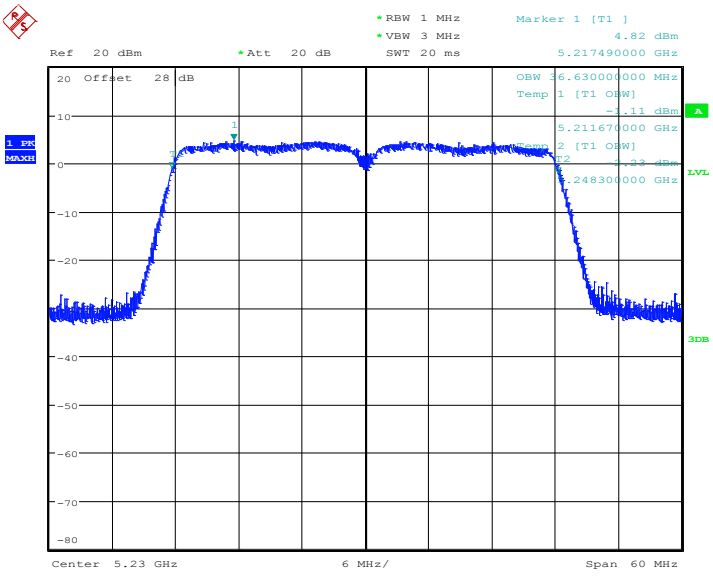
Test Mode :	802.11ac VHT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11ac VHT40 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	38	5190	36.660	N/A
	46	5230	36.630	N/A
NII Band 2	54	5270	36.675	N/A
	62	5310	36.615	N/A
NII Band 3	102	5510	36.630	N/A
	110	5550	36.705	N/A
	134	5670	36.600	N/A

99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 38

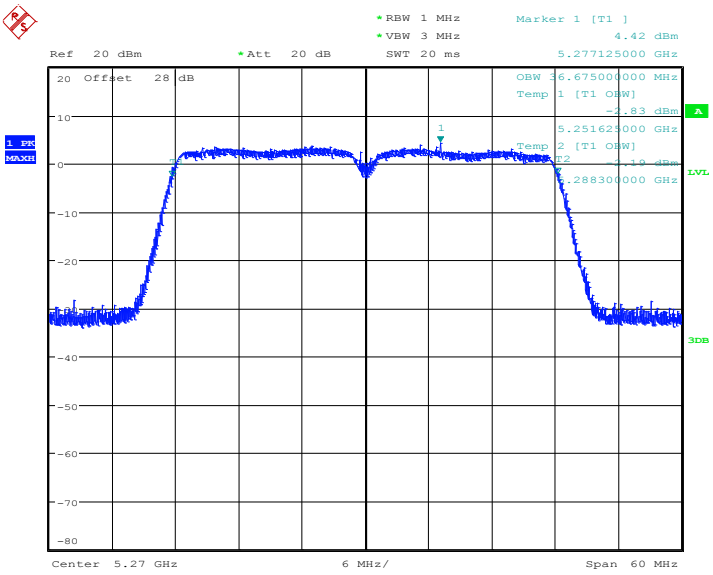


99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 46



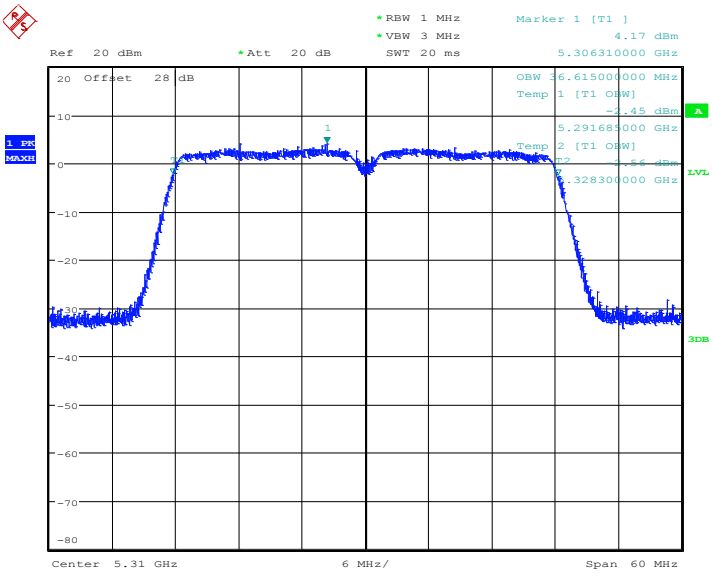
Date: 23.APR.2013 20:50:44

99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 54



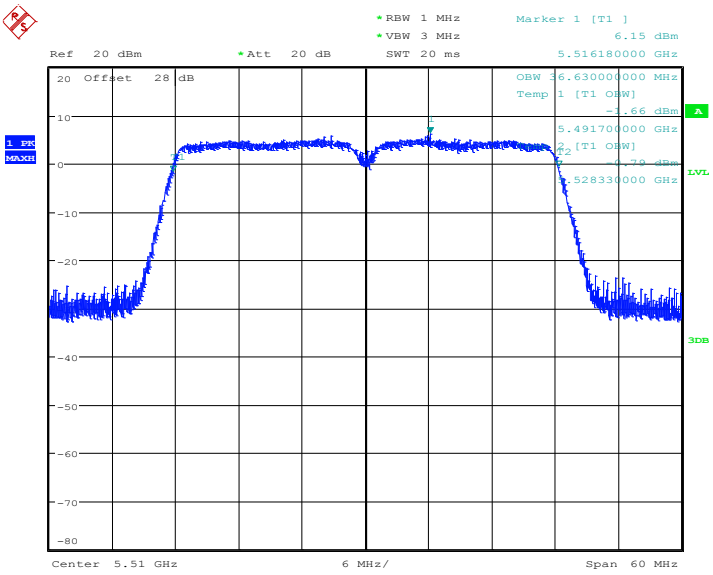
Date: 23.APR.2013 20:52:23

99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 62



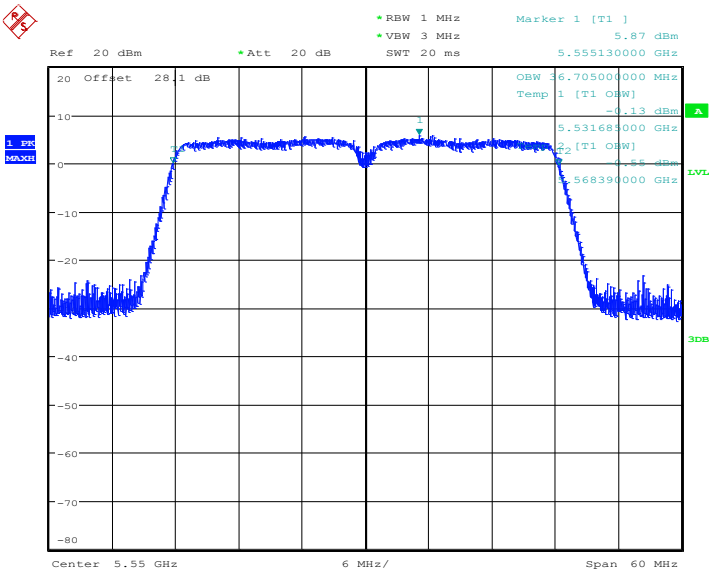
Date: 23.APR.2013 20:54:01

99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 102



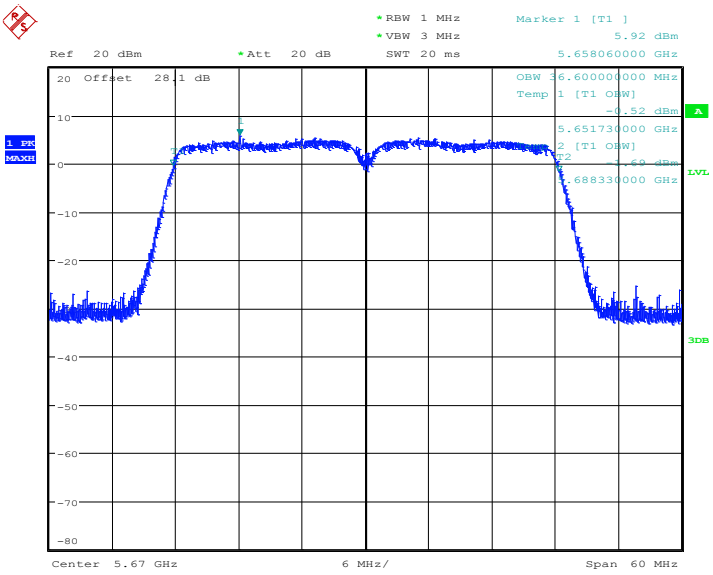
Date: 23.APR.2013 20:55:53

99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 110



Date: 23.APR.2013 21:17:44

99% Occupied Bandwidth Plot on 802.11ac VHT40 Channel 134

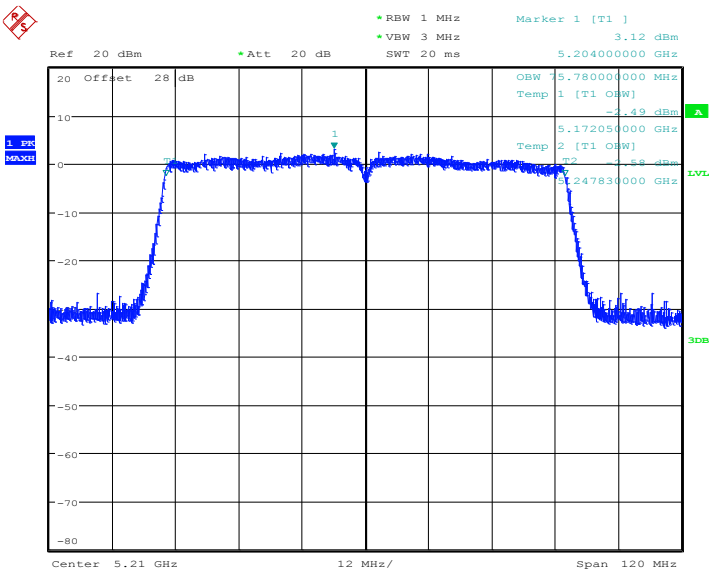


Date: 23.APR.2013 21:02:28

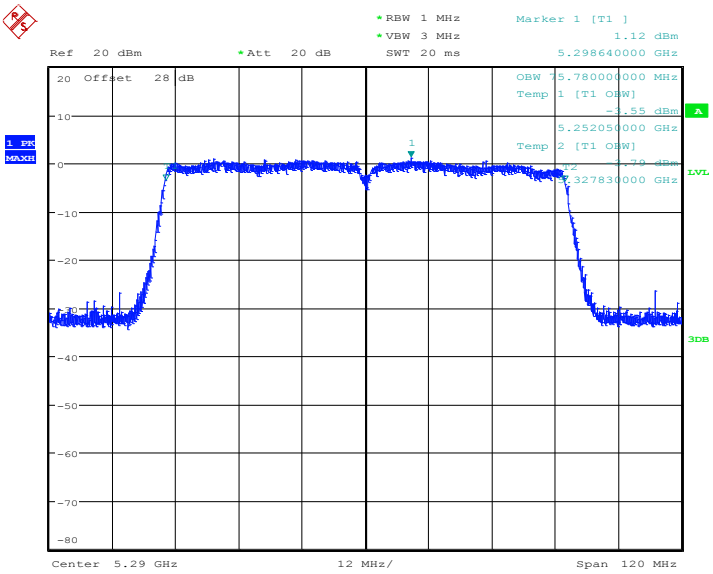
Test Mode :	802.11ac VHT80	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%

