FCC Test Report

Product Name	WiFi AP
Model No	FM1200V-HW
FCC ID.	R5S-FV

Applicant	Fluidmesh Networks, LLC.
Address	1359 Barlcay Blvd.,Buffalo Grove, IL 60089 USA

Date of Receipt	Dec. 27, 2012
Issue Date	Apr. 22, 2013
Report No.	131029R-RFUSP28V01
Report Version	V1.0

Test Report Certification

Issue Date: Apr. 22, 2013
Report No.: 131029R-RFUSP28V01

Accredited by NIST (NVLAP)
NVLAP Lab Code: 200533-0

Product Name	WiFi AP
Applicant	Fluidmesh Networks, LLC.
Address	1359 Barlcay Blvd.,Buffalo Grove, IL 60089 USA
Manufacturer	Fluidmesh Networks, LLC.
Model No.	FM1200V-HW
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Fluidmesh
Applicable Standard	FCC CFR Title 47 Part 15 Subpart C: 2012 ANSI C63.4: 2003, ANSI C63.10: 2009
Test Result	Complied

The test results relate only to the samples tested.
The test report shall not be reproduced except in full without the written approval of QuieTek Corporation.
This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

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(Manager / Vincent Lin)

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1. GENERAL INFORMATION

1.1. EUT Description

Product Name	WiFi AP
Trade Name	Fluidmesh
Model No.	FM1200V-HW
FCC ID.	R5S-FV
Frequency Range	802.11n-20MHz:5745-5825MHz ,802.11n-40MHz:5755-5795MHz
Number of Channels	802.11n-20MHz: 5, n-40MHz: 2
Data Speed	802.11n: up to 300Mbps
Channel separation	802.11n-20MHz: 20MHz, 802.11n-40MHz: 40MHz
Type of Modulation	802.11n: OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna Type	Cross-Polarized Antenna
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Power Adapter (1)	MFR: FLUIDMESH, M/N: GFP121DA-240050HB Input: AC 100-240V, 50-60Hz, 0.3A Output: DC 24V, 0.5A Power Cord: Non-Shielded, 0.6m
Power Adapter (2)	MFR: FLUIDMESH, M/N: GFP241DA-240100HB Input: AC 100-240V, 50-60Hz, 0.55A Output: DC 24V, 1A Power Cord: Non-Shielded, 0.6m

Antenna List

No.	Manufacturer	Part No.	Antenna Type	Peak Gain
1	LYNwave	ALO120-093150	Cross-Polarized Antenna	11.98dBi For 5.725~5.850GHz

Note: The antenna of EUT is conform to FCC 15.203

802.11n-20MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 149:	5745 MHz	Channel 153:	5765 MHz	Channel 157:	5785 MHz	Channel 161:	5805 MHz
Channel 165:	5825 MHz						

802.11n-40MHz (5G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency
Channel 151:	5755 MHz	Channel 159:	5795 MHz

Note:

1. This device is a WiFi AP with a built-in 5GHz WLAN transceiver.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test.
3. At result of pretests, module supports dual-channel transmission, only the worst case is shown in the report. (802.11n is chain A+ chain B)
4. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11n(20M-BW) is 14.4Mbps and 、802.11n(40M-BW) is 30Mbps).
5. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.
6. These tests are conducted on a sample for the purpose of demonstrating compliance of 802.11a/n transmitter with Part 15 Subpart C Paragraph 15.247 of spread spectrum devices.

Test Mode	Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band)
	Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band)

1.2. Operational Description

The EUT is an WiFi AP with a built-in 5GHz WLAN transceiver.

The device provided of eight kinds of transmitting speed 14.4,28.9,43.3,57.8,86.7,115.6,130 and 144.4Mbps in 802.11n(20BW) mode and 30,60,90,120,180,240,270 and 300Mbps(40BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n), the IEEE 802.11n is Multiple In, Multiple Out" (MIMO) technology.

The device adapts direct sequence spread spectrum modulation. The antenna provides diversity function to improve the receiving function and the antennas to support 2(Transmit) × 2(Receive) MIMO technology.

This WiFi AP, compliant with IEEE 802.11n, is a high-efficiency Wireless LAN adapter. It allows your computer to connect to a wireless network and to share resources, such as files or printers without being bound to the network wires. Orthogonal Frequency Division Multiplexing (OFDM) radio transmission, the WiFi AP Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11n network.

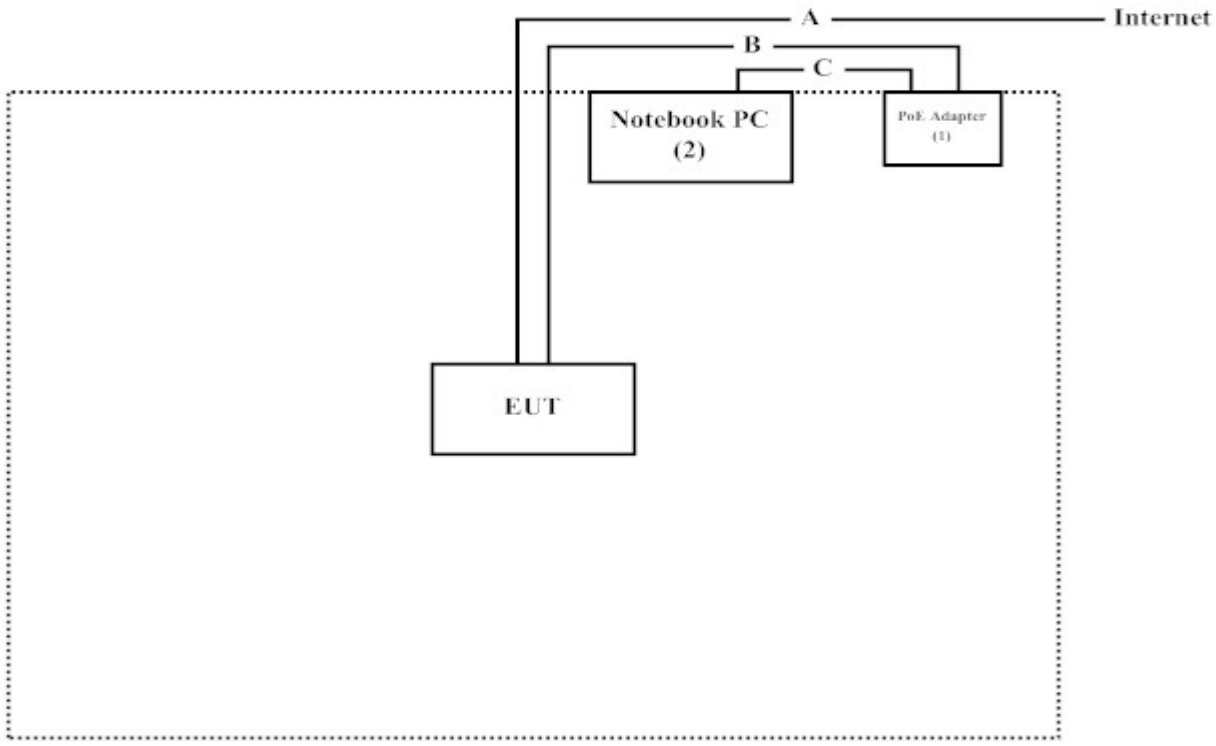
1.3. Tested System Details

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
(1)	PoE Adapter	FLUIDMESH	GFP121DA-240050HB	N/A	Non-Shielded, 0.6m
(2)	Notebook PC	DELL	PPT	N/A	Non-Shielded, 0.8m

Signal Cable Type		Signal cable Description
A	LAN Cable	Non-Shielded, 3.0m
B	LAN Cable	Shielded, 3.0m
C	LAN Cable	Non-Shielded, 1.7m

1.4. Configuration of Tested System



1.5. EUT Exercise Software

(1) Setup the EUT as shown in section 1.4.

(2) Execute Test program (ART.exe v0.9) on the Notebook

(3) Configure the test mode, the test channel to start the continuous transmit

(4) Verify that the EUT works properly.

1.6. Test Facility

Ambient conditions in the laboratory:

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	20-35
Humidity (%RH)	25-75	50-65
Barometric pressure (mbar)	860-1060	950-1000

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://www.quietek.com/tw/ctg/cts/accreditations.htm
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/

Site Description: File on
Federal Communications Commission
FCC Engineering Laboratory
7435 Oakland Mills Road
Columbia, MD 21046
Registration Number: 92195

Accreditation on NVLAP
NVLAP Lab Code: 200533-0

Site Name: Quietek Corporation
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Taiwan, R.O.C.
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E-Mail : service@quietek.com

FCC Accreditation Number: TW1014

2. Conducted Emission

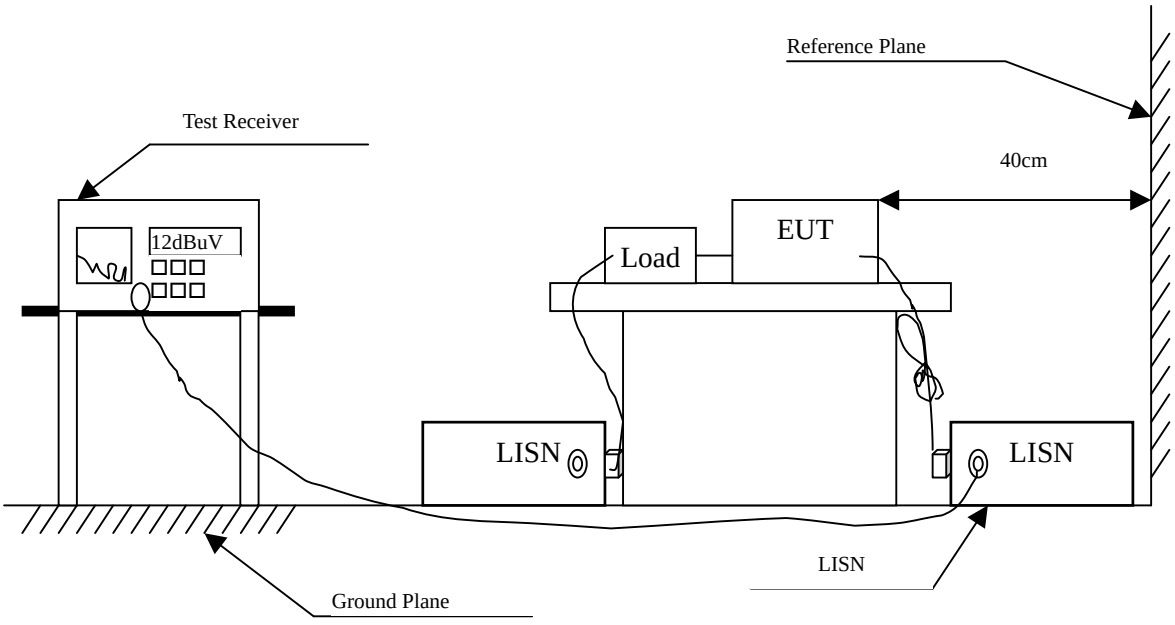
2.1. Test Equipment

	Equipment	Manufacturer	Model No. / Serial No.	Last Cal.	Remark
X	Test Receiver	R & S	ESCS 30 / 825442/018	Sep., 2012	
X	Artificial Mains Network	R & S	ENV4200 / 848411/10	Feb., 2013	Peripherals
X	LISN	R & S	ESH3-Z5 / 825562/002	Feb., 2013	EUT
	DC LISN	Schwarzbeck	8226 / 176	Mar, 2013	EUT
X	Pulse Limiter	R & S	ESH3-Z2 / 357.8810.52	Feb., 2013	
	No.1 Shielded Room				

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

2.2. Test Setup



2.3. Limits

FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit		
Frequency MHz	Limits	
	QP	AVG
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

2.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.10: 2009 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15MHz to 30MHz using a receiver bandwidth of 9kHz.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : WiFi AP
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz), (Adapter:GFP121DA-240050HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.173	9.830	34.850	44.680	-20.663	65.343
0.244	9.830	32.020	41.850	-21.464	63.314
0.369	9.830	34.700	44.530	-15.213	59.743
0.599	9.830	28.570	38.400	-17.600	56.000
0.896	9.830	26.640	36.470	-19.530	56.000
5.369	9.883	21.890	31.773	-28.227	60.000
Average					
0.173	9.830	30.120	39.950	-15.393	55.343
0.244	9.830	13.650	23.480	-29.834	53.314
0.369	9.830	18.580	28.410	-21.333	49.743
0.599	9.830	12.310	22.140	-23.860	46.000
0.896	9.830	13.210	23.040	-22.960	46.000
5.369	9.883	15.060	24.943	-25.057	50.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " " means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Product : WiFi AP
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz),
(Adapter:GFP121DA-240050HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.185	9.832	37.300	47.132	-17.868	65.000
0.248	9.830	36.150	45.980	-17.220	63.200
0.349	9.840	44.940	54.780	-5.534	60.314
0.638	9.840	39.880	49.720	-6.280	56.000
1.127	9.850	36.420	46.270	-9.730	56.000
2.400	9.860	34.460	44.320	-11.680	56.000
Average					
0.185	9.832	31.380	41.212	-13.788	55.000
0.248	9.830	29.350	39.180	-14.020	53.200
0.349	9.840	32.770	42.610	-7.704	50.314
0.638	9.840	30.370	40.210	-5.790	46.000
1.127	9.850	26.660	36.510	-9.490	46.000
2.400	9.860	27.080	36.940	-9.060	46.000

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. “ “ means the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

2.7. Result of Conducted Emission

Product : WiFi AP
Test Item : Conducted Emission Test
Power Line : Line 1
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz),
(Adapter:GFP241DA-240100HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 1					
Quasi-Peak					
0.181	9.790	30.210	40.000	-25.114	65.114
0.263	9.790	26.580	36.370	-26.401	62.771
0.353	9.790	33.520	43.310	-16.890	60.200
0.463	9.790	25.090	34.880	-22.177	57.057
0.662	9.790	23.290	33.080	-22.920	56.000
1.240	9.790	22.160	31.950	-24.050	56.000
Average					
0.181	9.790	19.980	29.770	-25.344	55.114
0.263	9.790	19.510	29.300	-23.471	52.771
0.353	9.790	27.090	36.880	-13.320	50.200
0.463	9.790	17.210	27.000	-20.057	47.057
0.662	9.790	15.950	25.740	-20.260	46.000
1.240	9.790	13.530	23.320	-22.680	46.000

Note:

4. All Reading Levels are Quasi-Peak and average value.
5. “ “ means the worst emission level.
6. Measurement Level = Reading Level + Correct Factor

Product : WiFi AP
Test Item : Conducted Emission Test
Power Line : Line 2
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz),
(Adapter:GFP241DA-240100HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV	dB	dBuV
Line 2					
Quasi-Peak					
0.185	9.770	28.890	38.660	-26.340	65.000
0.279	9.770	28.430	38.200	-24.114	62.314
0.349	9.770	31.630	41.400	-18.914	60.314
0.666	9.770	29.370	39.140	-16.860	56.000
1.259	9.780	21.400	31.180	-24.820	56.000
8.908	9.962	16.020	25.982	-34.018	60.000
Average					
0.185	9.770	16.450	26.220	-28.780	55.000
0.279	9.770	22.380	32.150	-20.164	52.314
0.349	9.770	25.400	35.170	-15.144	50.314
0.666	9.770	21.260	31.030	-14.970	46.000
1.259	9.780	13.530	23.310	-22.690	46.000
8.908	9.962	8.840	18.802	-31.198	50.000

Note:

4. All Reading Levels are Quasi-Peak and average value.
5. “ “ means the worst emission level.
6. Measurement Level = Reading Level + Correct Factor

3. Peak Power Output

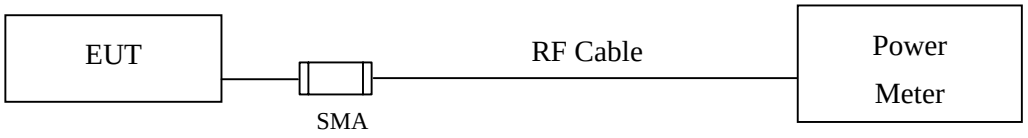
3.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2012
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2012

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

3.2. Test Setup



3.3. Limits

The maximum peak power shall be less 1 Watt.