Band	Channel	Frequency (MHz)	802.11ac VHT80 99% Occupied Bandwidth (MHz)	Pass/Fail
NII Band 1	42	5210	75.78	N/A
NII Band 2	58	5290	75.78	N/A
NII Band 3	106	5530	75.81	N/A

99% Occupied Bandwidth Plot on 802.11ac VHT80 Channel 42

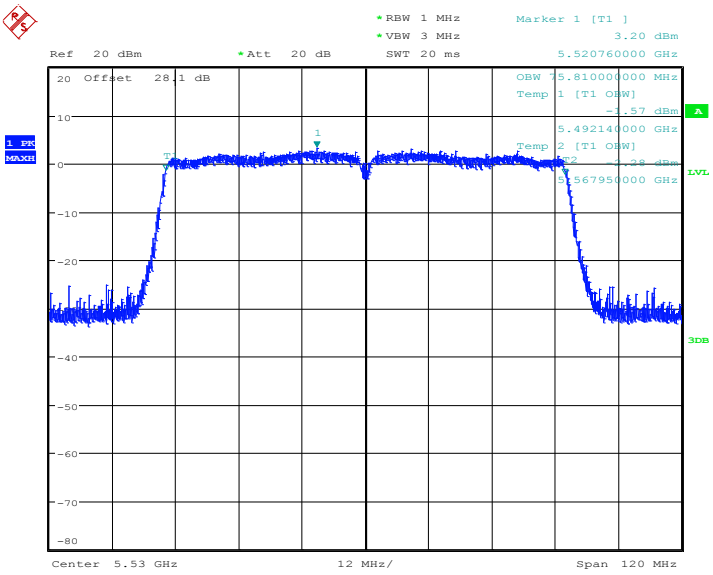


99% Occupied Bandwidth Plot on 802.11ac VHT80 Channel 58



Date: 23.APR.2013 21:21:57

99% Occupied Bandwidth Plot on 802.11ac VHT80 Channel 106



Date: 23.APR.2013 21:27:09

3.2 Maximum Conducted Output Power Measurement

3.2.1 Limit of Maximum Conducted Output Power

For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log B, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the bands 5250-5350 MHz and 5470-5600 MHz and 5650-5725 MHz, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log B, where B is the 26 dB emissions bandwidth in 1-MHz. If transmitting antenna directional gain is greater than 6 dBi, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.2.2 Measuring Instruments

See list of measuring instruments of this test report.

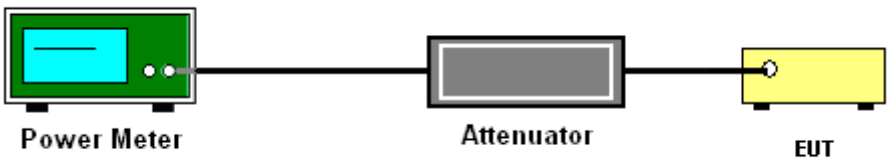
3.2.3 Test Procedures

The testing follows Method PM of FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Method PM (Measurement using an RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit continuously with a consistent duty cycle at its maximum power control level.
3. Measure the average power of the transmitter, and the average power is corrected with duty factor, 10 log(1/x), where x is the duty cycle.

3.2.4 Test Setup



3.2.5 Test Result of Maximum Conducted Output Power

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	93.46%	Duty Factor :	0.29dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	11.58	11.87	17	Pass
	44	5220	10.91	11.20	17	Pass
	48	5240	10.81	11.10	17	Pass
NII Band 2	52	5260	9.99	10.28	24	Pass
	60	5300	10.35	10.64	24	Pass
	64	5320	9.97	10.26	24	Pass
NII Band 3	100	5500	11.15	11.44	24	Pass
	116	5580	10.73	11.02	24	Pass
	140	5700	10.04	10.33	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
3. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	92.36%	Duty Factor :	0.35dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	11.32	11.67	17	Pass
	44	5220	11.06	11.41	17	Pass
	48	5240	11.19	11.54	17	Pass
NII Band 2	52	5260	10.17	10.52	24	Pass
	60	5300	9.99	10.34	24	Pass
	64	5320	9.70	10.05	24	Pass
NII Band 3	100	5500	11.14	11.49	24	Pass
	116	5580	10.83	11.18	24	Pass
	140	5700	9.98	10.33	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
3. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	86.72%	Duty Factor :	0.62dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	38	5190	10.59	11.21	17	Pass
	46	5230	10.45	11.07	17	Pass
NII Band 2	54	5270	9.65	10.27	24	Pass
	62	5310	9.42	10.04	24	Pass
NII Band 3	102	5510	10.21	10.83	24	Pass
	110	5550	10.08	10.70	24	Pass
	134	5670	9.86	10.48	24	Pass

Note:

1. Final Output Power equals to Measured Output Power adds the duty factor.
2. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
3. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11ac VHT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	93.10%	Duty Factor :	0.31dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	10.87	11.18	17	Pass
	44	5220	10.78	11.09	17	Pass
	48	5240	10.69	11.00	17	Pass
NII Band 2	52	5260	10.20	10.51	24	Pass
	60	5300	10.00	10.31	24	Pass
	64	5320	9.73	10.04	24	Pass
NII Band 3	100	5500	11.19	11.50	24	Pass
	116	5580	11.07	11.38	24	Pass
	140	5700	10.84	11.15	24	Pass

Note:

4. Final Output Power equals to Measured Output Power adds the duty factor.
5. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
6. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11ac VHT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	86.82%	Duty Factor :	0.61dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	10.84	11.45	17	Pass
	44	5220	9.90	10.51	17	Pass
NII Band 2	52	5260	9.54	10.15	24	Pass
	60	5300	9.78	10.39	24	Pass
NII Band 3	100	5500	10.90	11.51	24	Pass
	116	5580	10.89	11.50	24	Pass
	140	5700	10.80	11.41	24	Pass

Note:

4. Final Output Power equals to Measured Output Power adds the duty factor.
5. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
6. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

Test Mode :	802.11ac VHT80	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	77.06%	Duty Factor :	1.13dB

Band	Channel	Frequency (MHz)	Output Power (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	42	5210	10.37	11.50	17	Pass
NII Band 2	58	5290	9.24	10.37	24	Pass
NII Band 3	106	5530	10.40	11.53	24	Pass

Note:

4. Final Output Power equals to Measured Output Power adds the duty factor.
5. For the band 5150-5250 MHz, the maximum conducted output power shall not exceed the lesser of 50 mW (17dBm) or 4 dBm + 10log (26dB BW).
6. For the 5250-5350 MHz and 5470-5600MHz and 5650-5725MHz bands, the maximum conducted output power shall not exceed the lesser of 250 mW (24dBm) or 11 dBm + 10log (26dB BW).

3.3 Power Spectral Density Measurement

3.3.1 Limit of Power Spectral Density

For the band 5150-5250 MHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. For the bands 5250-5350 MHz and 5470-5600 and 5650-5725 MHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna directional gain is greater than 6 dBi, both the maximum conducted output power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.3.2 Measuring Instruments

See list of measuring instruments of this test report.

3.3.3 Test Procedures

The testing follows FCC KDB 789033 D01 General UNII Test Procedures v01r03.

Section F) Peak power spectral density (PPSD).

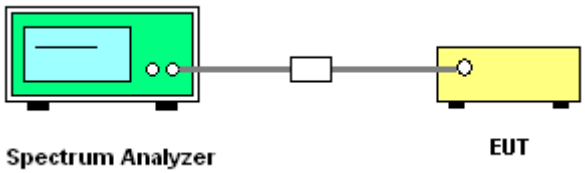
Note: Though the rule refers to “peak power spectral density”, the intent is to measure the maximum value of the time average of the power spectral density measured during a period of continuous transmission.

 # Method SA-2 #

(trace averaging across on and off times of the EUT transmissions, followed by duty cycle correction).

1. The testing follows Method SA-2 of FCC KDB 789033 D01 General UNII Test Procedures v01r03.
   - Measure the duty cycle.
   - Set span to encompass the entire emission bandwidth (EBW) of the signal.
   - Set RBW = 1 MHz.
   - Set VBW ≥ 3 MHz.
   - Number of points in sweep ≥ 2 Span / RBW.
   - Sweep time = auto.
   - Detector = sample
   - Trace average at least 100 traces in power averaging mode.
   - Add 10 log(1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times. For example, add 10 log(1/0.25) = 6 dB if the duty cycle is 25 percent.
2. The RF output of EUT was connected to the spectrum analyzer by a low loss cable.
3. Each plot has already offset with cable loss, and attenuator loss. Measure the PPSD and record it.

3.3.4 Test Setup



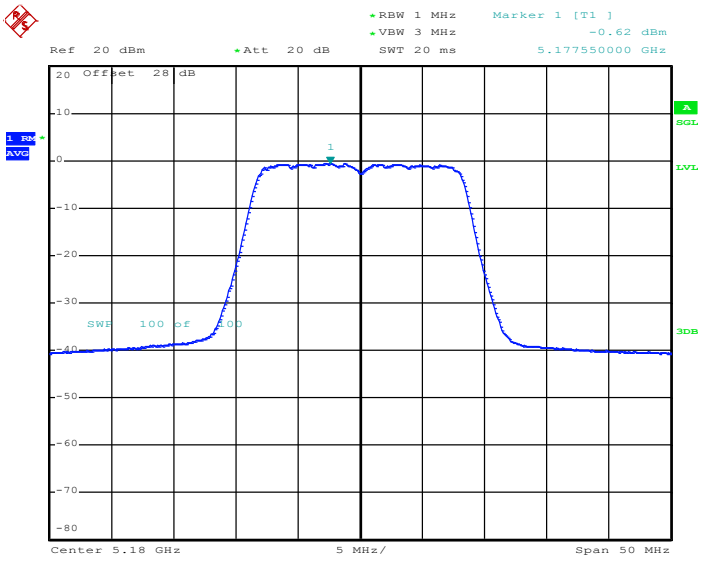
3.3.5 Test Result of Power Spectral Density

Test Mode :	802.11a	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle:	93.46%	Duty Factor:	0.29dB

Band	Channel	Frequency (MHz)	802.11a PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	-0.62	-0.33	4	Pass
	44	5220	-1.03	-0.74	4	Pass
	48	5240	-0.89	-0.60	4	Pass
NII Band 2	52	5260	-1.47	-1.18	11	Pass
	60	5300	-1.27	-0.98	11	Pass
	64	5320	-1.27	-0.98	11	Pass
NII Band 3	100	5500	0.76	1.05	11	Pass
	116	5580	0.37	0.66	11	Pass
	140	5700	0.27	0.56	11	Pass

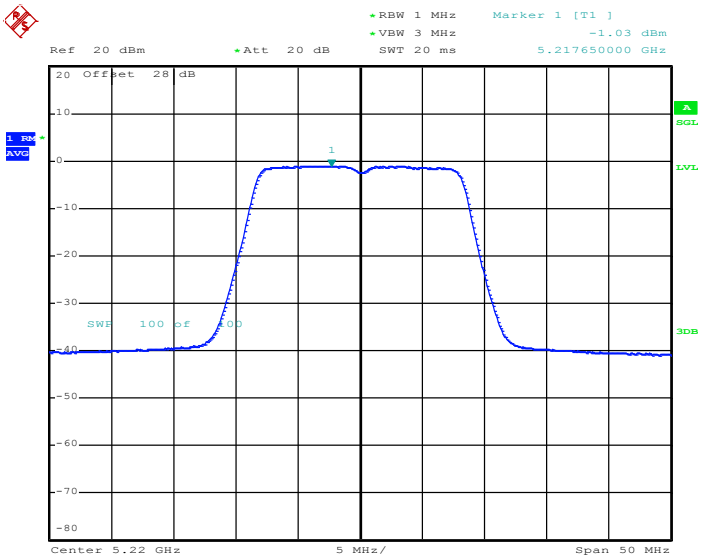
Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11a Channel 36