3.4. Test Procedure

The EUT was tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

3.5. Uncertainty

± 1.27 dB

3.6. Test Result of Peak Power Output

Product : WiFi AP
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band)

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4		
		Measurement Level (dBm)										
149	5745	19.46	--	--	--	--	--	--	--	26.81	<30dBm	Pass
157	5785	18.93	18.9	18.87	18.83	18.79	18.73	18.68	18.61	26.74	<30dBm	Pass
165	5825	18.13	--	--	--	--	--	--	--	26.51	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		14.4	28.9	43.3	57.8	86.7	115.6	130	144.4	14.4		
		Measurement Level (dBm)										
149	5745	18.27	--	--	--	--	--	--	--	26.77	<30dBm	Pass
157	5785	18.25	18.21	18.18	18.15	18.09	18.04	18.02	17.99	26.56	<30dBm	Pass
165	5825	18.83	--	--	--	--	--	--	--	26.5	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745	7.2	26.81	26.77	29.80	<30dBm	Pass
157	5785	7.2	26.74	26.56	29.66	<30dBm	Pass
165	5825	7.2	26.51	26.50	29.52	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Product : WiFi AP
Test Item : Peak Power Output Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band)

Chain A

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		30	60	90	120	180	240	270	300	30		
		Measurement Level (dBm)										
151	5755	19.97	--	--	--	--	--	--	--	26.79	<30dBm	Pass
159	5795	19.02	18.94	18.9	18.86	18.84	18.77	18.71	18.68	26.61	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

Chain B

Channel No	Frequency (MHz)	Average Power For different Data Rate (Mbps)								Peak Power	Required Limit	Result
		30	60	90	120	180	240	270	300	30		
		Measurement Level (dBm)										
151	5755	18.15	--	--	--	--	--	--	--	26.35	<30dBm	Pass
159	5795	18.75	18.71	18.67	18.62	18.58	18.52	18.47	18.33	26.36	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

CHAIN A+B

Channel	Frequency (MHz)	Data Rata (Mbps)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755	30	26.79	26.35	29.59	<30dBm	Pass
159	5795	30	26.61	26.36	29.50	<30dBm	Pass

Note: Peak Power Output Value =Reading value on power meter + cable loss

4. Radiated Emission

4.1. Test Equipment

The following test equipment are used during the radiated emission test:

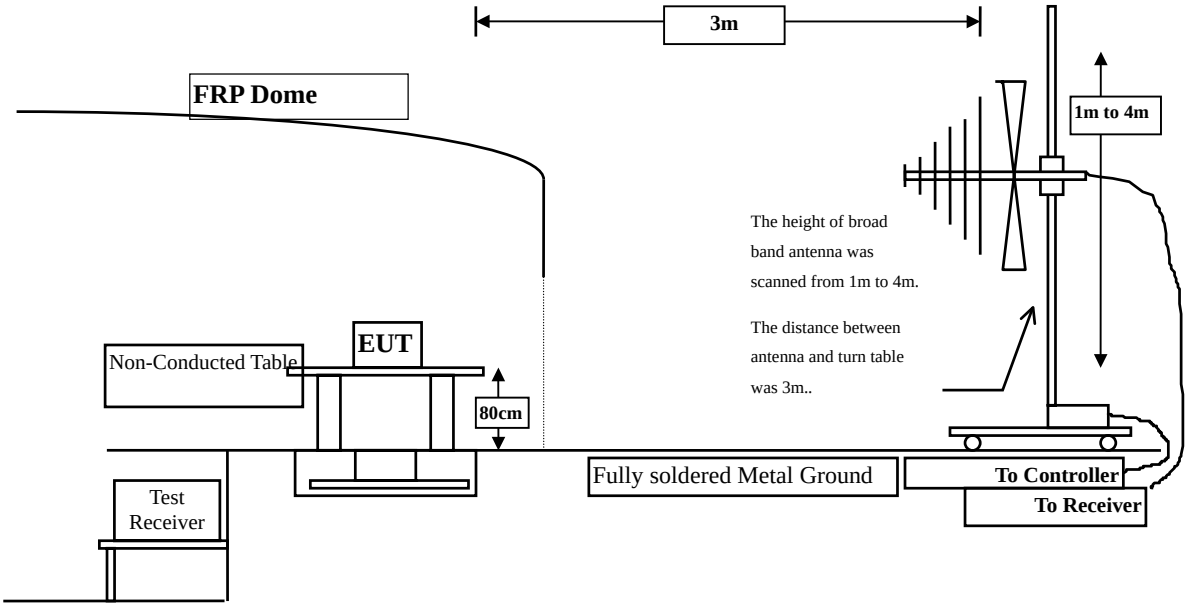
Test Site	Equipment		Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3	X	Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
	X	Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
	X	Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2013
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
	X	Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

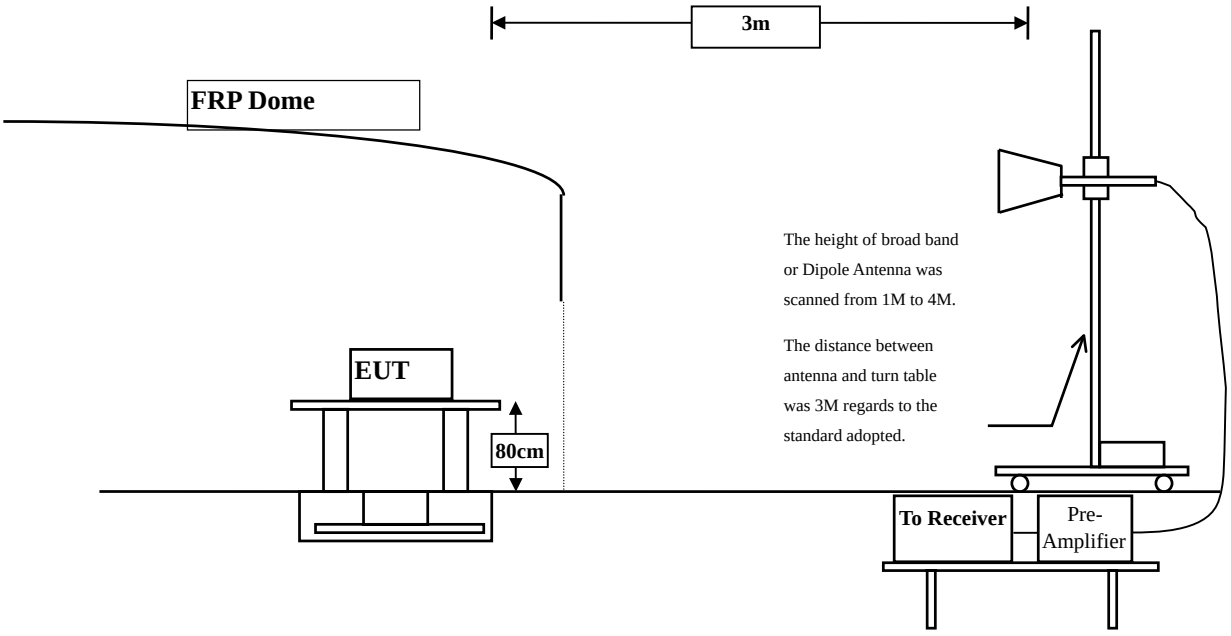
2. The test instruments marked with “X” are used to measure the final test results.

4.2. Test Setup

Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



4.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209(a) Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks: E field strength (dBuV/m) = 20 log E field strength (uV/m)

4.4. Test Procedure

The EUT was setup according to ANSI C63.10, 2009 and tested according to DTS test procedure of ANSI C63.10, 2009 for compliance to FCC 47CFR 15.247 requirements.

The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna is scanned between 1 meter and 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10, 2009 on radiated measurement.

The resolution bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

Radiated emission measurements below 1GHz are made using broadband Bilog antenna and above 1GHz are made using Horn Antennas.

The measurement is divided into the Preliminary Measurement and the Final Measurement.

The suspected frequencies are searched for in Preliminary Measurement with the measurement antenna kept pointed at the source of the emission both in azimuth and elevation, with the polarization of the antenna oriented for maximum response. The antenna is pointed at an angle towards the source of the emission, and the EUT is rotated in both height and polarization to maximize the measured emission. The emission is kept within the illumination area of the 3 dB bandwidth of the antenna.

The worst radiated emission is measured in the Open Area Test Site on the Final Measurement.

The measurement frequency range form 30MHz - 10th Harmonic of fundamental was investigated.

4.5. Uncertainty

± 3.9 dB above 1GHz

± 3.8 dB below 1GHz

4.6. Test Result of Radiated Emission

Product : WiFi AP
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5745MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11490.000	17.106	36.650	53.757	-20.243	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11490.000	18.034	35.860	53.895	-20.105	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5785 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11570.000	16.809	35.570	52.379	-21.621	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11570.000	17.698	35.800	53.498	-20.502	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5825 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11650.000	16.158	35.150	51.308	-22.692	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11650.000	17.274	34.840	52.115	-21.885	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11510.000	17.124	36.180	53.304	-20.696	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11510.000	18.081	35.690	53.771	-20.229	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : Harmonic Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5795 MHz)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
Peak Detector:					
11590.000	16.701	35.800	52.500	-21.500	74.000
Average Detector:					
--					
Vertical					
Peak Detector:					
11590.000	17.567	35.550	53.116	-20.884	74.000
Average Detector:					
--					

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5785 MHz),
(Adapter:GFP121DA-240050HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
249.220	-6.014	42.493	36.479	-9.521	46.000
313.240	-4.111	40.735	36.624	-9.376	46.000
499.480	0.048	34.917	34.965	-11.035	46.000
625.580	1.770	32.413	34.183	-11.817	46.000
800.180	5.141	28.835	33.976	-12.024	46.000
965.080	6.852	24.045	30.897	-23.103	54.000
Vertical					
256.980	-7.573	40.891	33.318	-12.682	46.000
398.600	-4.678	40.839	36.161	-9.839	46.000
532.460	-0.563	33.052	32.489	-13.511	46.000
666.320	-1.809	33.426	31.618	-14.382	46.000
825.400	3.430	31.025	34.455	-11.545	46.000
967.020	8.071	27.349	35.420	-18.580	54.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz),
(Adapter:GFP121DA-240050HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
249.220	-6.014	42.871	36.857	-9.143	46.000
313.240	-4.111	40.418	36.307	-9.693	46.000
499.480	0.048	35.366	35.414	-10.586	46.000
625.580	1.770	33.250	35.020	-10.980	46.000
800.180	5.141	28.681	33.822	-12.178	46.000
963.140	6.664	25.295	31.959	-22.041	54.000
Vertical					
105.660	-0.253	37.371	37.118	-6.382	43.500
256.980	-7.573	39.777	32.204	-13.796	46.000
367.560	-2.545	36.246	33.701	-12.299	46.000
532.460	-0.563	32.423	31.860	-14.140	46.000
800.180	2.801	29.993	32.794	-13.206	46.000
928.220	6.203	30.128	36.331	-9.669	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5785 MHz),
(Adapter:GFP241DA-240100HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
154.160	-8.002	42.585	34.583	-8.917	43.500
286.080	-5.619	44.747	39.128	-6.872	46.000
431.580	0.757	37.133	37.890	-8.110	46.000
610.060	3.657	35.550	39.207	-6.793	46.000
714.820	3.801	32.100	35.901	-10.099	46.000
965.080	7.222	26.700	33.922	-20.078	54.000
Vertical					
111.480	-3.439	39.289	35.851	-7.649	43.500
237.580	-6.537	43.191	36.654	-9.346	46.000
330.700	-2.244	42.557	40.314	-5.686	46.000
495.600	-1.237	38.039	36.802	-9.198	46.000
666.320	-0.951	34.458	33.507	-12.493	46.000
809.880	3.026	25.668	28.694	-17.306	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

Product : WiFi AP
Test Item : General Radiated Emission Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz),
(Adapter:GFP241DA-240100HB)

Frequency	Correct Factor	Reading Level	Measurement Level	Margin	Limit
MHz	dB	dBuV	dBuV/m	dB	dBuV/m
Horizontal					
156.100	-8.497	44.357	35.860	-7.640	43.500
291.900	-5.202	45.241	40.039	-5.961	46.000
460.680	4.030	36.074	40.104	-5.896	46.000
666.320	1.879	35.969	37.848	-8.152	46.000
809.880	6.266	27.922	34.188	-11.812	46.000
965.080	7.222	25.821	33.043	-20.957	54.000
Vertical					
76.560	-6.510	41.055	34.545	-5.455	40.000
266.680	-5.600	44.213	38.613	-7.387	46.000
396.660	-2.039	37.381	35.342	-10.658	46.000
505.300	0.056	35.039	35.095	-10.905	46.000
695.420	1.352	33.068	34.420	-11.580	46.000
941.800	3.460	32.995	36.455	-9.545	46.000

Note:

1. All Readings below 1GHz are Quasi-Peak, above 1GHz are performed with peak and/or average measurements as necessary.
2. Peak measurements: RBW = 1MHz, VBW = 3 MHz, Sweep: Auto.
3. Average measurements: RBW = 1MHz, VBW = 10 Hz, Sweep: Auto.
4. Measurement Level = Reading Level + Correct Factor.
5. Correct Factor = Antenna factor + Cable loss –Amplifier gain.
6. The average measurement was not performed when the peak measured data under the limit of average detection.
7. The emission levels of other frequencies are very lower than the limit and not show in test report.

5. RF antenna conducted test

5.1. Test Equipment

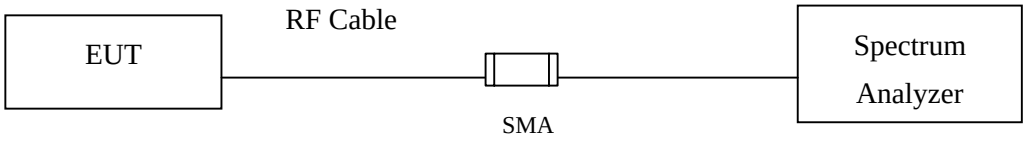
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note: 1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

2. The test instruments marked with "X" are used to measure the final test results.

5.2. Test Setup

RF antenna Conducted Measurement:



5.3. Limits

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

5.4. Test Procedure

The EUT was tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 100 kHz, Set VBW> RBW, scan up through 10th harmonic.

5.5. Uncertainty

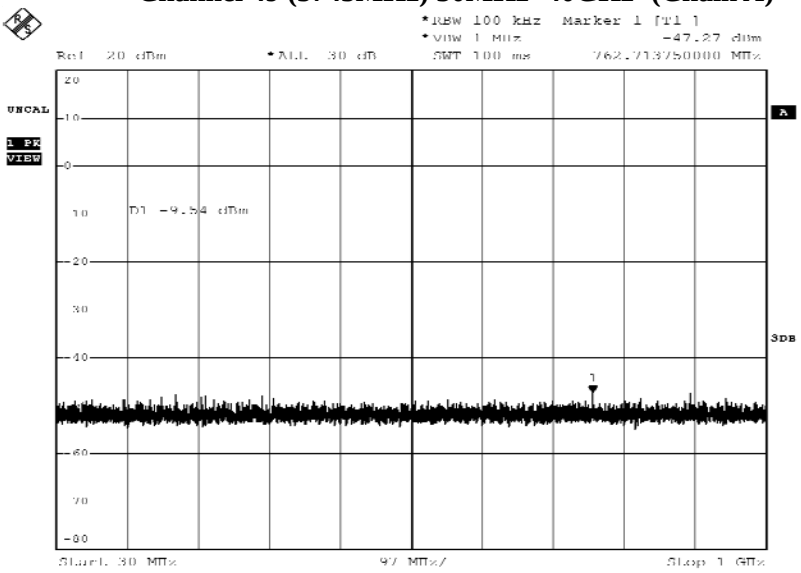
The measurement uncertainty

Conducted is defined as ± 1.27dB

5.6. Test Result of RF antenna conducted test

Product : WiFi AP
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band)

Channel 49 (5745MHz) 30MHz -40GHz- (Chain A)



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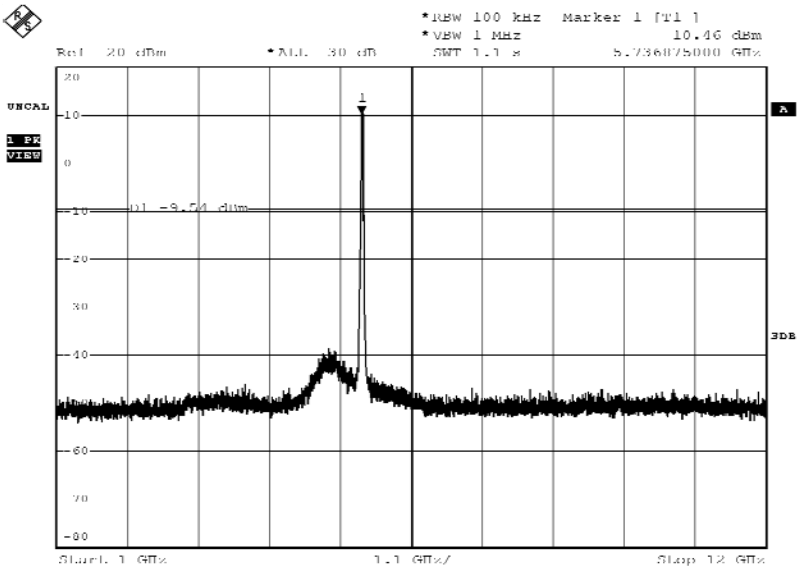

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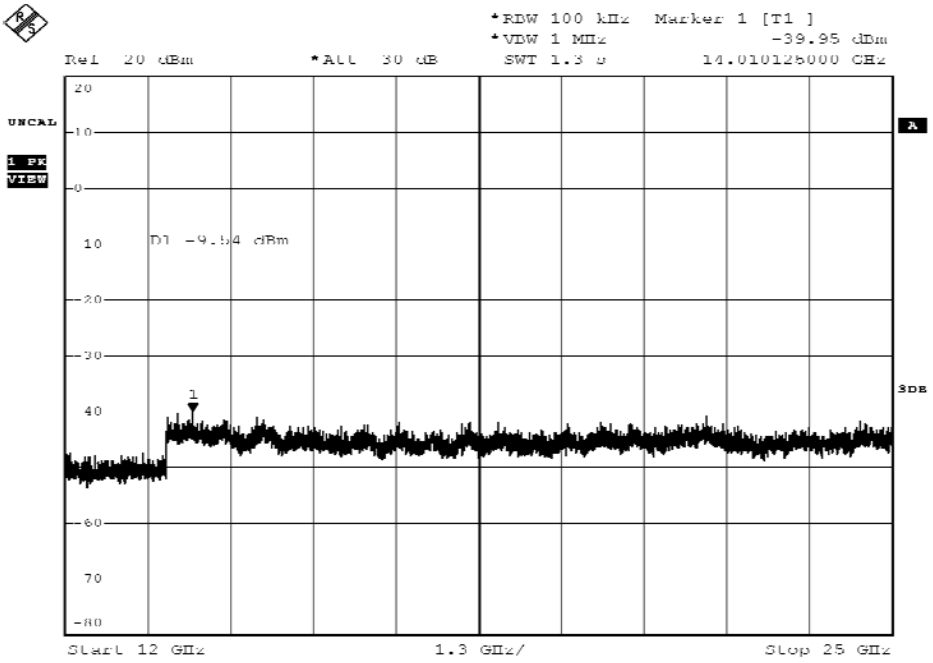

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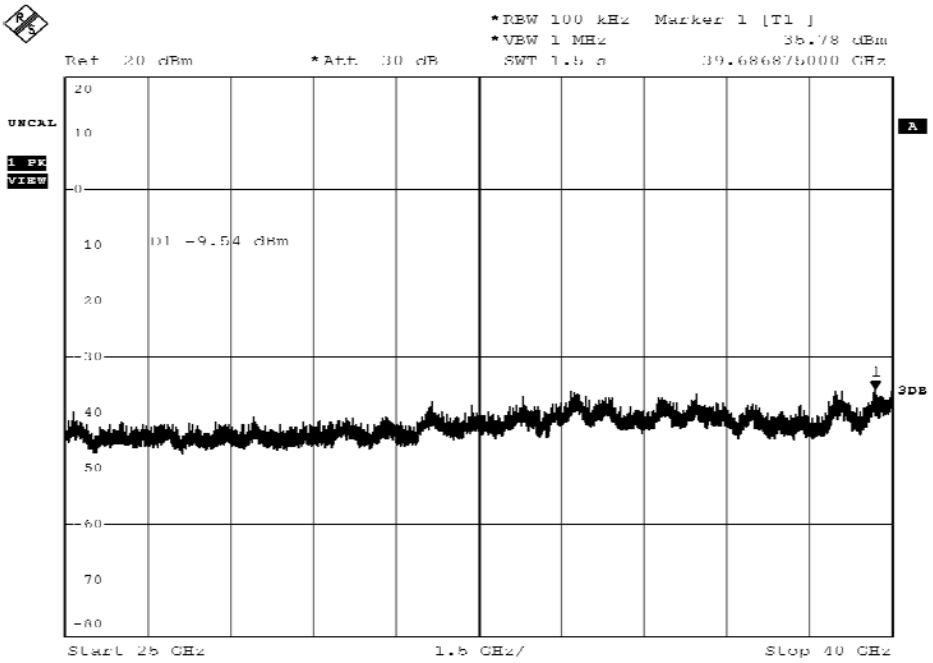

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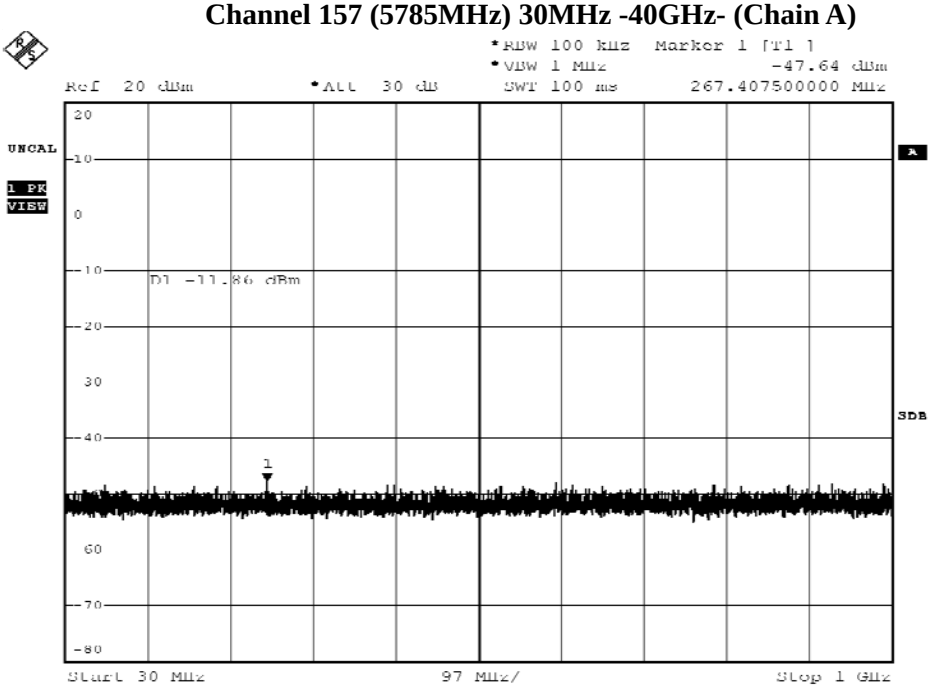
Channel 157 (5785MHz) 30MHz -40GHz- (Chain A)



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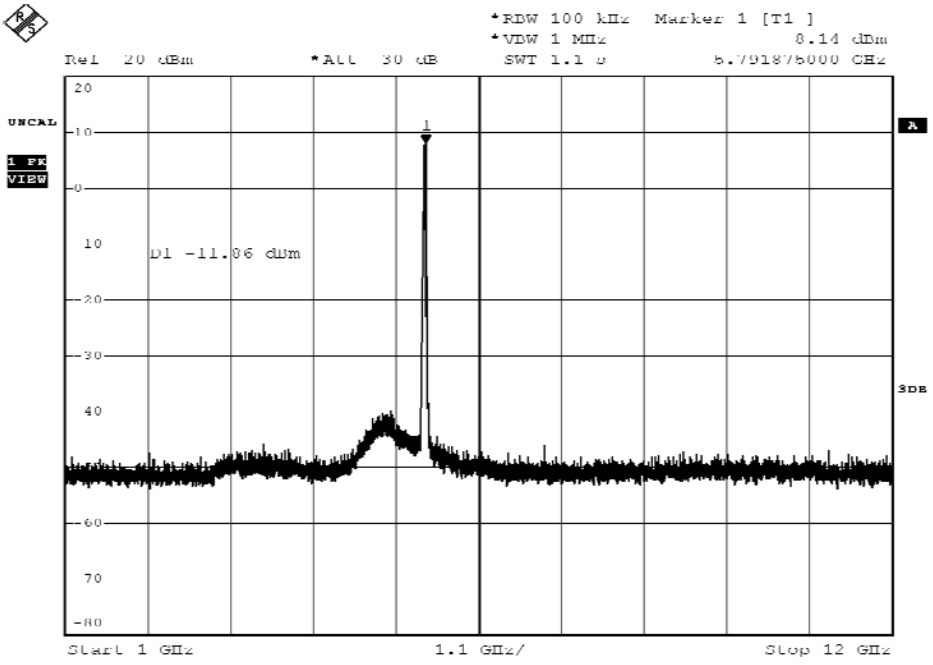

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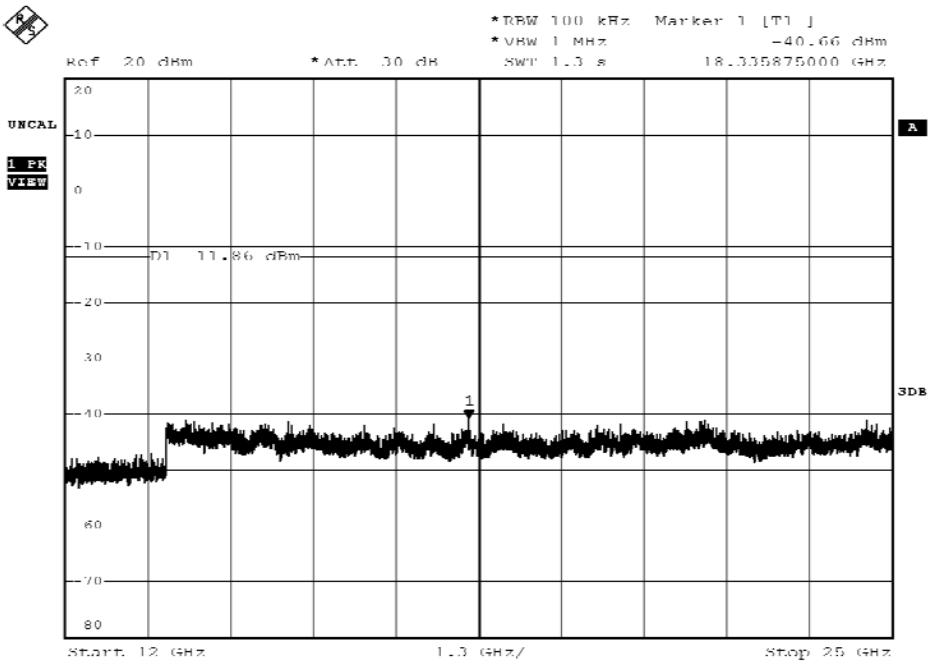

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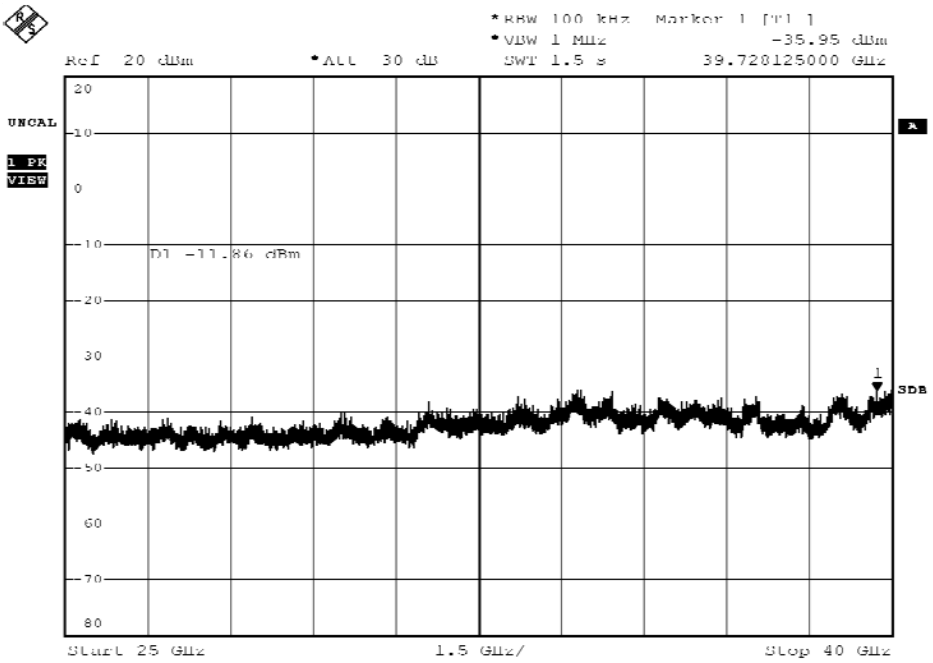

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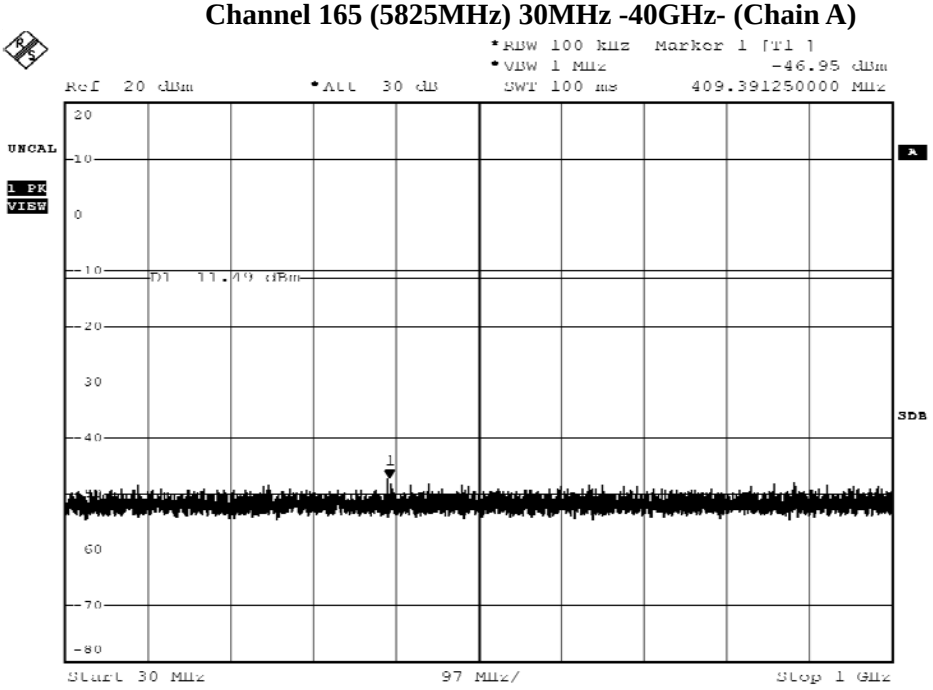
Channel 165 (5825MHz) 30MHz -40GHz- (Chain A)



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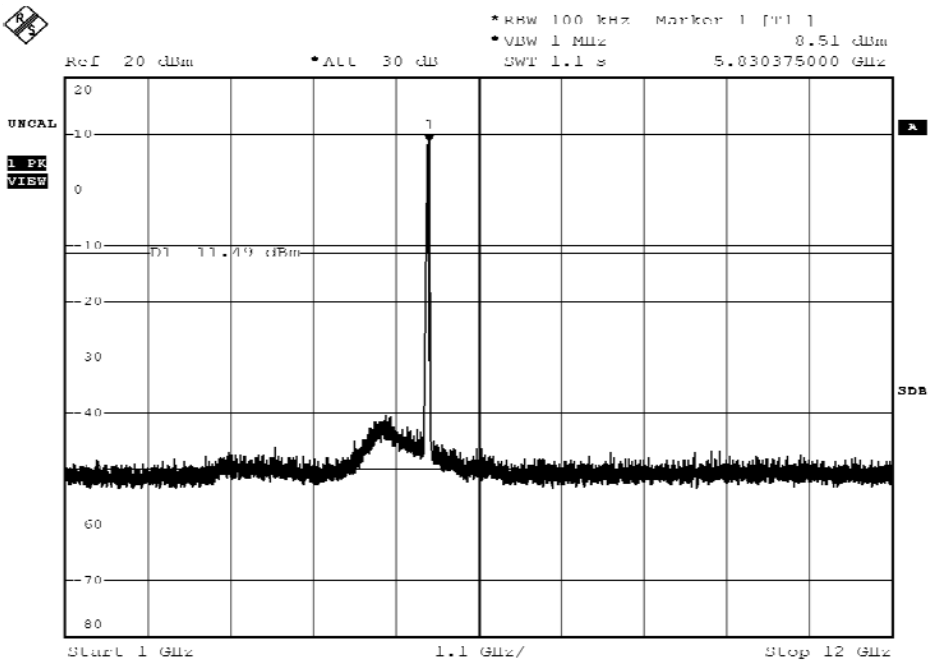

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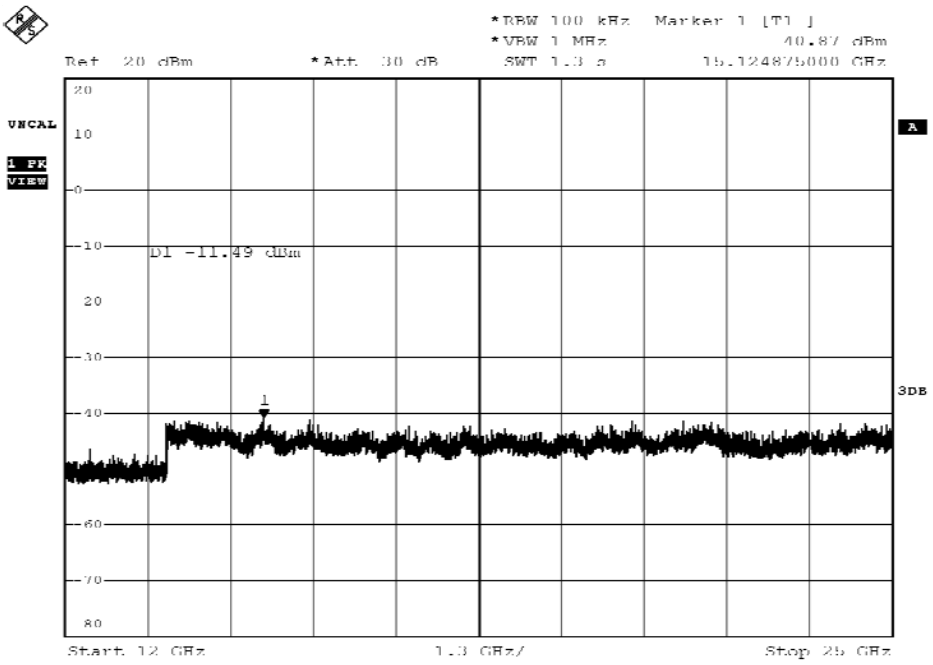