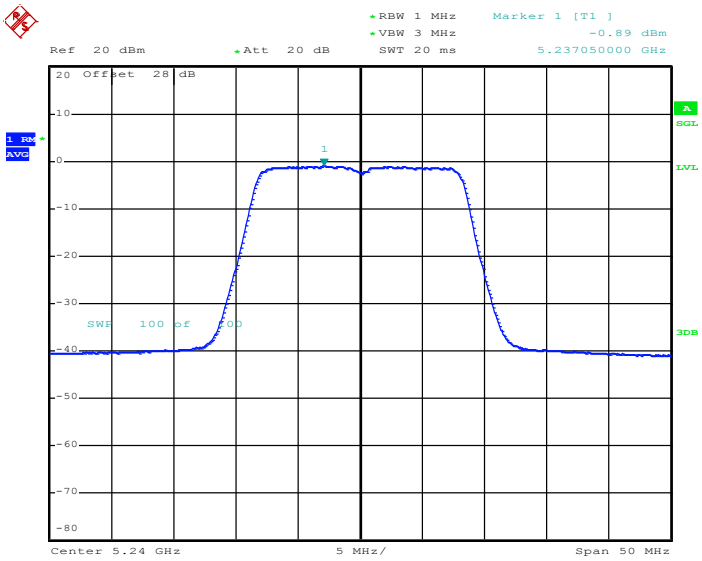
Date: 11.APR.2013 22:44:25

PSD Plot on 802.11a Channel 44



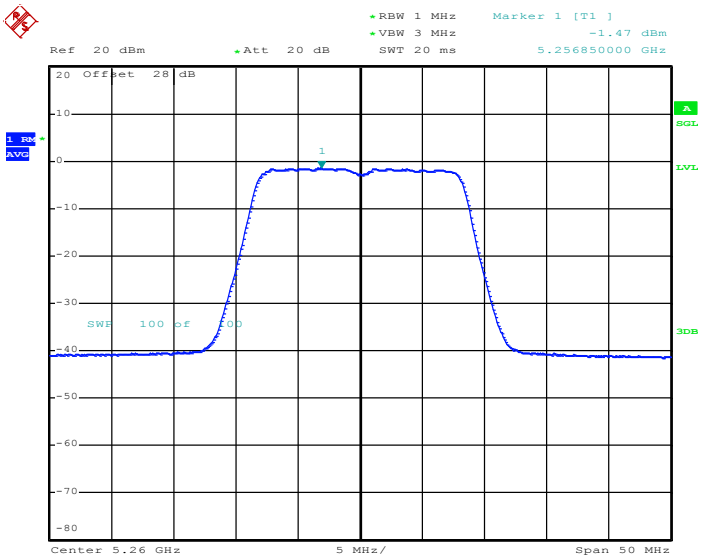
Date: 11.APR.2013 22:47:43

PSD Plot on 802.11a Channel 48



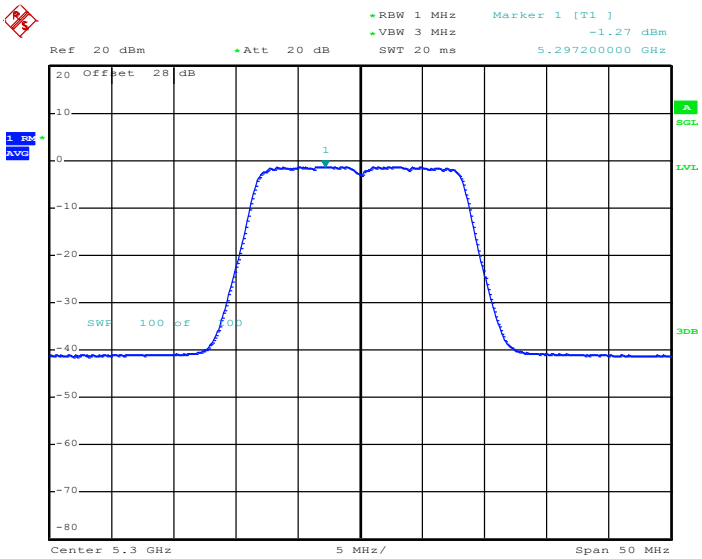
Date: 11.APR.2013 22:51:36

PSD Plot on 802.11a Channel 52



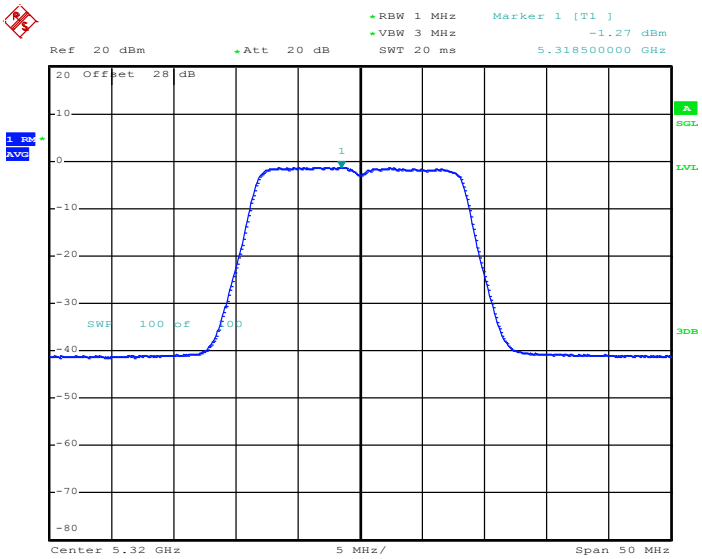
Date: 19.APR.2013 19:18:12

PSD Plot on 802.11a Channel 60



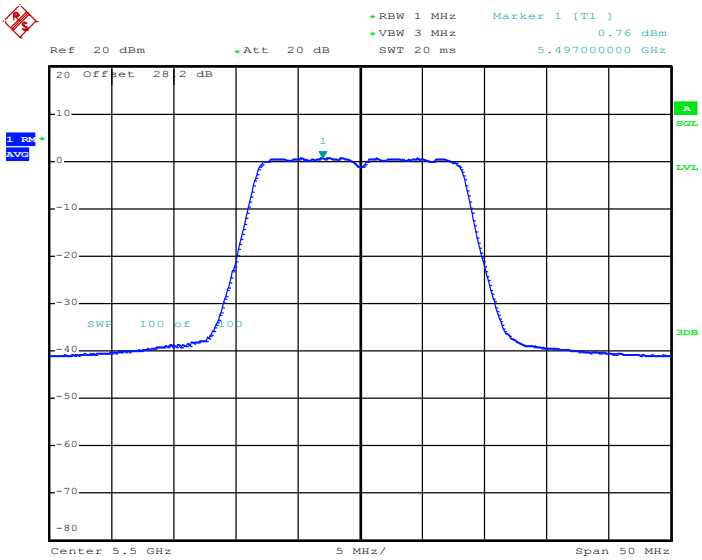
Date: 19.APR.2013 19:31:23

PSD Plot on 802.11a Channel 64



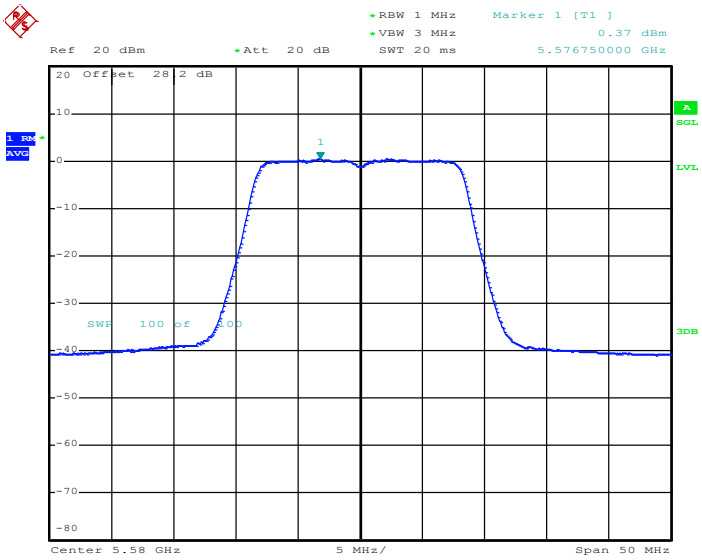
Date: 19.APR.2013 19:35:27

PSD Plot on 802.11a Channel 100



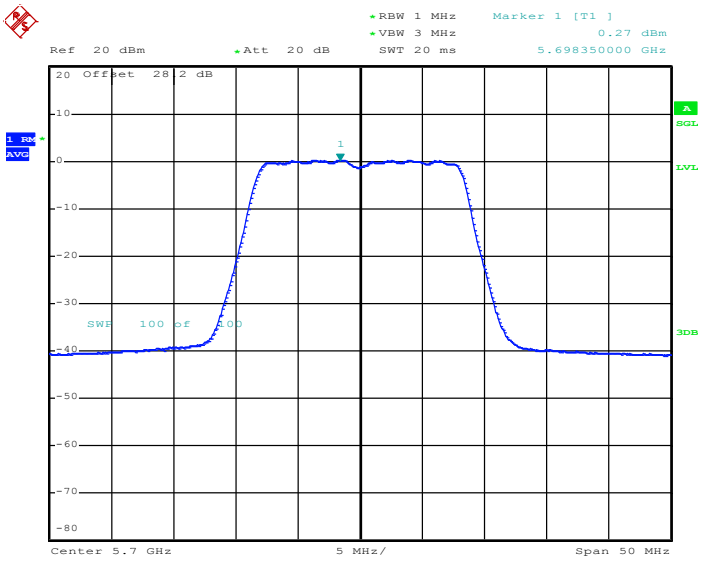
Date: 11.APR.2013 23:08:07

PSD Plot on 802.11a Channel 116



Date: 11.APR.2013 23:11:38

PSD Plot on 802.11a Channel 140



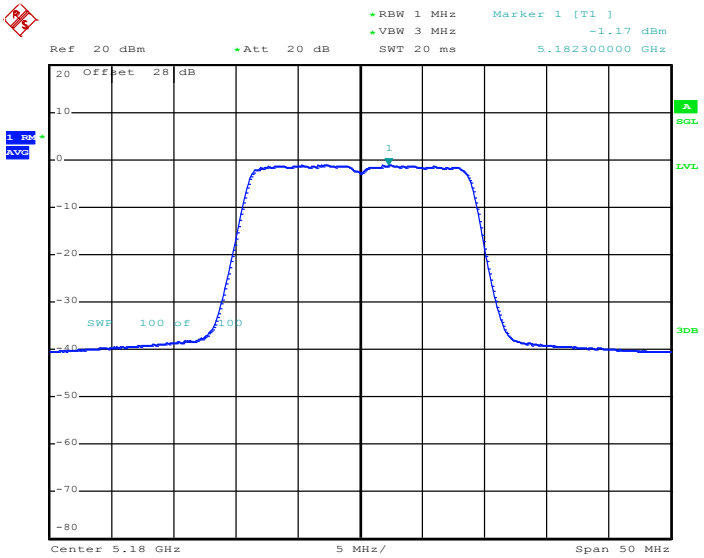
Date: 11.APR.2013 23:14:53

Test Mode :	802.11n HT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	92.36%	Duty Factor :	0.35dB

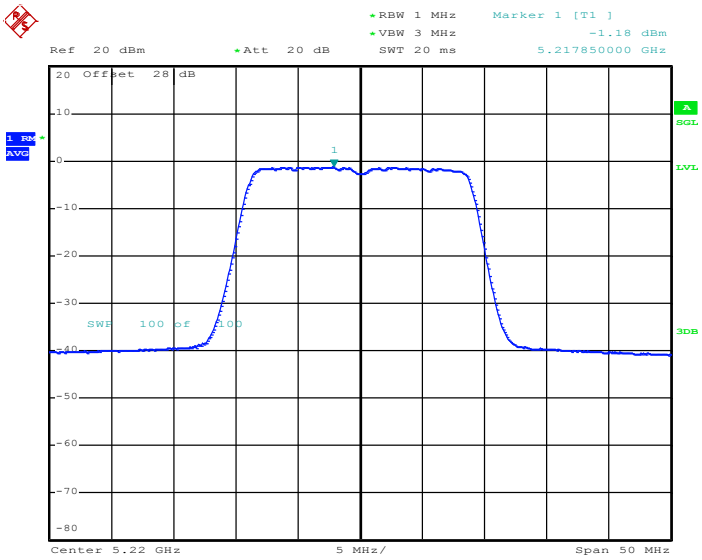
Band	Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	-1.17	-0.82	4	Pass
	44	5220	-1.18	-0.83	4	Pass
	48	5240	-1.31	-0.96	4	Pass
NII Band 2	52	5260	-1.62	-1.27	11	Pass
	60	5300	-1.33	-0.98	11	Pass
	64	5320	-1.75	-1.40	11	Pass
NII Band 3	100	5500	0.84	1.19	11	Pass
	116	5580	0.17	0.52	11	Pass
	140	5700	-0.28	0.07	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11n HT20 channel 36