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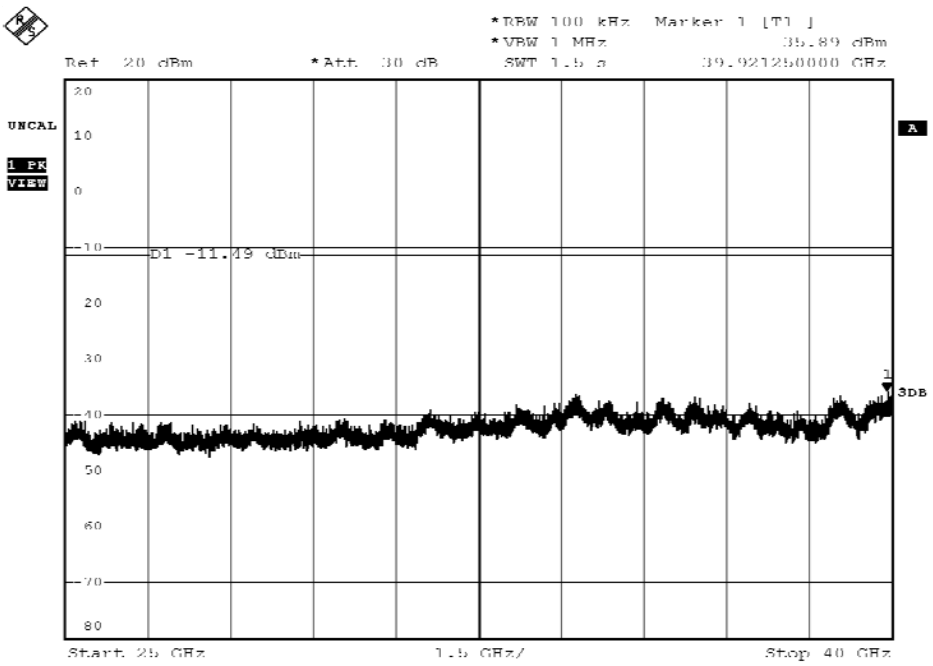

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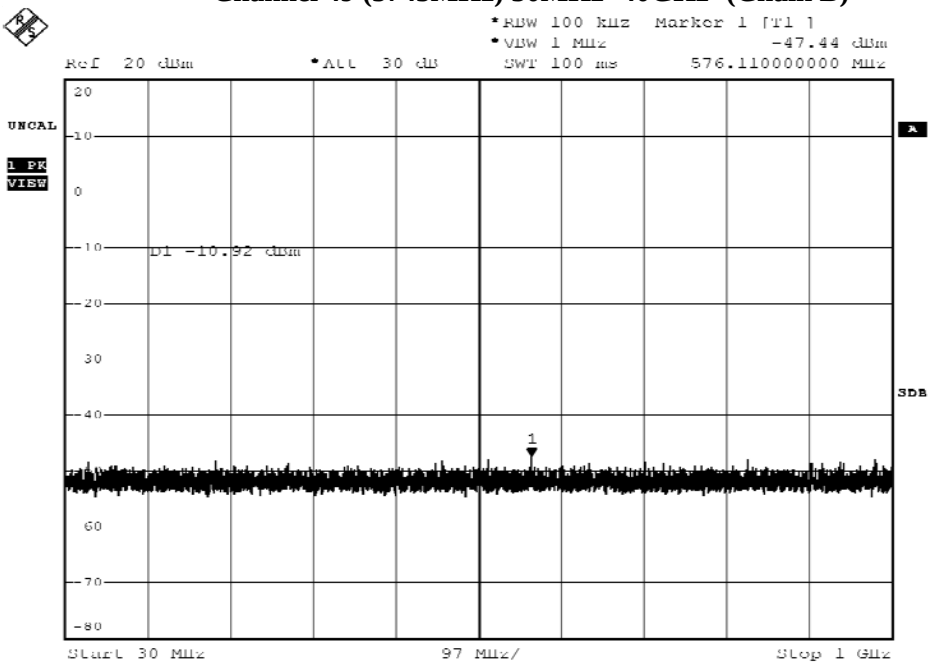
Channel 49 (5745MHz) 30MHz -40GHz- (Chain B)



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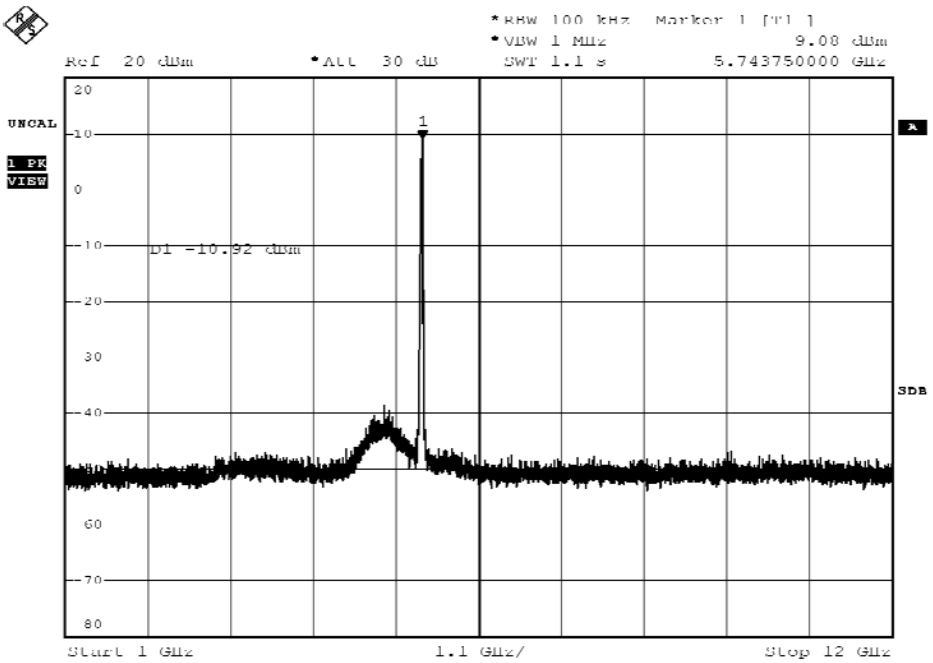

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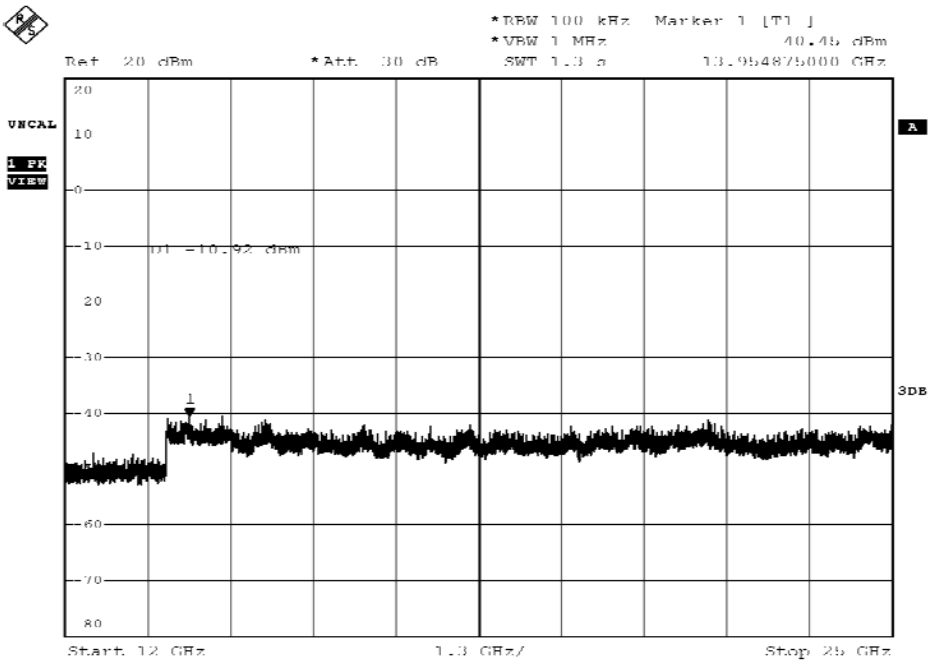

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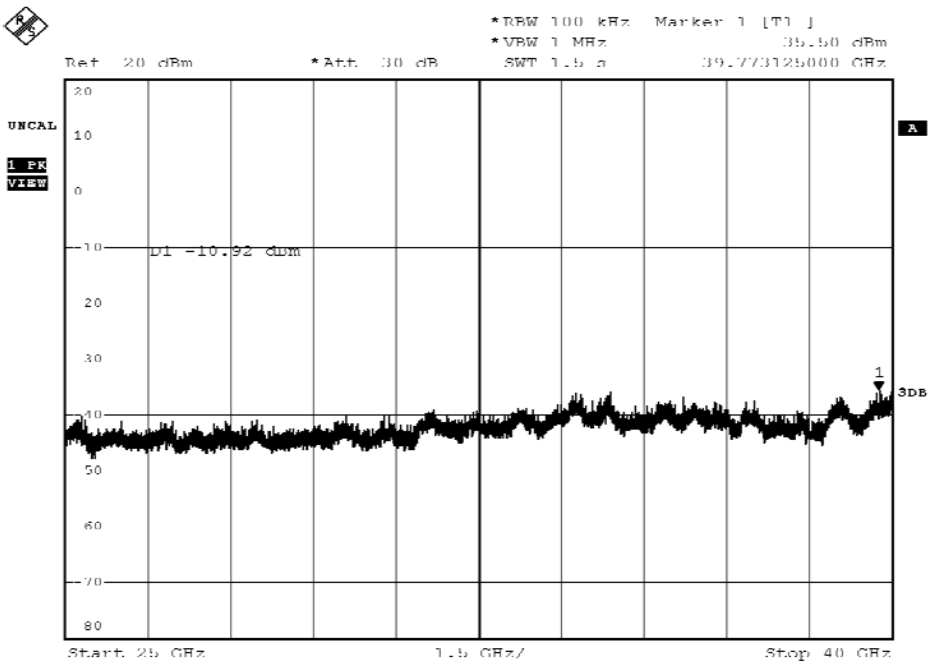

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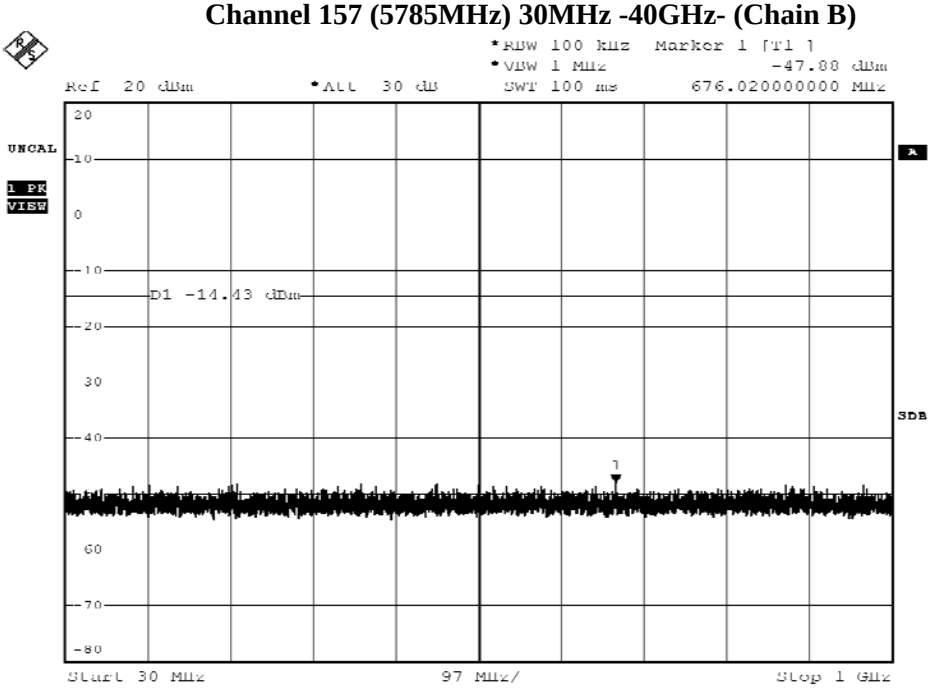
Channel 157 (5785MHz) 30MHz -40GHz- (Chain B)



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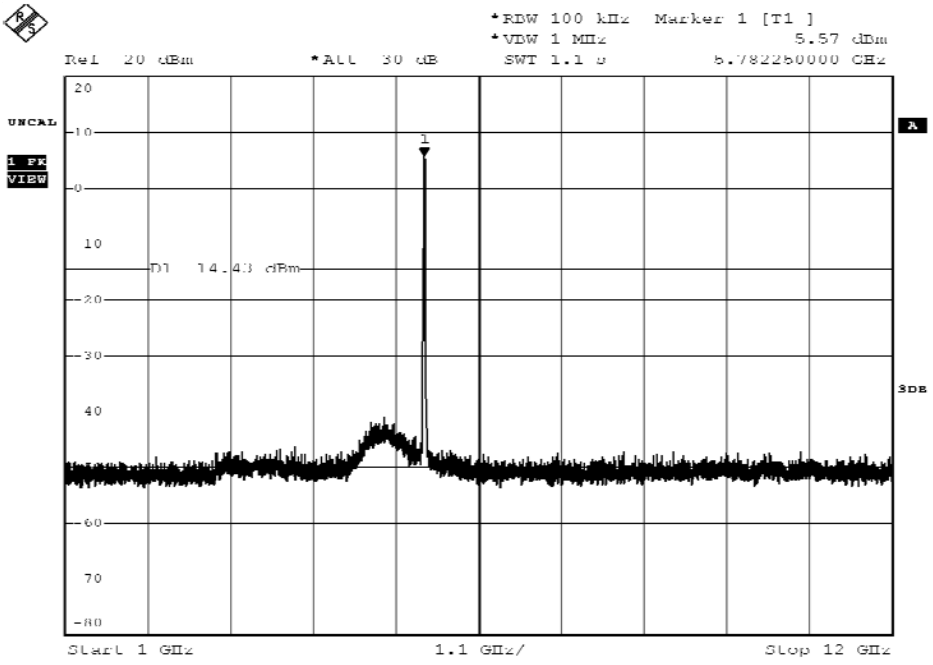

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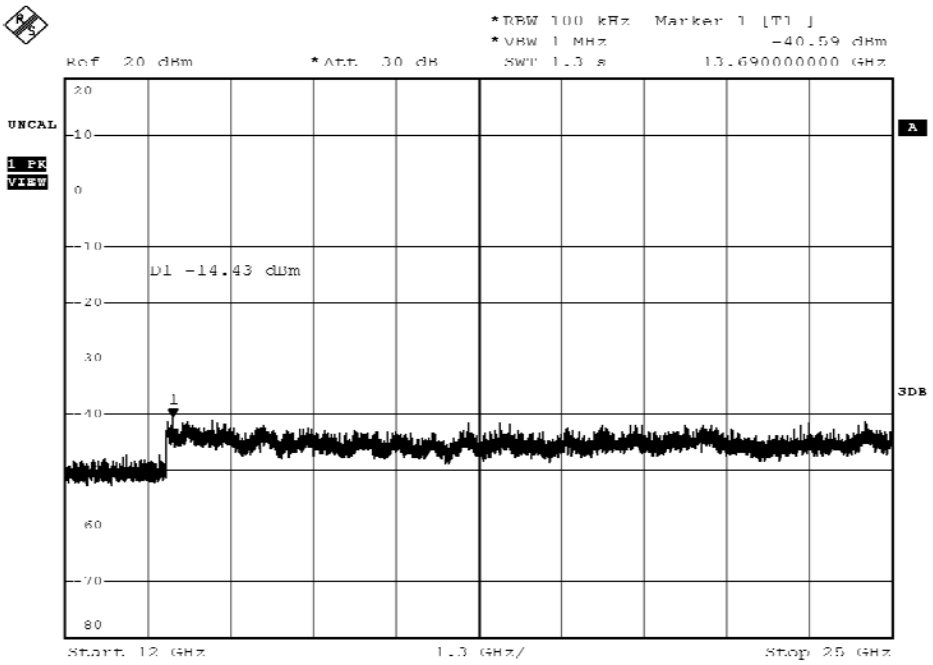

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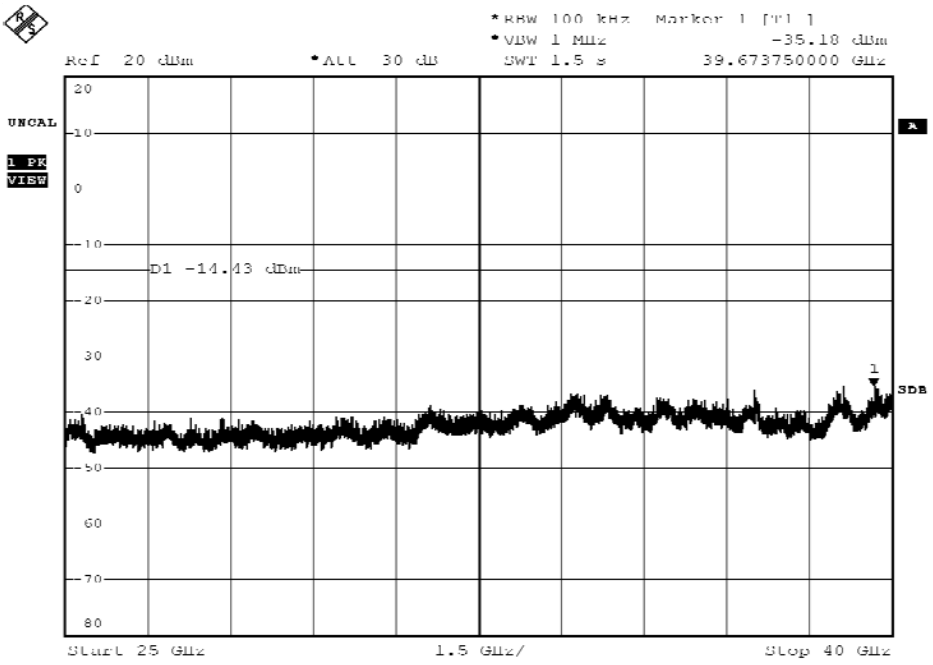

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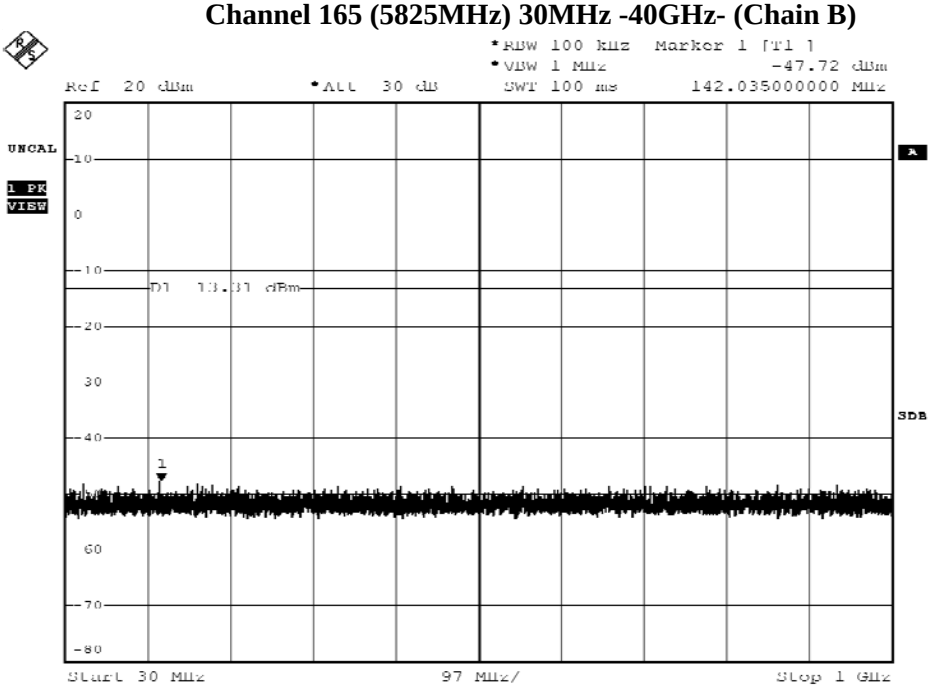
Channel 165 (5825MHz) 30MHz -40GHz- (Chain B)



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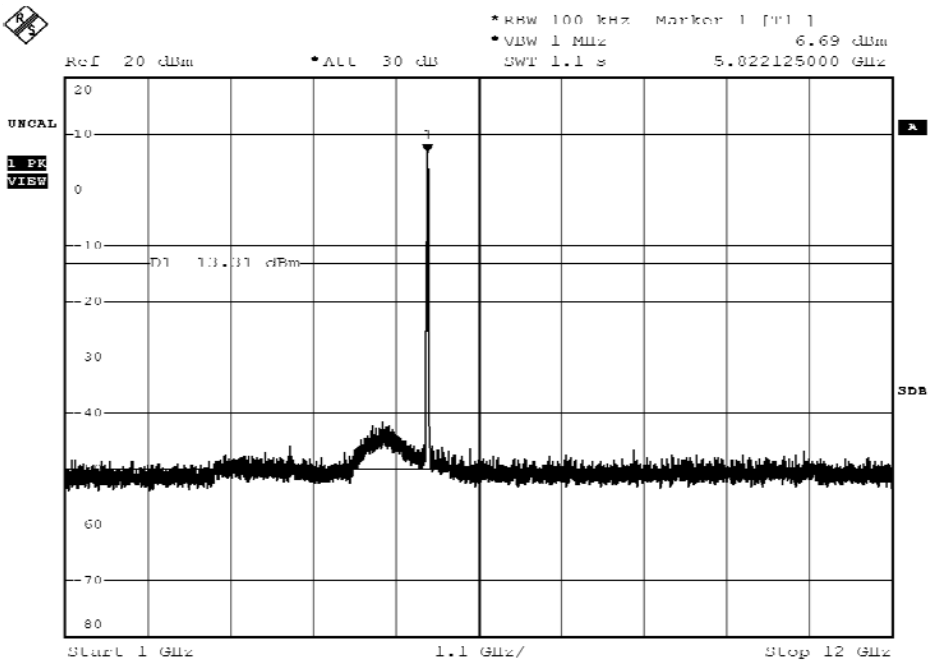

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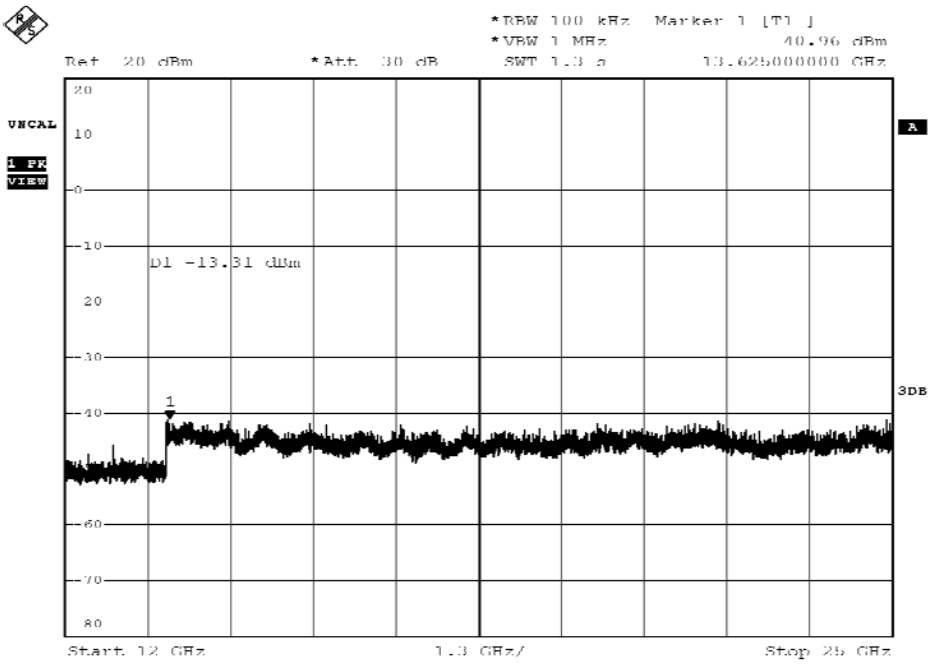

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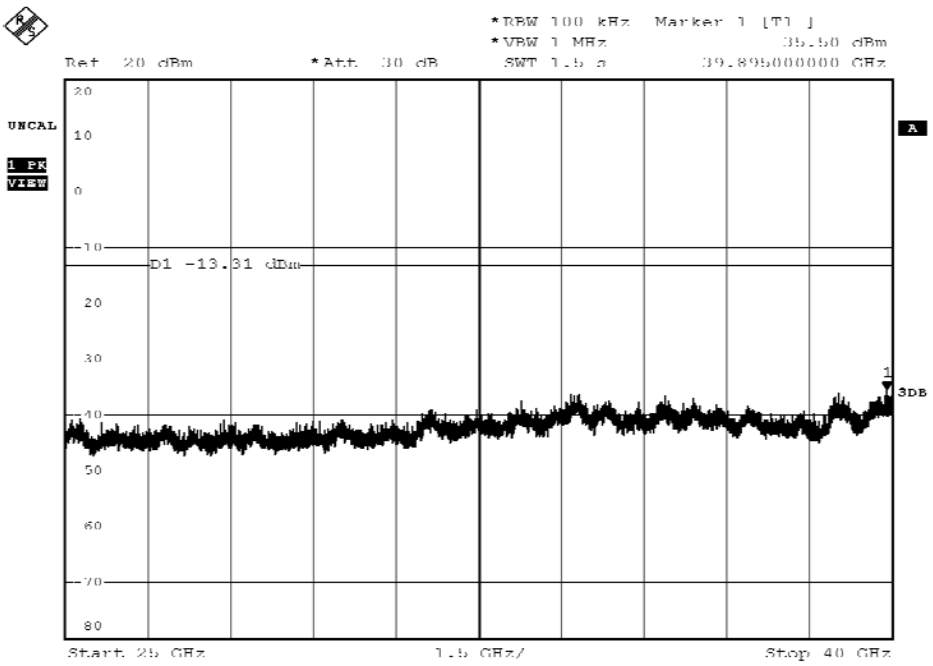
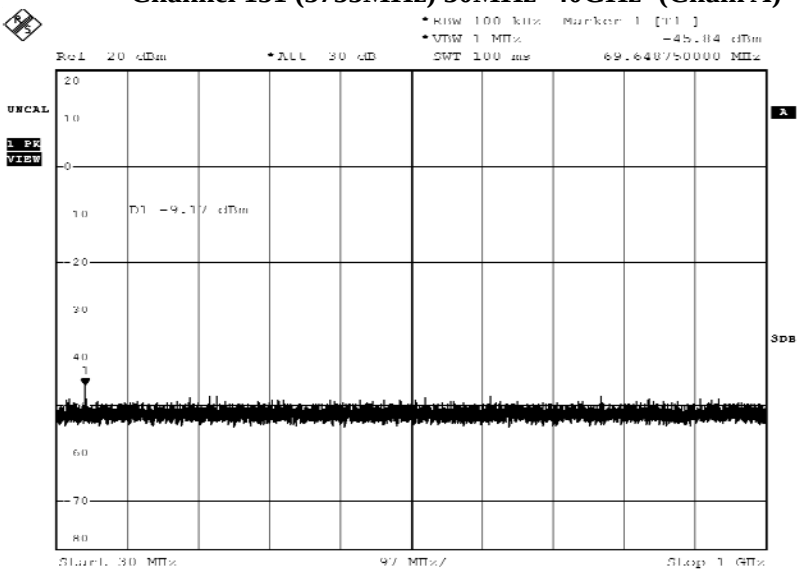


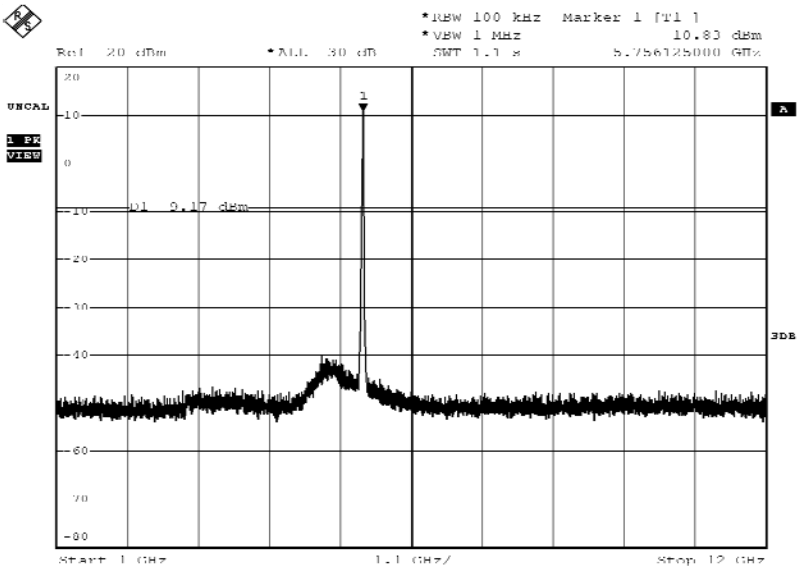
Date: 11.MAR.2013 17:22:43

Product : WiFi AP
Test Item : RF Antenna Conducted Spurious
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band)

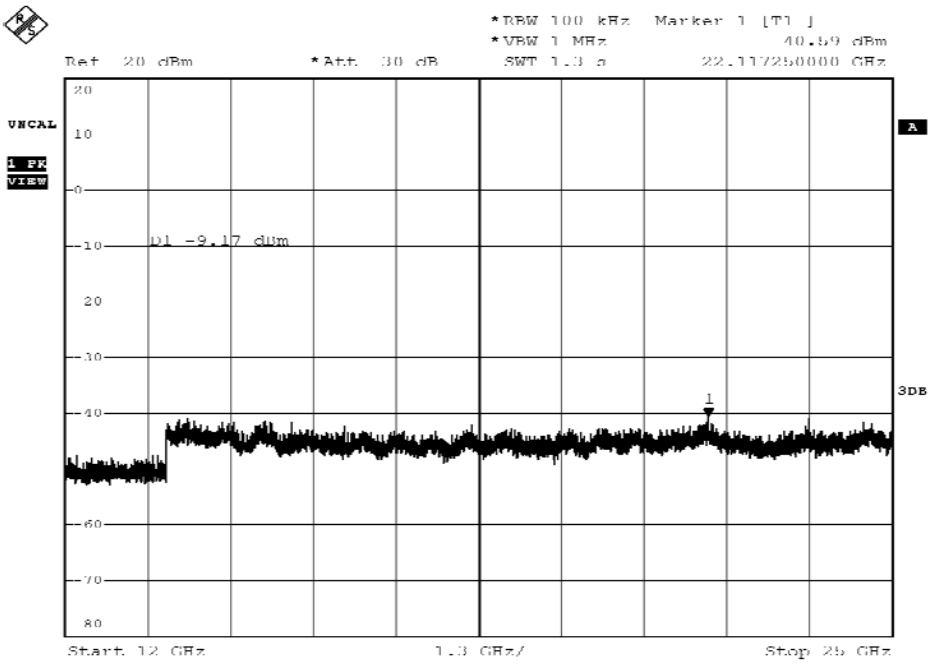
Channel 151 (5755MHz) 30MHz -40GHz- (Chain A)