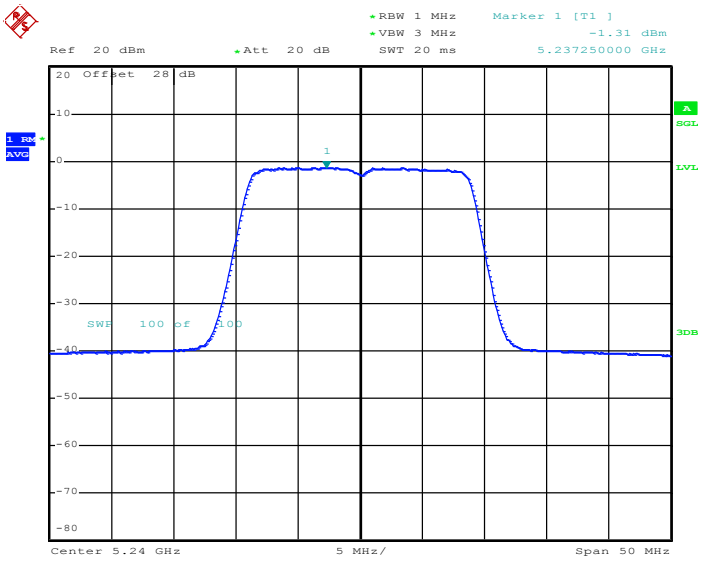


PSD Plot on 802.11n HT20 Channel 44



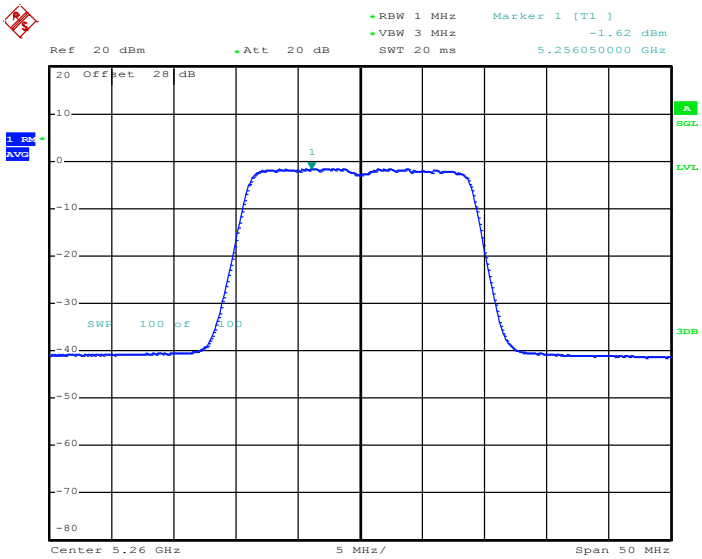
Date: 12.APR.2013 00:17:49

PSD Plot on 802.11n HT20 Channel 48



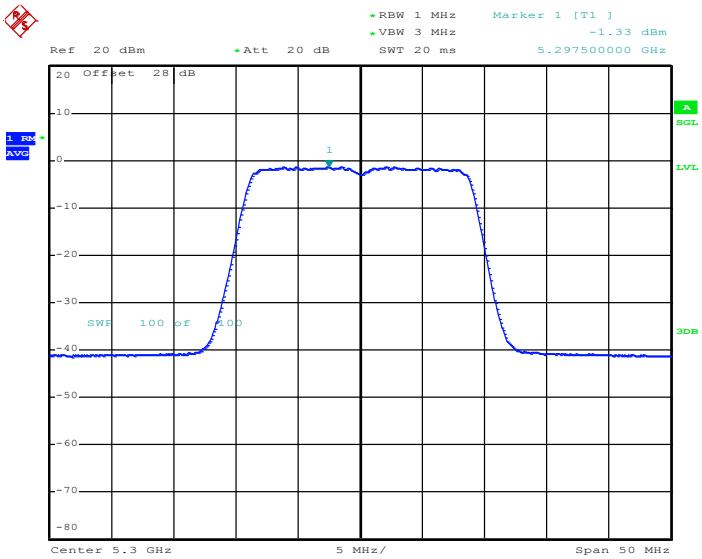
Date: 12.APR.2013 00:15:14

PSD Plot on 802.11n HT20 Channel 52



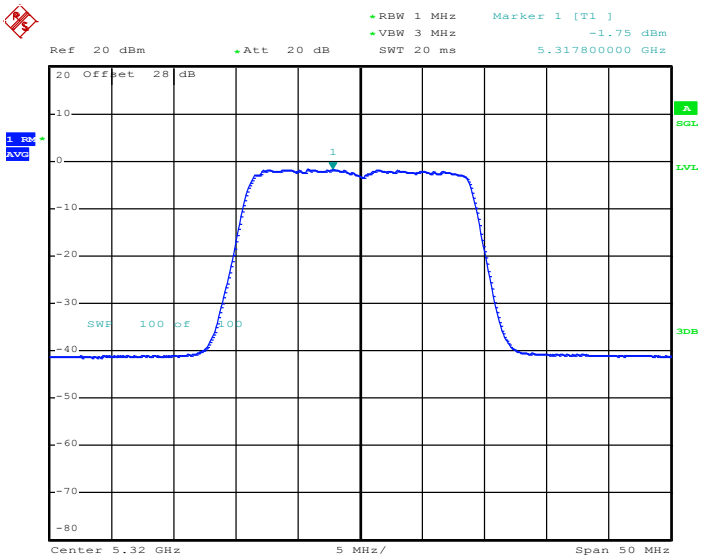
Date: 19.APR.2013 19:55:11

PSD Plot on 802.11n HT20 Channel 60



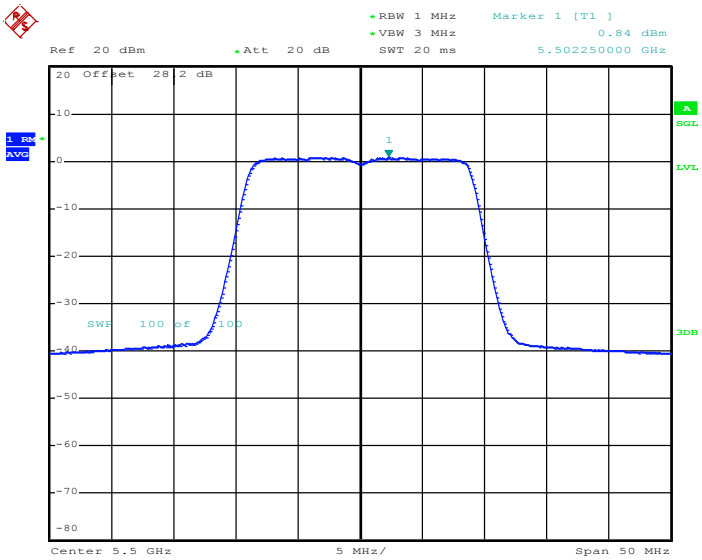
Date: 19.APR.2013 19:46:00

PSD Plot on 802.11n HT20 Channel 64



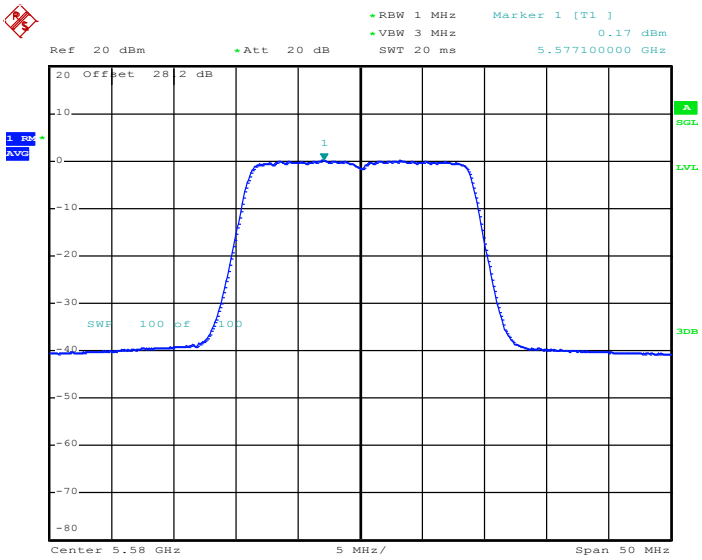
Date: 19.APR.2013 19:38:58

PSD Plot on 802.11n HT20 Channel 100



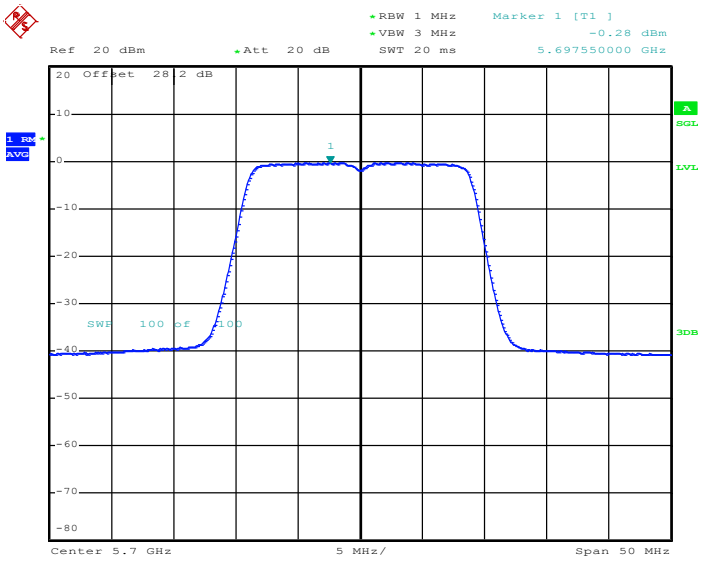
Date: 12.APR.2013 20:21:19

PSD Plot on 802.11n HT20 Channel 116



Date: 11.APR.2013 23:47:22

PSD Plot on 802.11n HT20 Channel 140



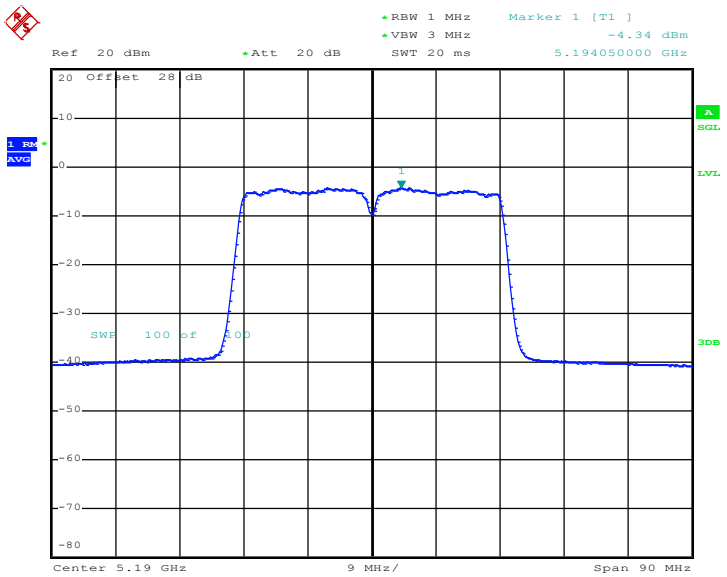
Date: 11.APR.2013 23:27:11

Test Mode :	802.11n HT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	86.72%	Duty Factor :	0.62dB

Band	Channel	Frequency (MHz)	802.11n HT40 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	38	5190	-4.34	-3.72	4	Pass
	46	5230	-4.71	-4.09	4	Pass
NII Band 2	54	5270	-5.09	-4.47	11	Pass
	62	5310	-4.81	-4.19	11	Pass
NII Band 3	102	5510	-2.97	-2.35	11	Pass
	110	5550	-3.17	-2.55	11	Pass
	134	5670	-3.59	-2.97	11	Pass

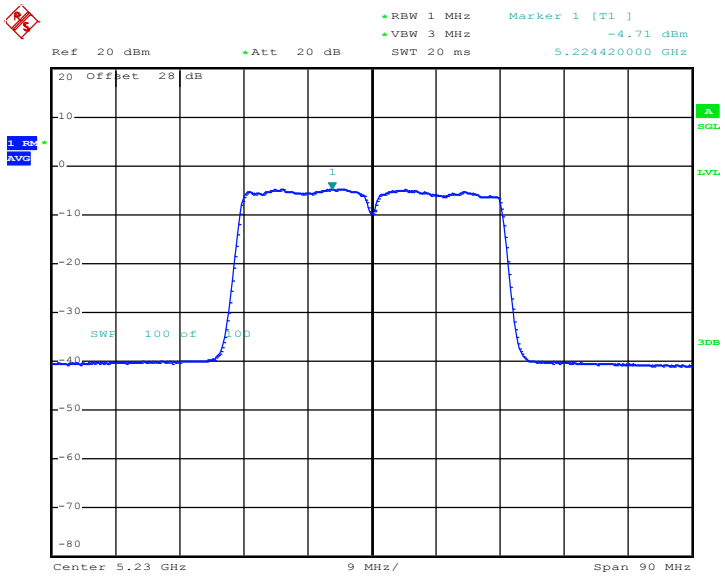
Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11n HT40 Channel 38



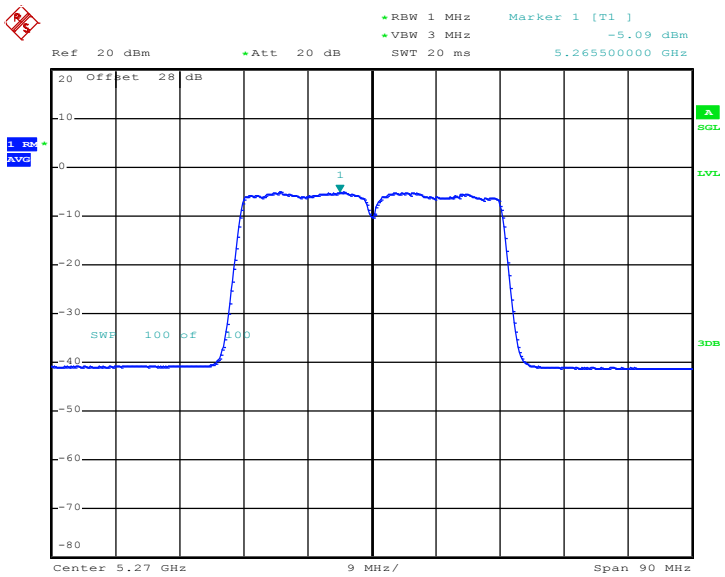
Date: 12.APR.2013 00:35:43

PSD Plot on 802.11n HT40 Channel 46



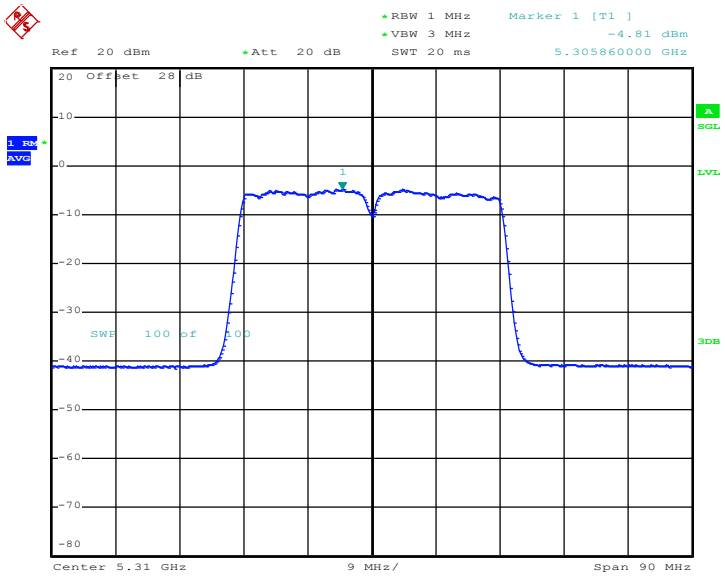
Date: 12.APR.2013 00:38:39

PSD Plot on 802.11n HT40 Channel 54



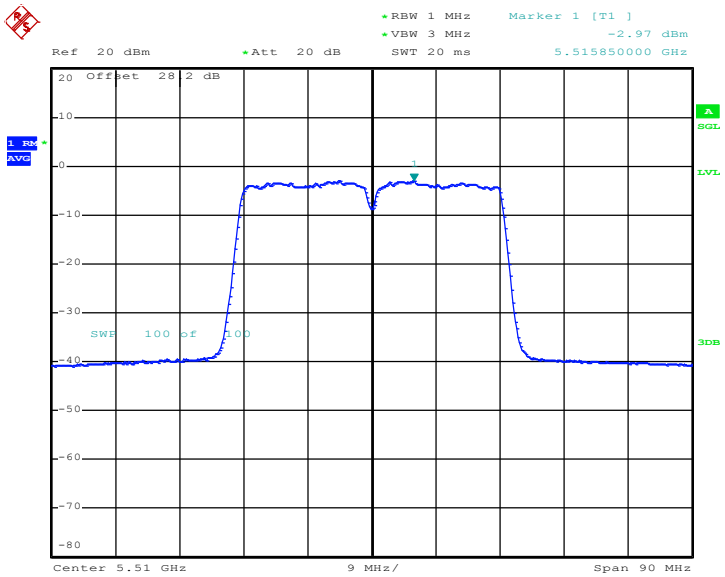
Date: 19.APR.2013 21:06:42

PSD Plot on 802.11n HT40 Channel 62



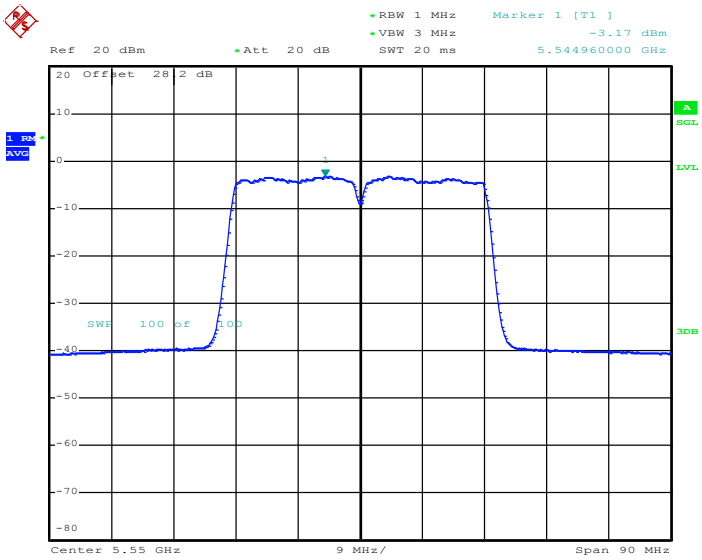
Date: 19.APR.2013 21:12:21

PSD Plot on 802.11n HT40 Channel 102



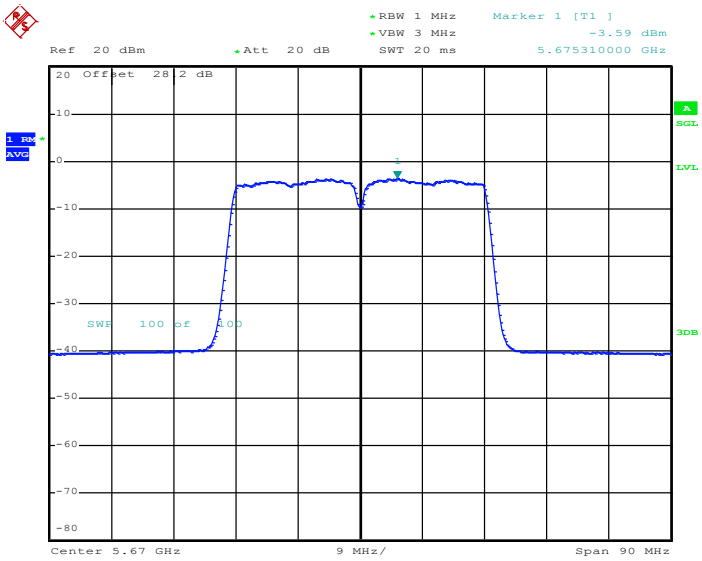
Date: 12.APR.2013 00:48:21

PSD Plot on 802.11n HT40 Channel 110



Date: 12.APR.2013 00:53:05

PSD Plot on 802.11n HT40 Channel 134



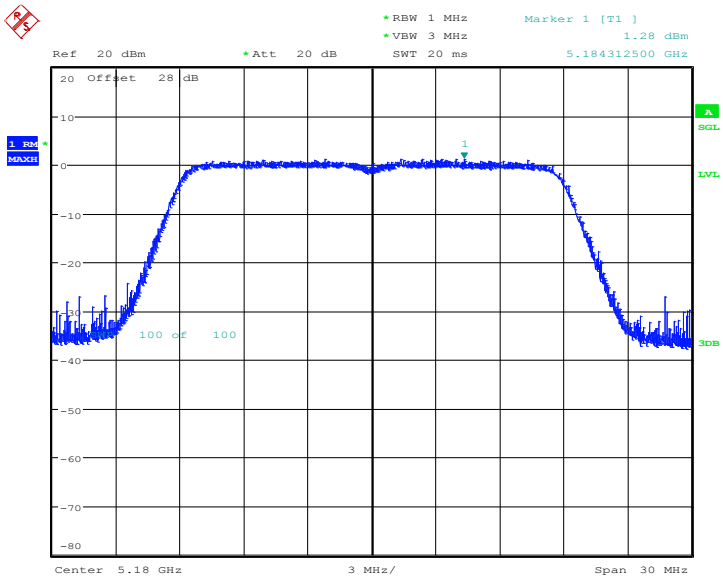
Date: 12.APR.2013 00:57:24

Test Mode :	802.11ac VHT20	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle:	93.10%	Duty Factor:	0.31dB

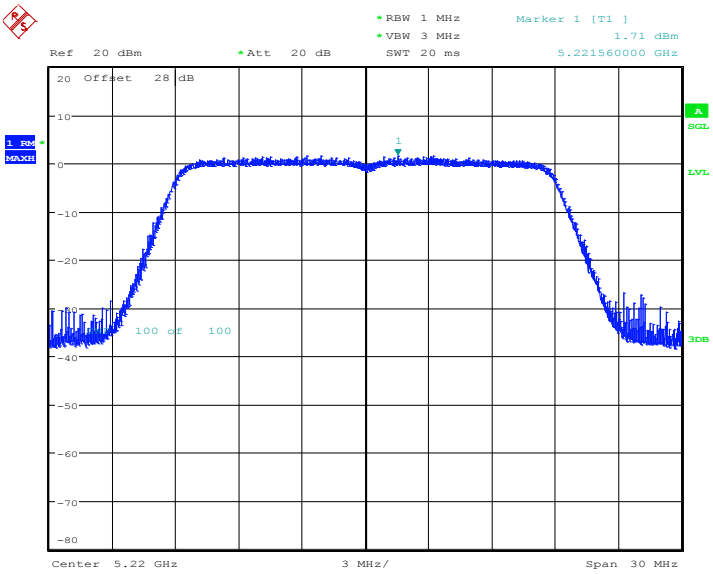
Band	Channel	Frequency (MHz)	802.11ac VHT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	36	5180	1.28	1.59	4	Pass
	44	5220	1.71	2.02	4	Pass
	48	5240	1.42	1.73	4	Pass
NII Band 2	52	5260	0.52	0.83	11	Pass
	60	5300	0.37	0.68	11	Pass
	64	5320	0.26	0.57	11	Pass
NII Band 3	100	5500	2.36	2.67	11	Pass
	116	5580	2.35	2.66	11	Pass
	140	5700	2.38	2.69	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11ac VHT20 Channel 36