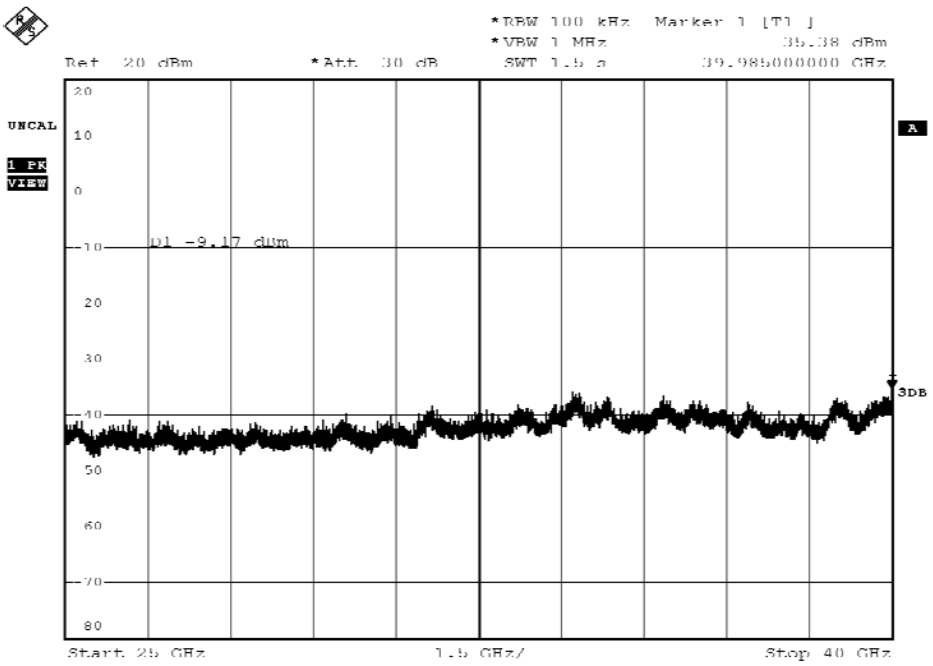
Date: 11.MAR.2013 17:24:31



Date: 11.MAR.2013 17:23:54

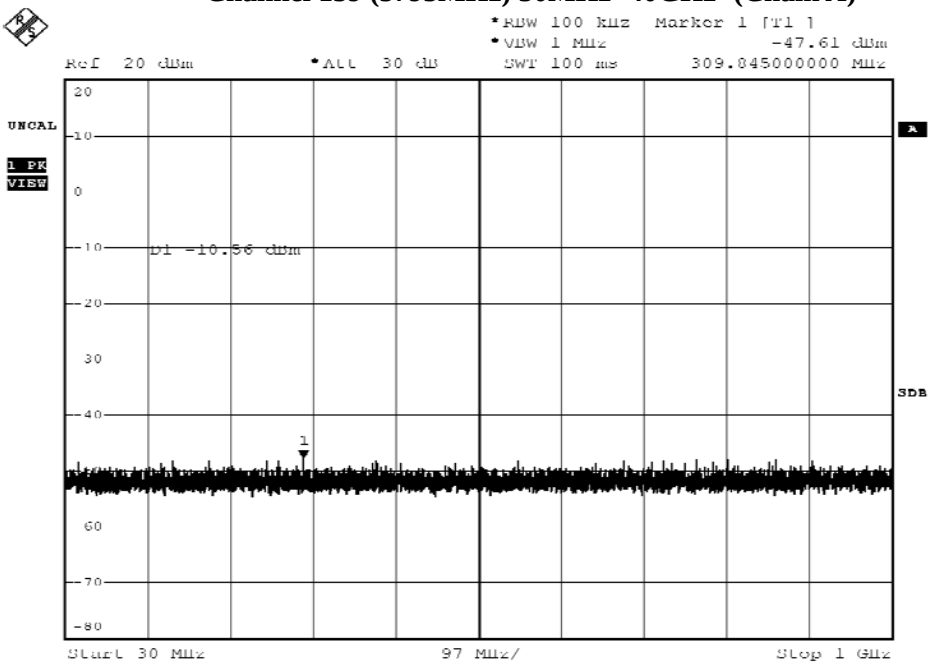


Date: 11.MAR.2013 17:25:09

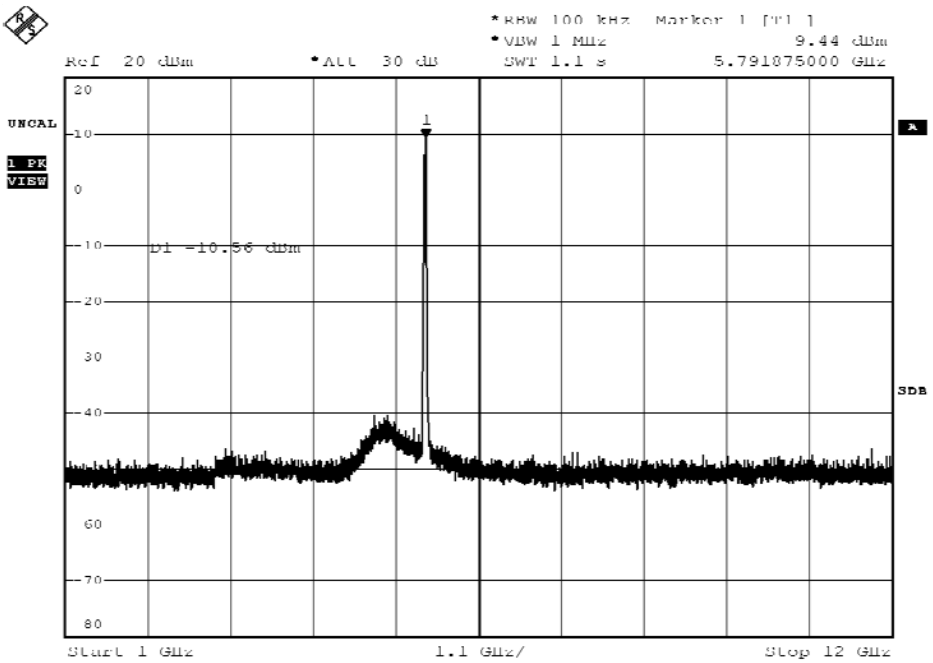


Date: 11.MAR.2013 17:25:46

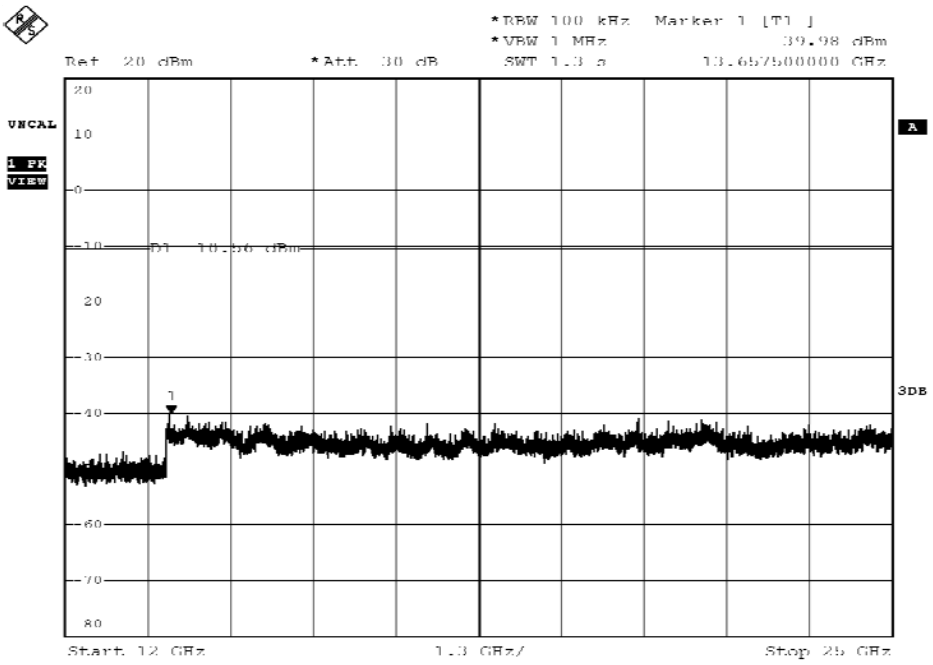
Channel 159 (5795MHz) 30MHz -40GHz- (Chain A)



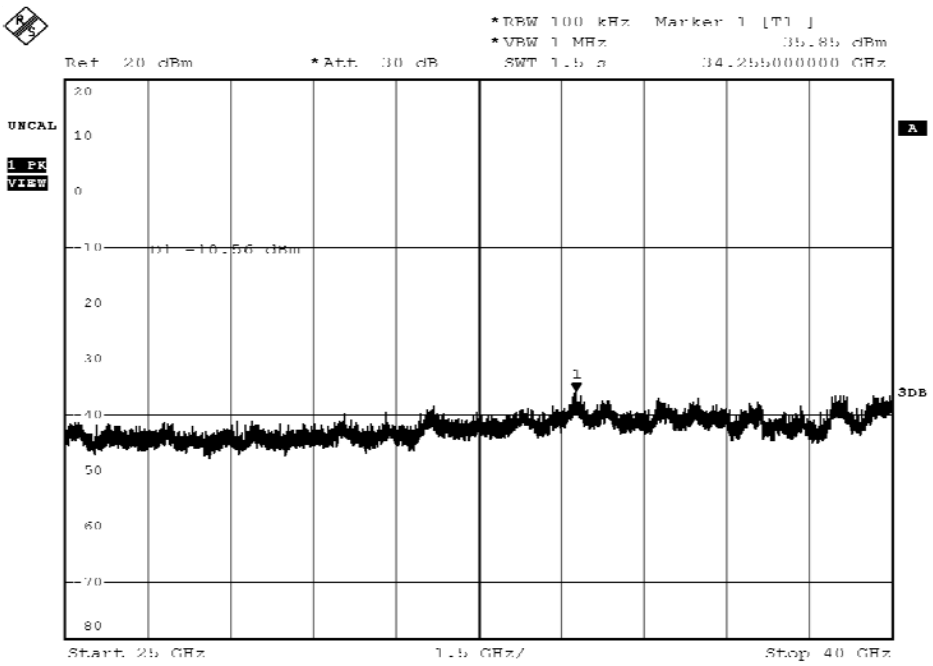
Date: 11.MAR.2013 17:36:04



Date: 11.MAR.2013 17:35:27

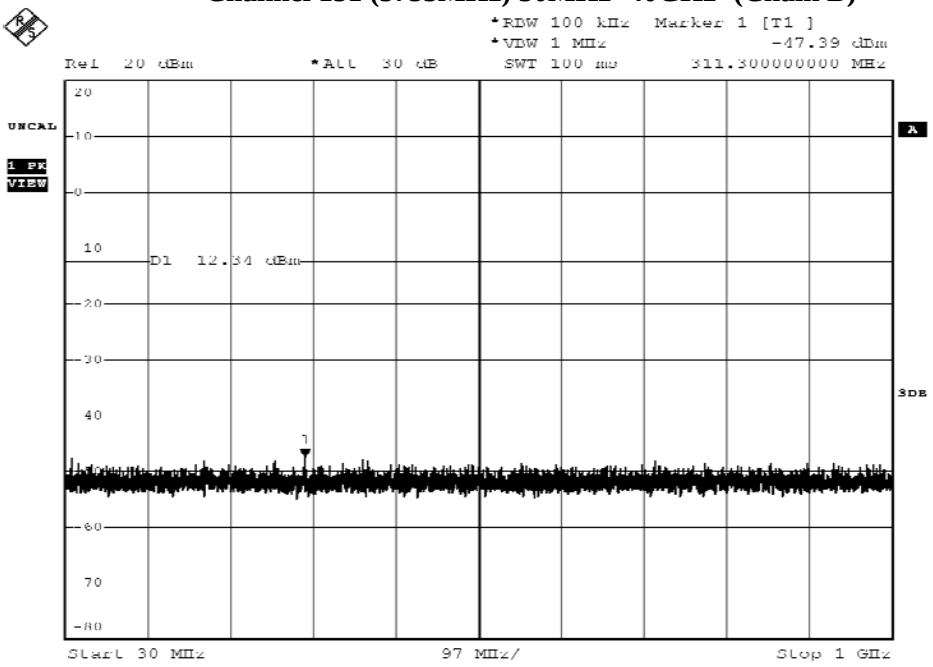


Date: 11.MAR.2013 17:36:41

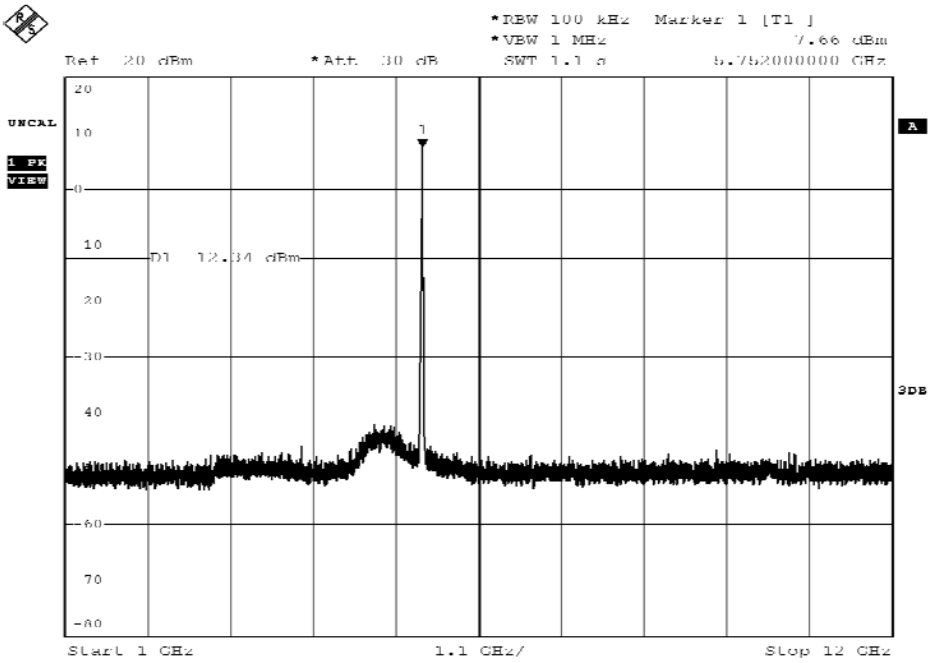


Date: 11.MAR.2013 17:37:18

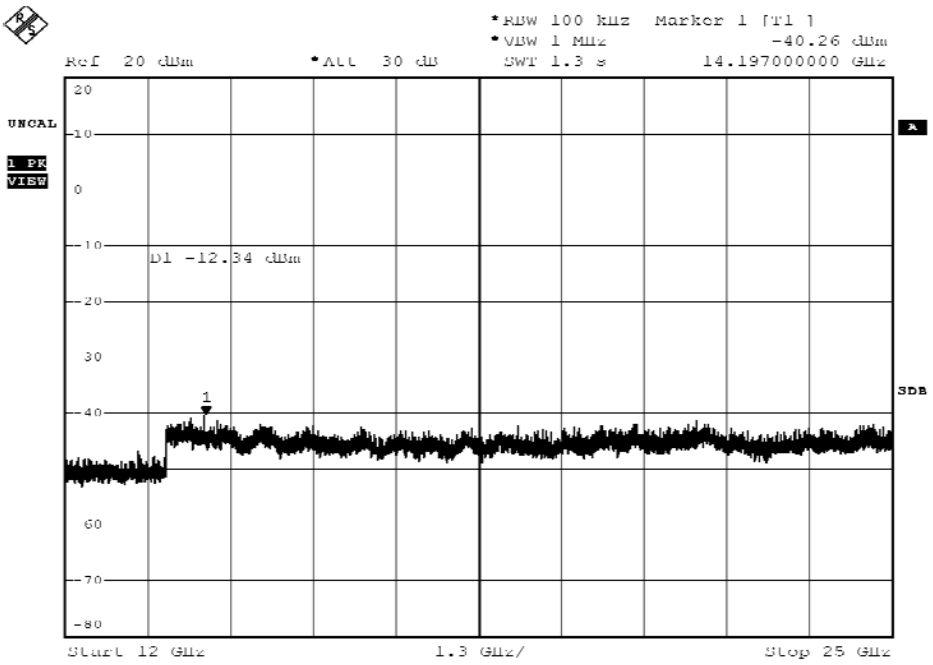
Channel 151 (5755MHz) 30MHz -40GHz- (Chain B)