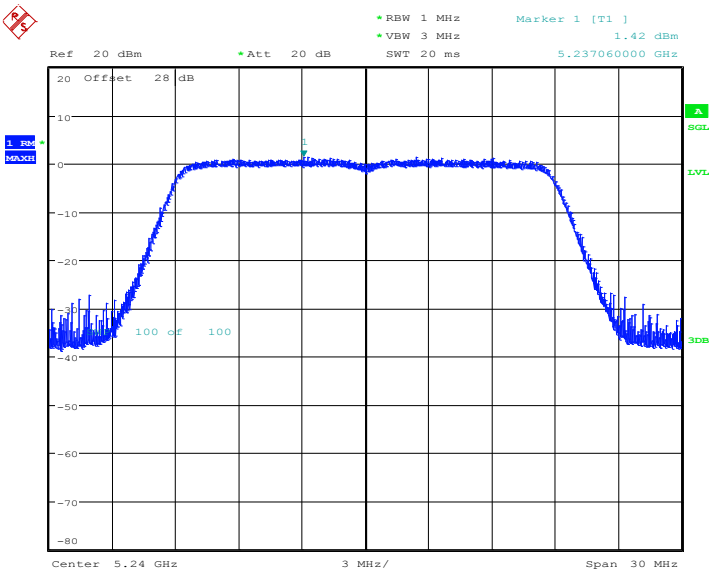


PSD Plot on 802.11ac VHT20 Channel 44



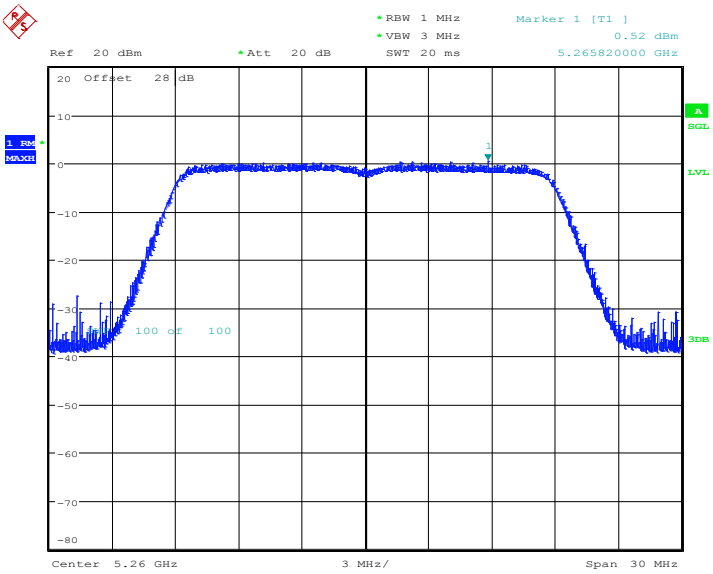
Date: 23.APR.2013 20:13:54

PSD Plot on 802.11ac VHT20 Channel 48



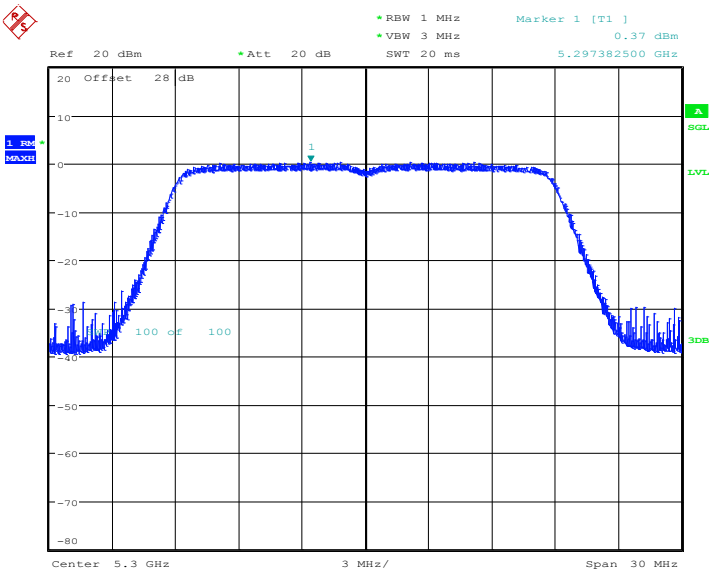
Date: 23.APR.2013 20:17:39

PSD Plot on 802.11ac VHT20 Channel 52



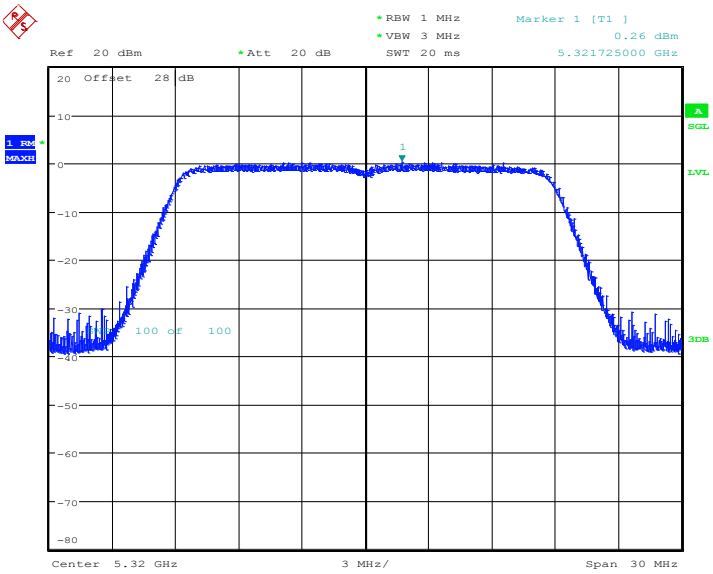
Date: 23.APR.2013 20:19:22

PSD Plot on 802.11ac VHT20 Channel 60



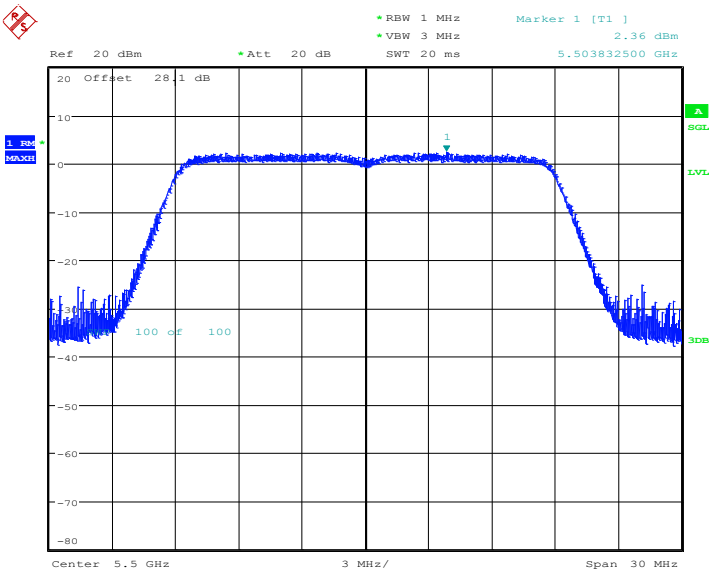
Date: 23.APR.2013 20:20:47

PSD Plot on 802.11ac VHT20 Channel 64



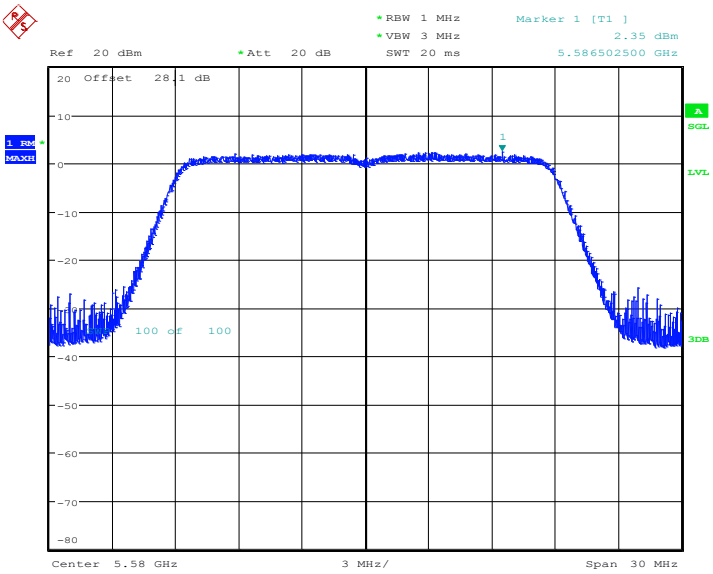
Date: 23.APR.2013 20:22:15

PSD Plot on 802.11ac VHT20 Channel 100



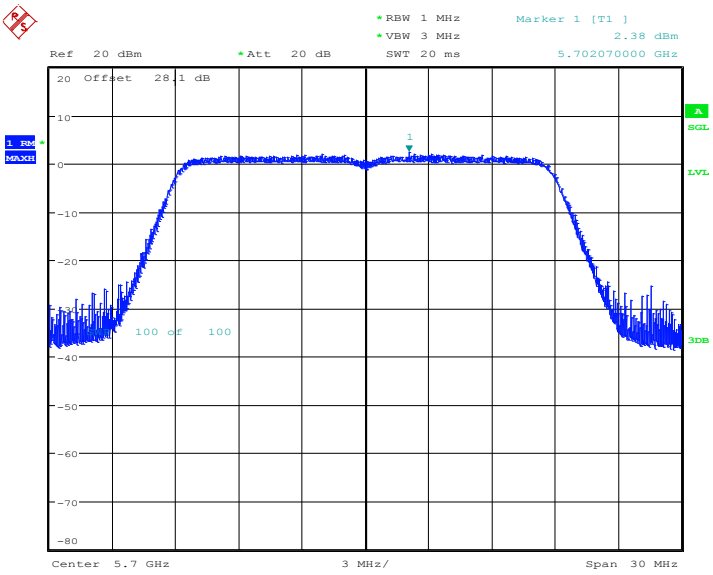
Date: 23.APR.2013 20:24:11

PSD Plot on 802.11ac VHT20 Channel 116



Date: 23.APR.2013 20:25:54

PSD Plot on 802.11ac VHT20 Channel 140



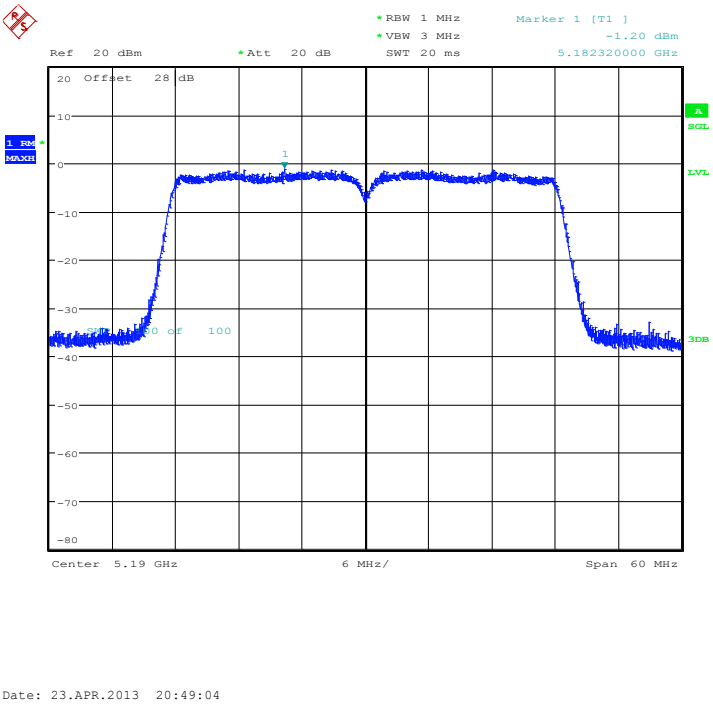
Date: 23.APR.2013 20:27:26

Test Mode :	802.11ac VHT40	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	86.82%	Duty Factor :	0.61dB

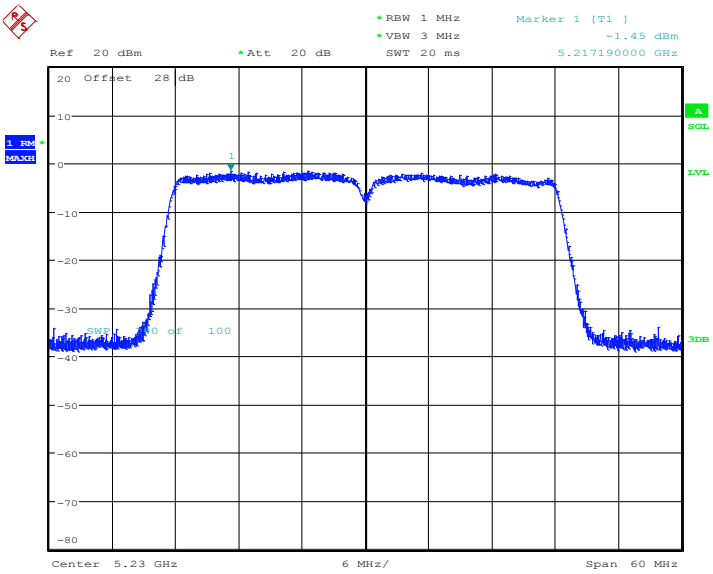
Band	Channel	Frequency (MHz)	802.11n HT20 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	38	5190	-1.20	-0.59	4	Pass
	46	5230	-1.45	-0.84	4	Pass
NII Band 2	54	5270	-2.95	-2.34	11	Pass
	62	5310	-2.81	-2.20	11	Pass
NII Band 3	102	5510	-1.04	-0.43	11	Pass
	110	5550	-0.48	0.13	11	Pass
	134	5670	-0.82	-0.21	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11ac VHT40 channel 38

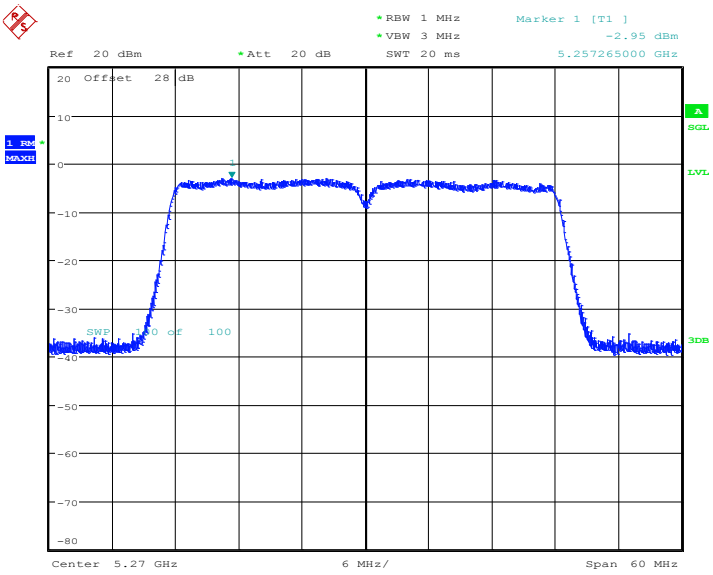


PSD Plot on 802.11ac VHT40 Channel 46



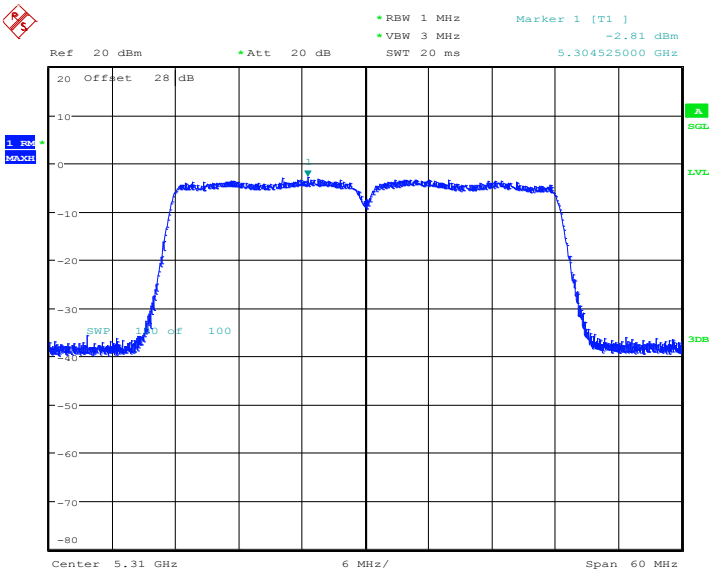
Date: 23.APR.2013 20:50:30

PSD Plot on 802.11ac VHT40 Channel 54



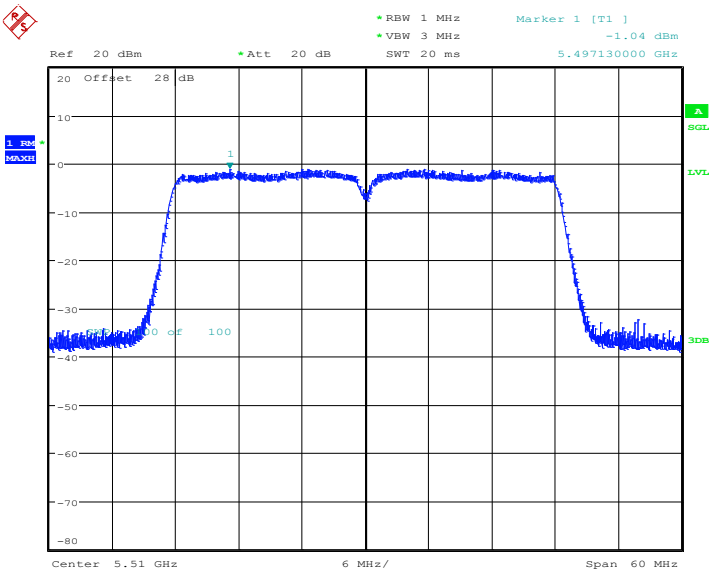
Date: 23.APR.2013 20:52:09

PSD Plot on 802.11ac VHT40 Channel 62



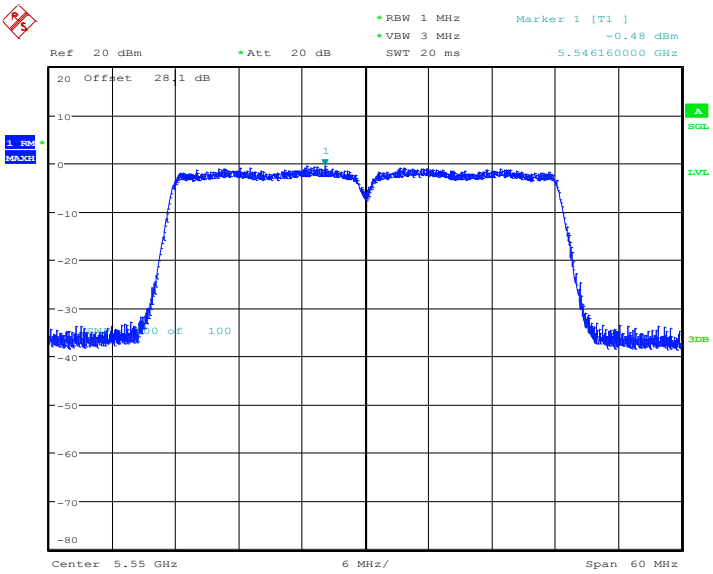
Date: 23.APR.2013 20:53:47

PSD Plot on 802.11ac VHT40 Channel 102



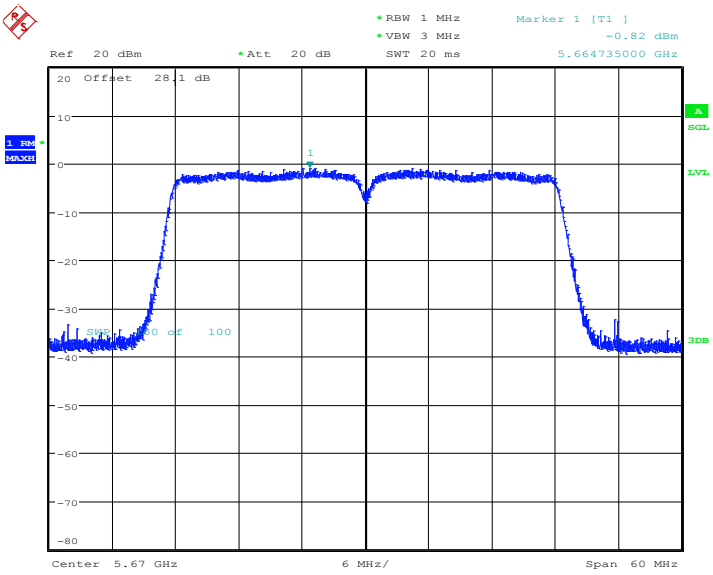
Date: 23.APR.2013 20:55:39

PSD Plot on 802.11ac VHT40 Channel 110



Date: 23.APR.2013 21:17:18

PSD Plot on 802.11ac VHT40 Channel 134



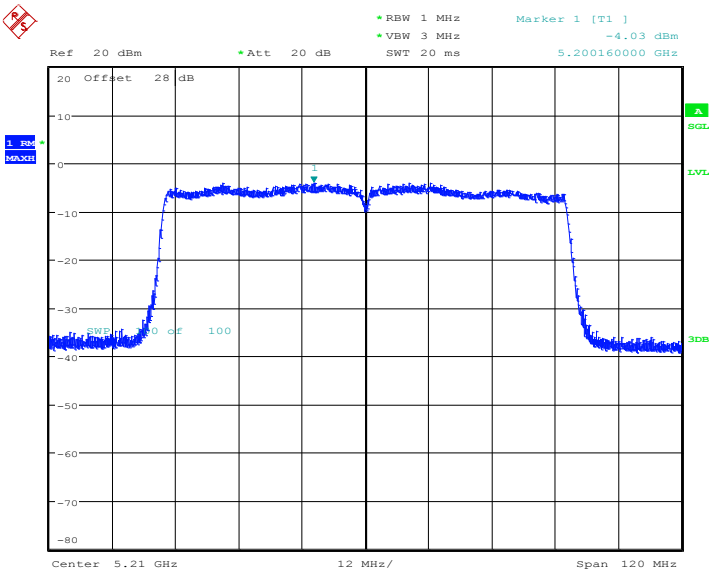
Date: 23.APR.2013 21:01:43

Test Mode :	802.11ac VHT80	Temperature :	24~26℃
Test Engineer :	Reece Lee	Relative Humidity :	45~49%
Duty Cycle :	77.06%	Duty Factor :	1.13dB

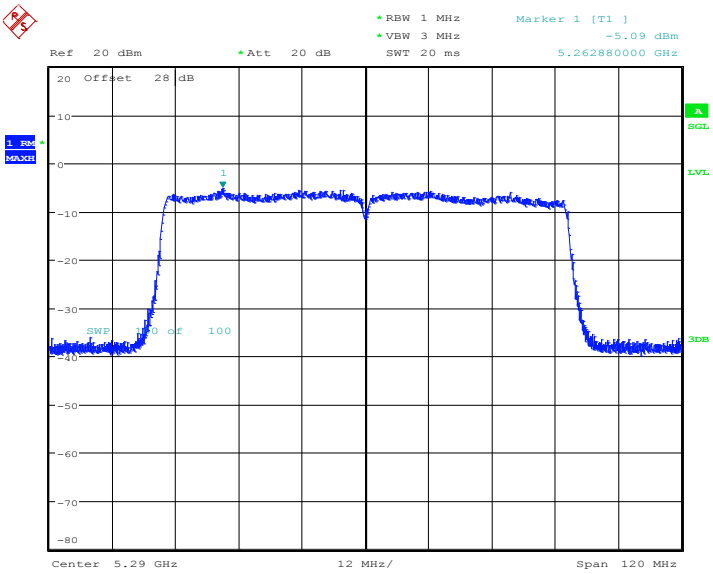
Band	Channel	Frequency (MHz)	802.11ac VHT80 PSD (dBm)		Max. Limits (dBm)	Pass/Fail
			Measured	Final		
NII Band 1	42	5210	-4.03	-2.90	4	Pass
NII Band 2	58	5290	-5.09	-3.96	11	Pass
NII Band 3	106	5530	-3.32	-2.19	11	Pass

Note: Result of Final PSD equals to Measured PSD adds the duty factor.

PSD Plot on 802.11ac VHT80 Channel 42

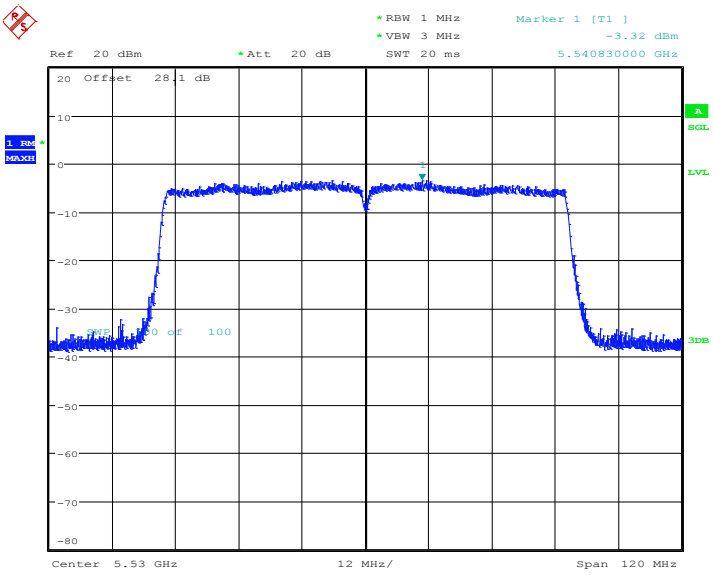


PSD Plot on 802.11ac VHT80 Channel 58



Date: 23.APR.2013 21:21:31

PSD Plot on 802.11ac VHT80 Channel 106



Date: 23.APR.2013 21:26:55