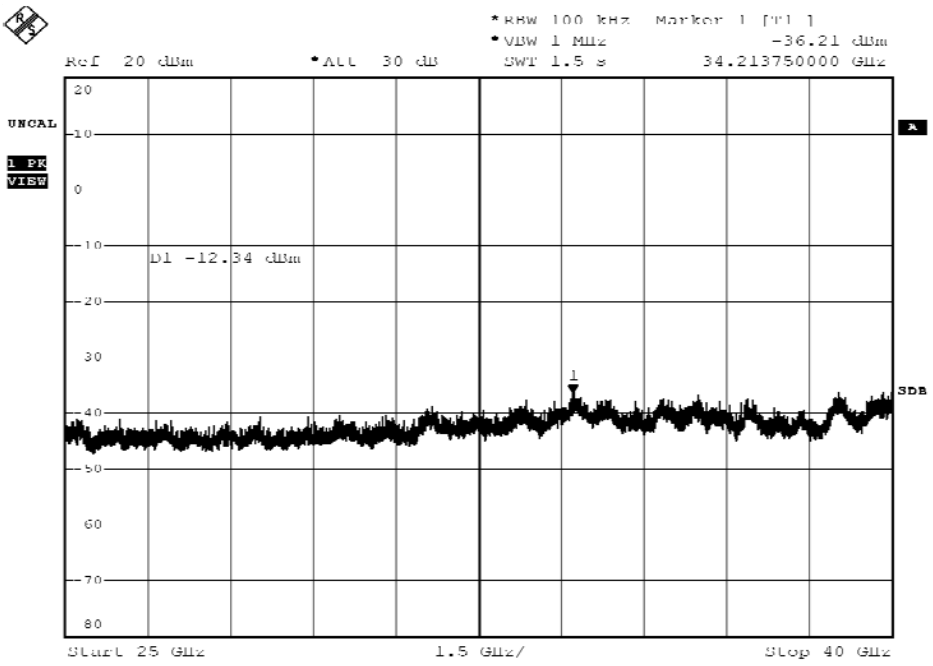
Date: 11.MAR.2013 17:27:14



Date: 11.MAR.2013 17:26:37

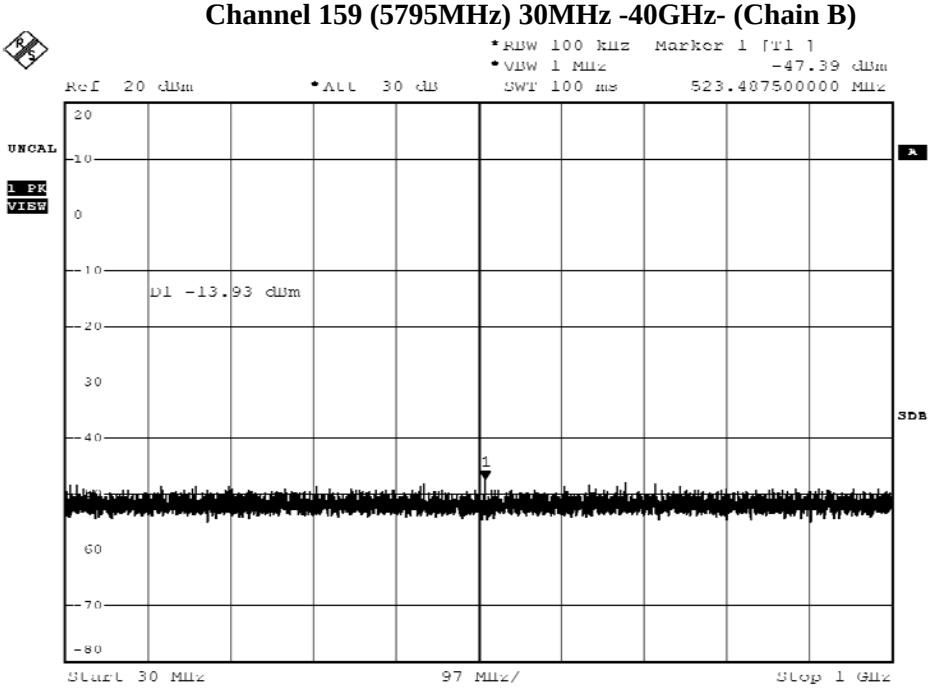


Date: 11.MAR.2013 17:27:52

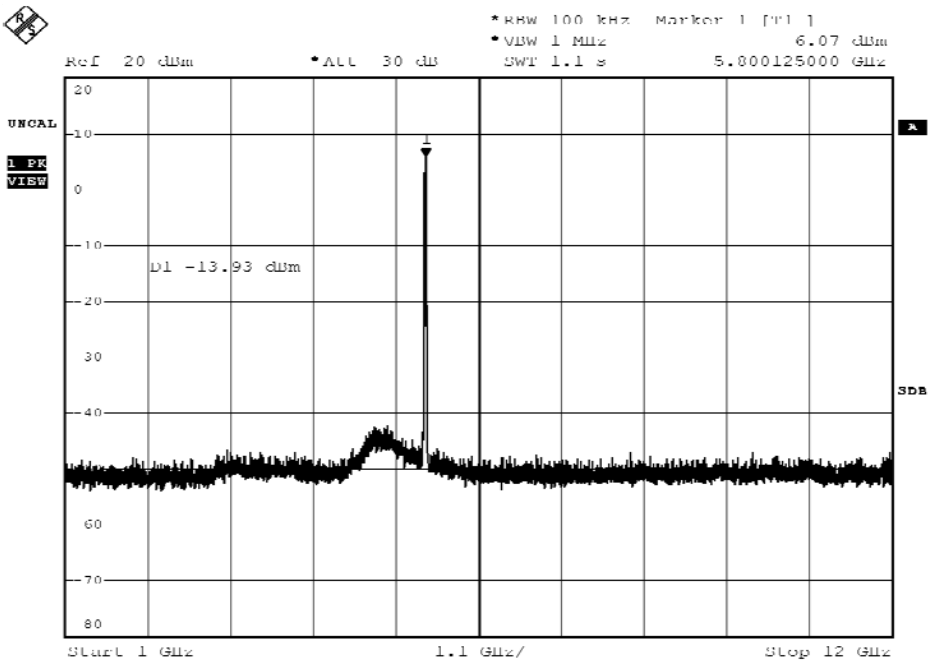


Date: 11.MAR.2013 17:28:29

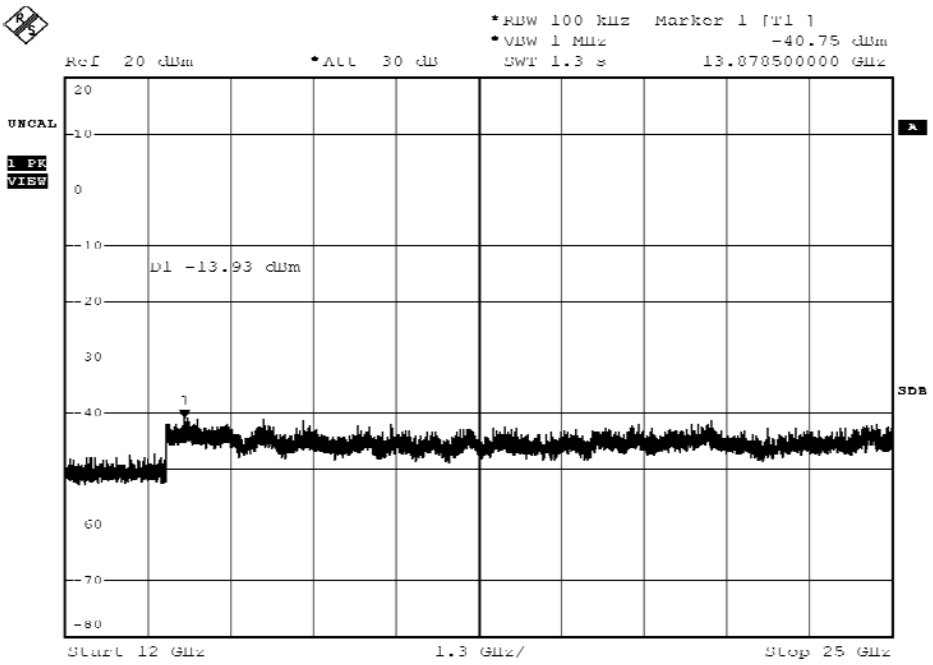
Channel 159 (5795MHz) 30MHz -40GHz- (Chain B)



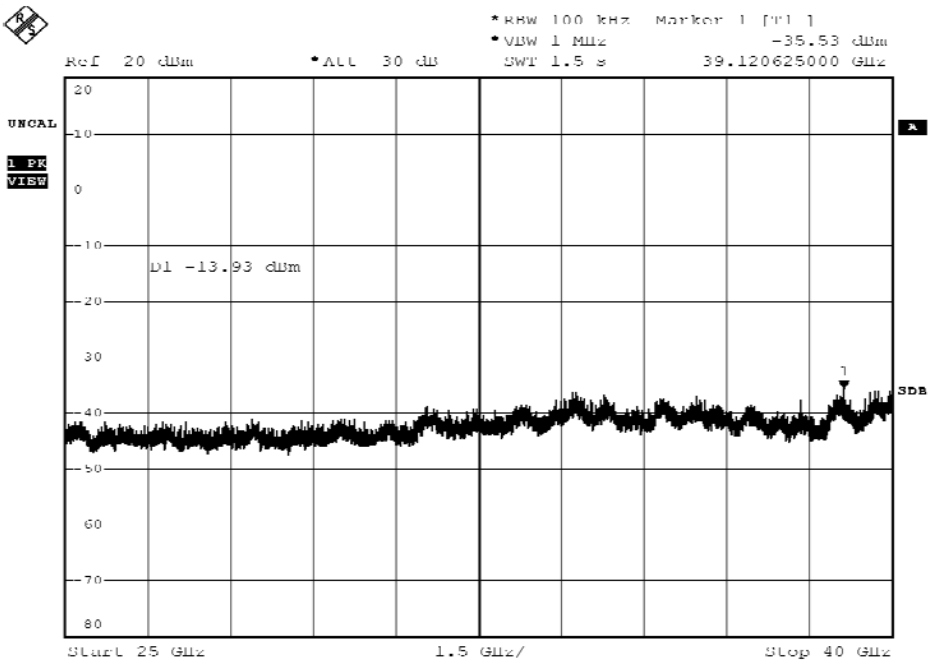
Date: 11.MAR.2013 17:42:24



Date: 11.MAR.2013 17:41:47



Date: 11.MAR.2013 17:43:01



Date: 11.MAR.2013 17:43:39

6. Band Edge

6.1. Test Equipment

RF Conducted Measurement

The following test equipments are used during the band edge tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013
	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2013

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

RF Radiated Measurement:

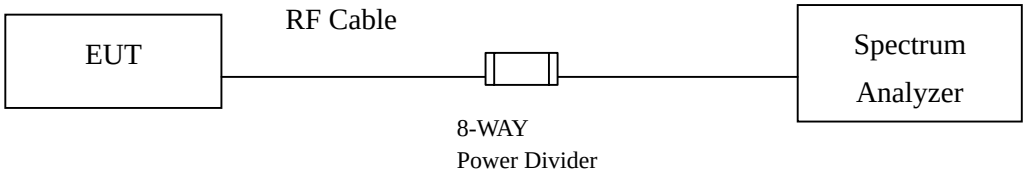
The following test equipments are used during the band edge tests:

Test Site		Equipment	Manufacturer	Model No./Serial No.	Last Cal.
☒Site # 3		Bilog Antenna	Schaffner Chase	CBL6112B/2673	Sep., 2012
	X	Horn Antenna	Schwarzbeck	BBHA9120D/D305	Sep., 2012
		Horn Antenna	Schwarzbeck	BBHA9170/208	Jul., 2012
		Pre-Amplifier	QTK	QTK-AMP-03 / 0003	May, 2012
	X	Pre-Amplifier	QTK	AP-180C / CHM_0906076	Sep., 2012
		Pre-Amplifier	MITEQ	AMF-4D-180400-45-6P/ 925975	Mar, 2013
	X	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2012
		Test Receiver	R & S	ESCS 30/ 825442/018	Sep., 2012
	X	Coaxial Cable	QuieTek	QTK-CABLE/ CAB5	Feb., 2013
	X	Controller	QuieTek	QTK-CONTROLLER/ CTRL3	N/A
	X	Coaxial Switch	Anritsu	MP59B/6200265729	N/A

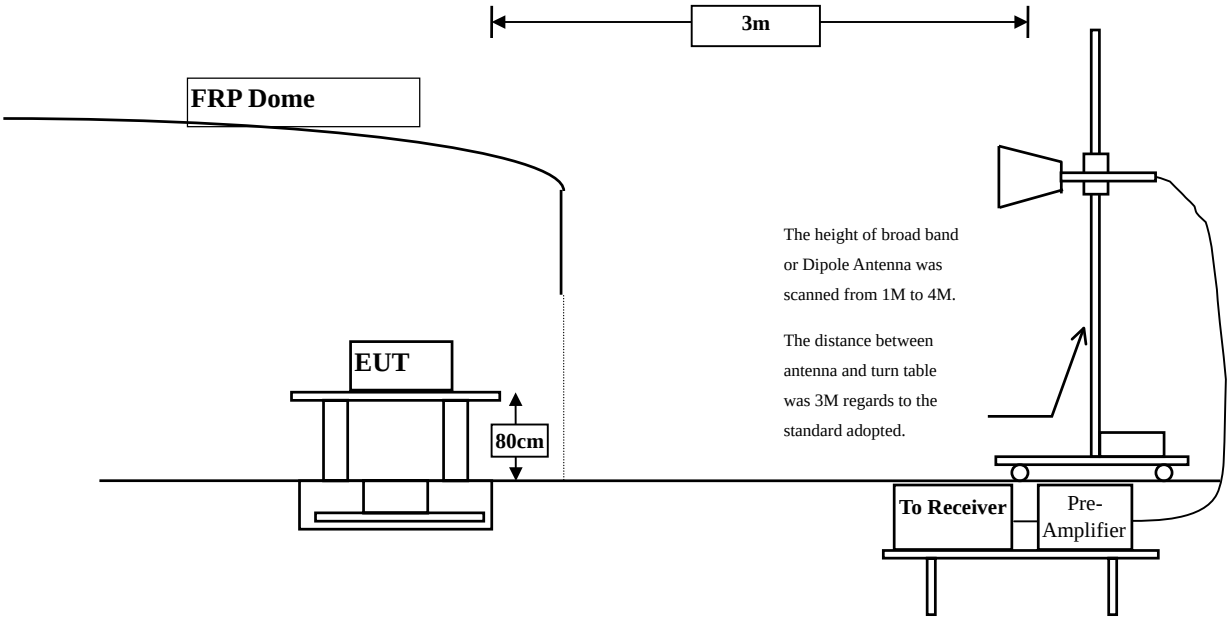
Note: 1. All instruments are calibrated every one year.
2. The test instruments marked by "X" are used to measure the final test results.

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement:



6.3. Limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

6.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009 and tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.
The EUT is placed on a turn table which is 0.8 meter above ground. The turn table is rotated 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna is scanned from 1 meter to 4 meters to find out the maximum emission level. This is repeated for both horizontal and vertical polarization of the antenna. In order to find the maximum emission, all of the interface cables were manipulated according to ANSI C63.10: 2009. on radiated measurement.

6.5. Uncertainty

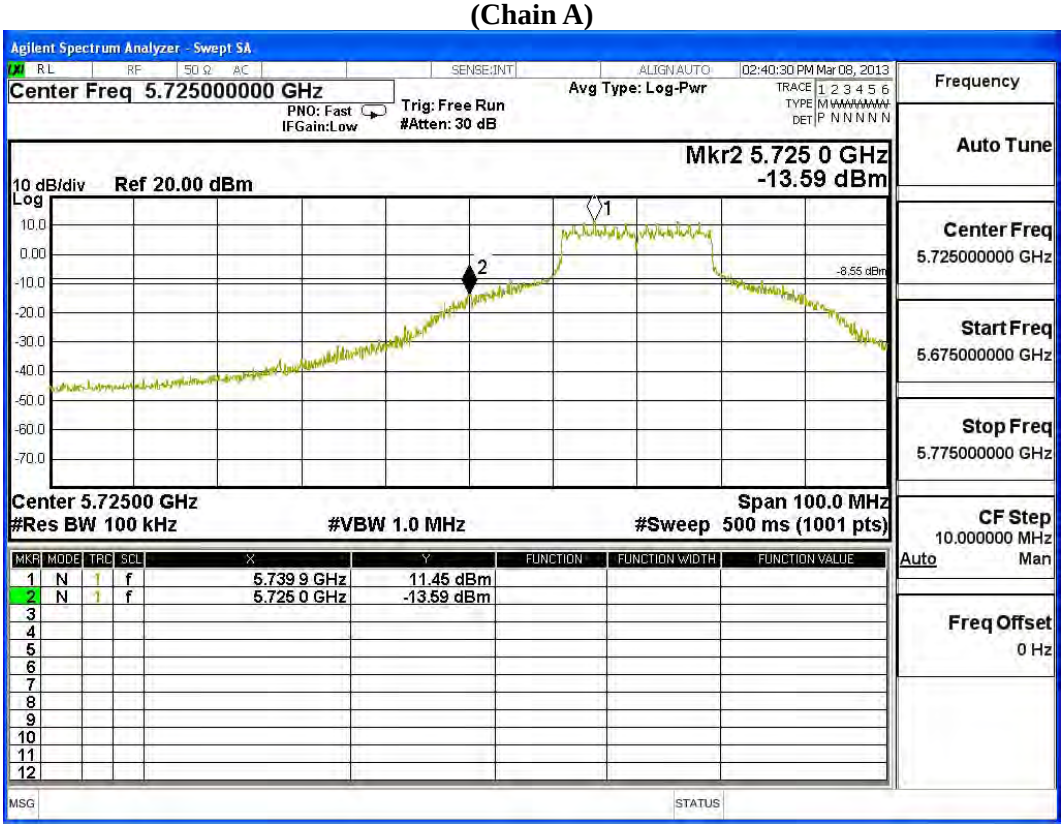
± 3.9 dB above 1GHz
± 3.8 dB below 1GHz

6.6. Test Result of Band Edge

Product : WiFi AP
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band)

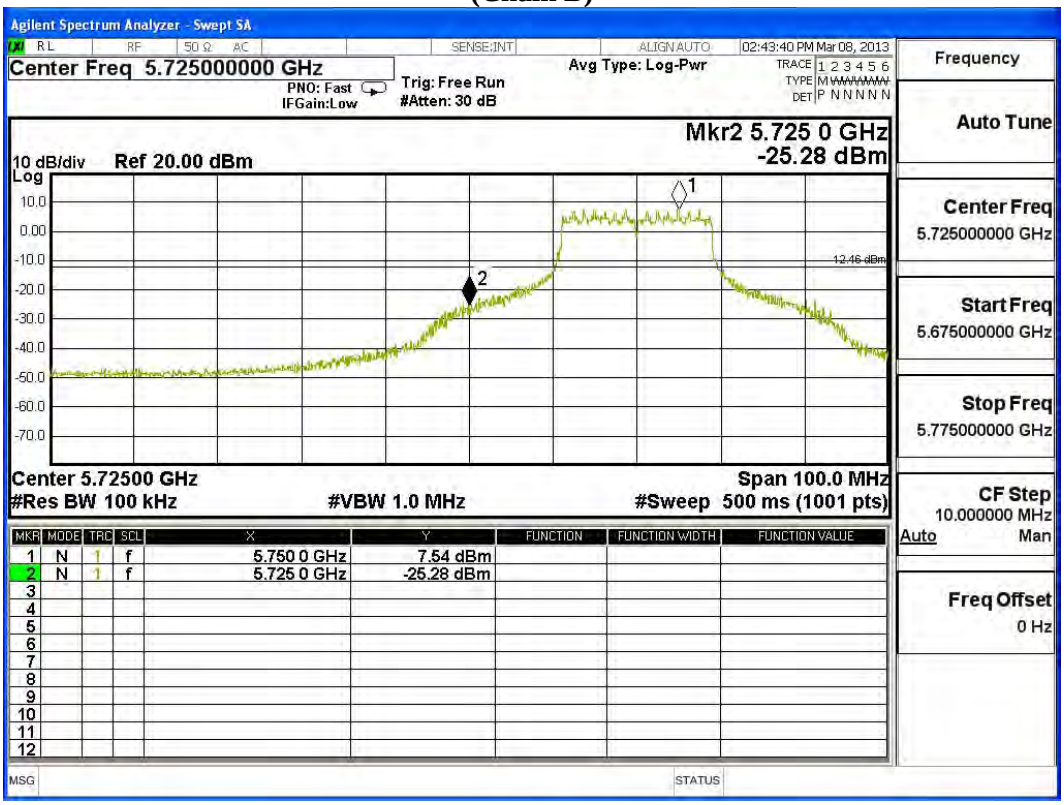
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	25.04	>20	PASS

(Chain A)



Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5745	32.82	>20	PASS

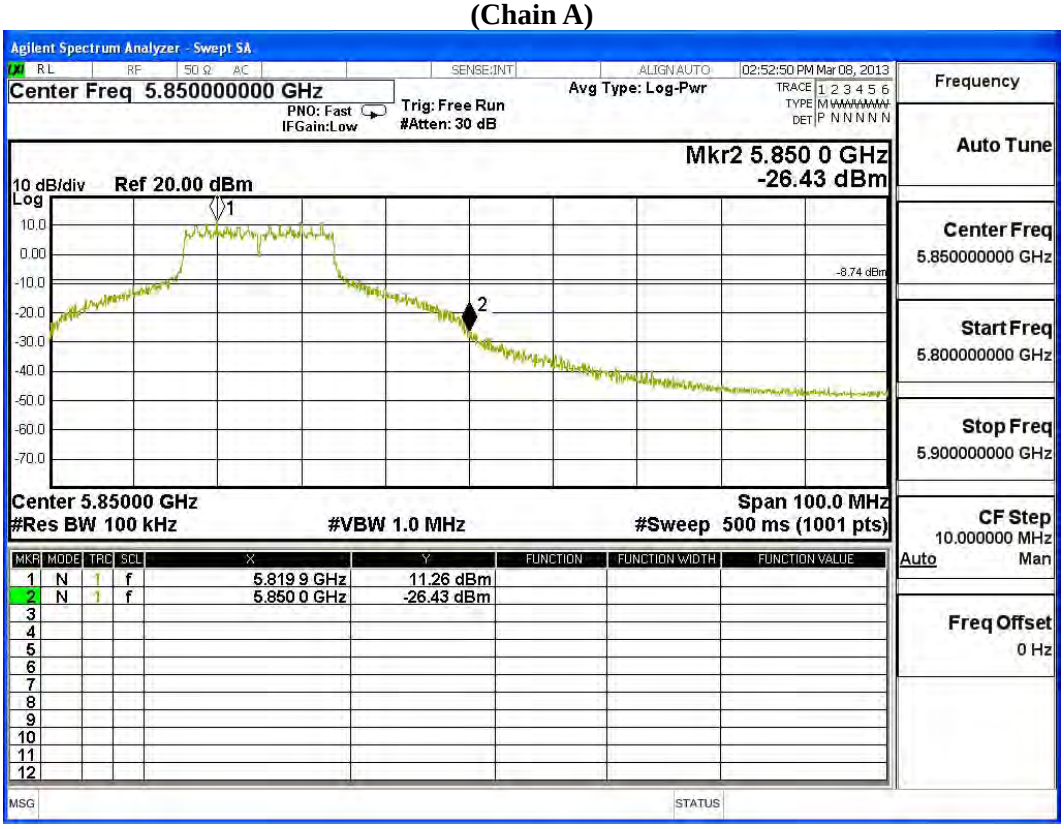
(Chain B)



Product : WiFi AP
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band)

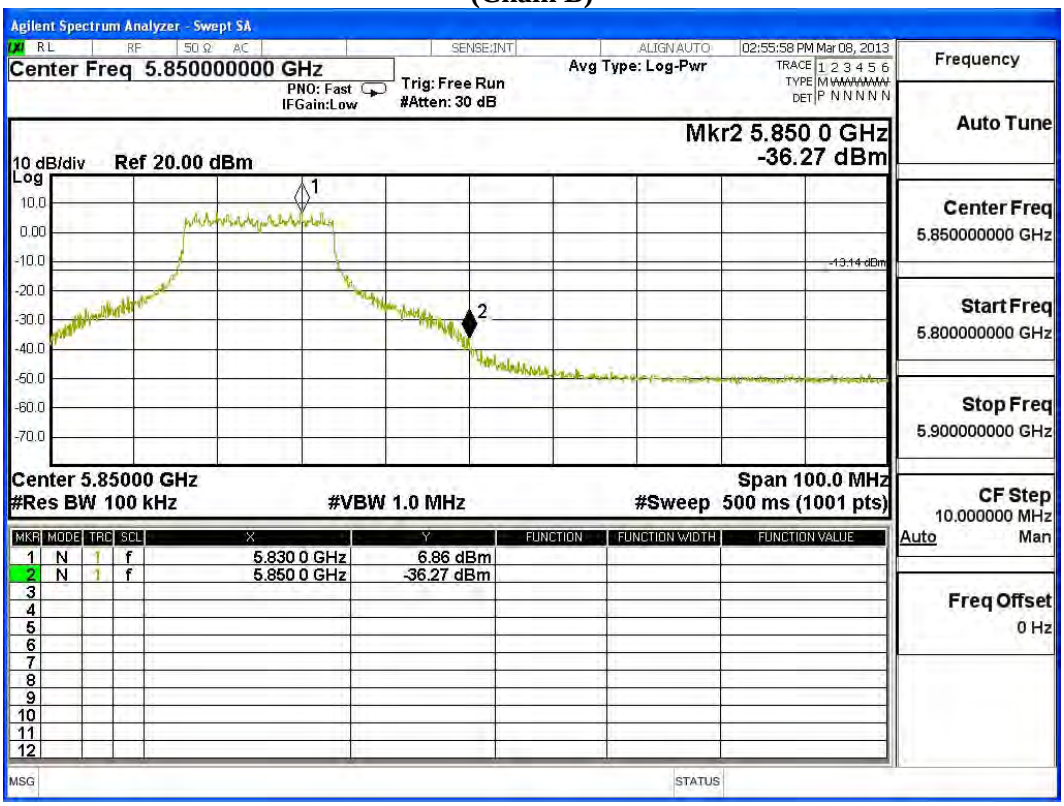
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	37.69	>20	PASS

(Chain A)



Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5825	43.13	>20	PASS

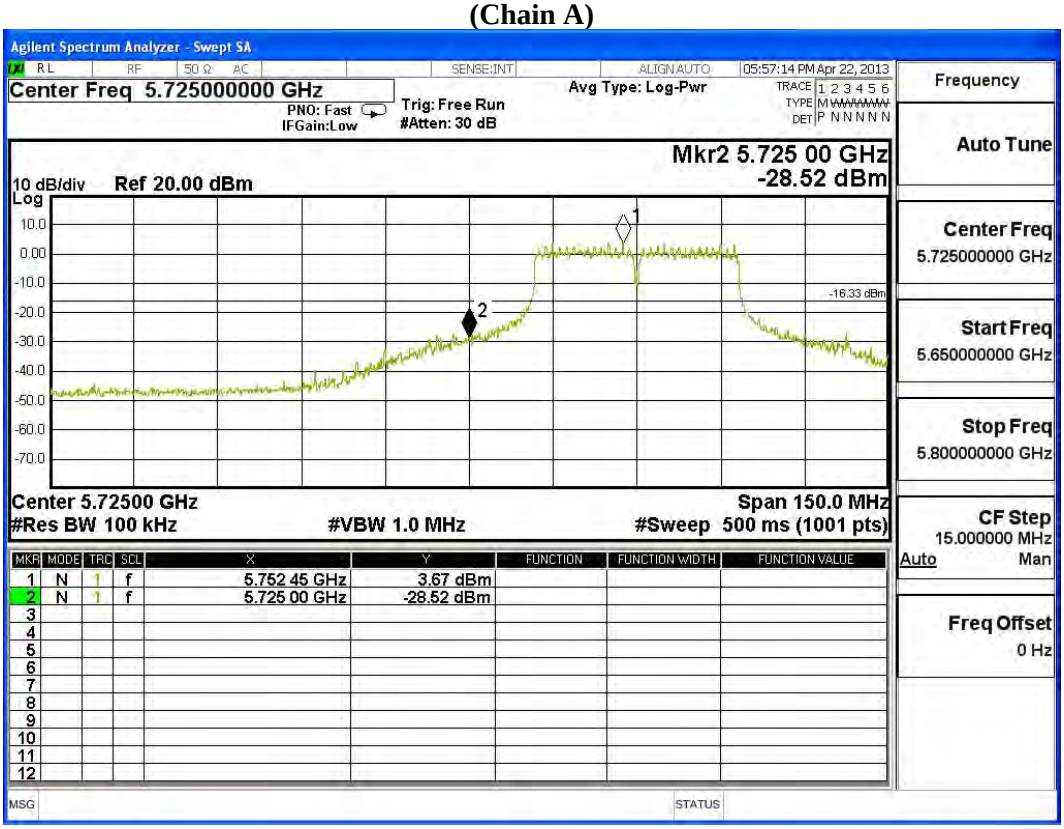
(Chain B)



Product : WiFi AP
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band)

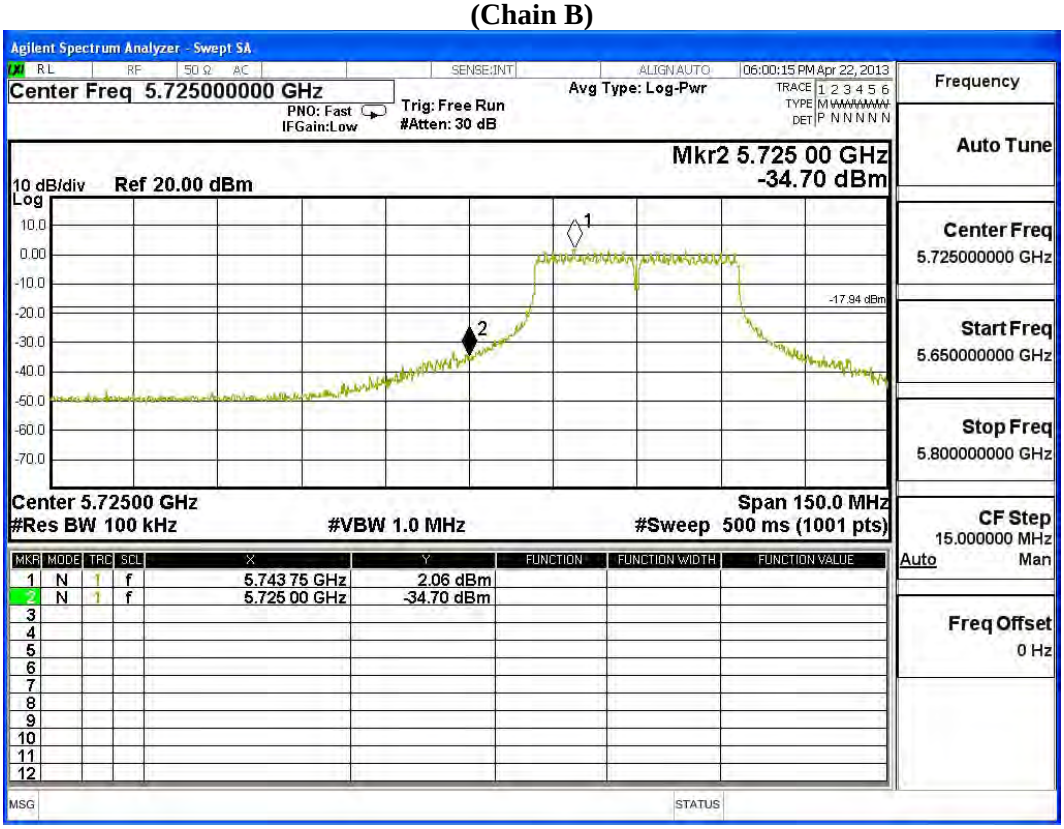
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	32.19	>20	PASS

(Chain A)



Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5755	36.76	>20	PASS

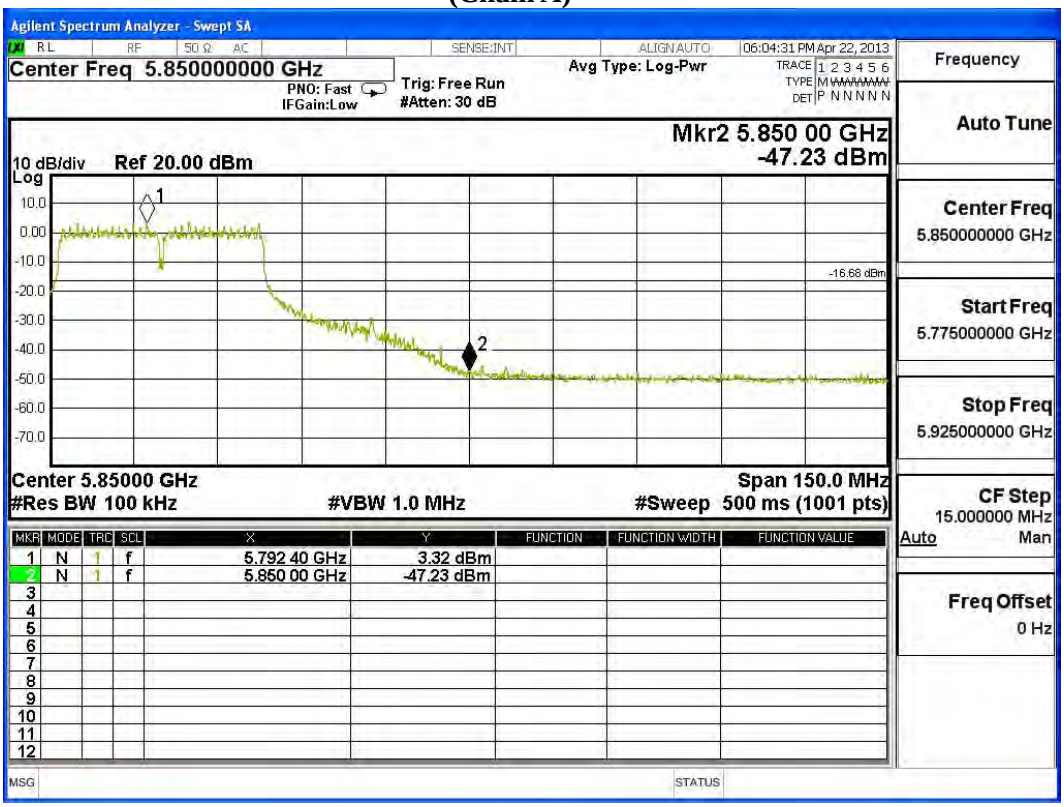
(Chain B)



Product : WiFi AP
Test Item : Band Edge
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band)

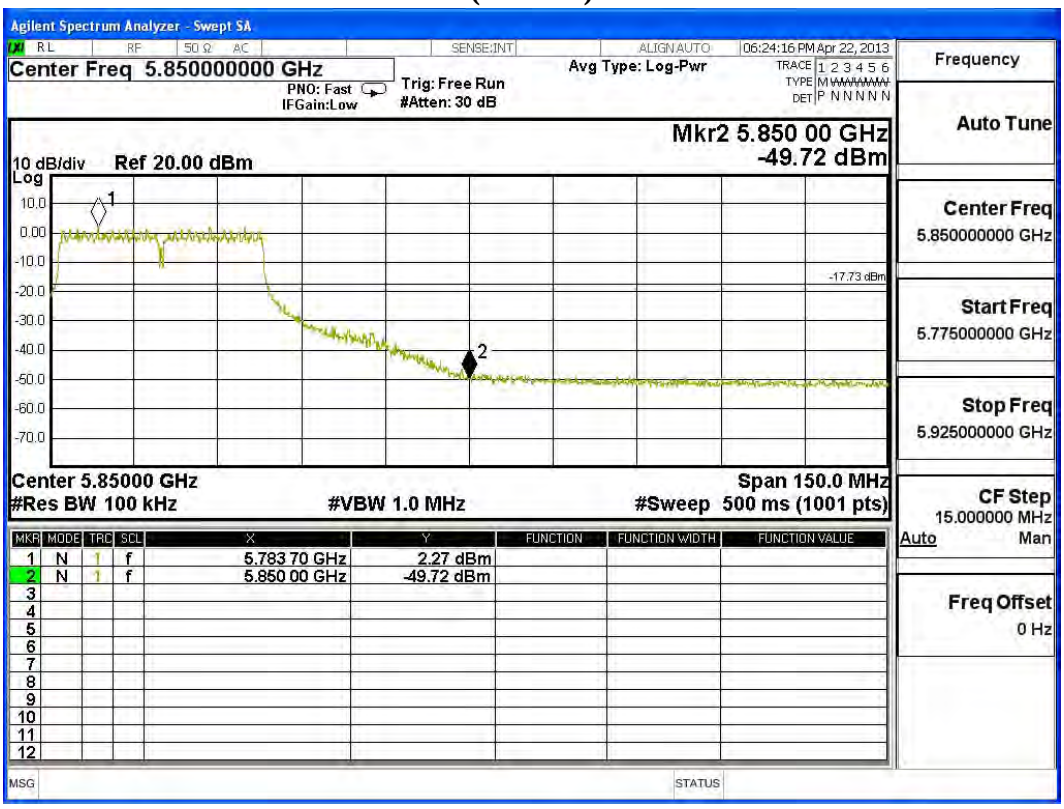
Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	50.55	>20	PASS

(Chain A)



Test Frequency (MHz)	Measurement Level Δ (dB)	Limit Δ (dB)	Result
5795	51.99	>20	PASS

(Chain B)



7. Occupied Bandwidth

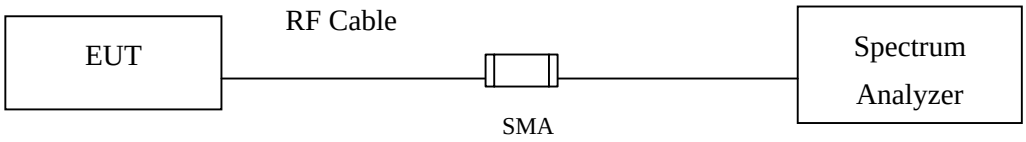
7.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

7.2. Test Setup



7.3. Limits

The minimum bandwidth shall be at least 500 kHz.

7.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.

Set RBW = 1-5% of the emission bandwidth, VBW≥3*RBW

7.5. Uncertainty

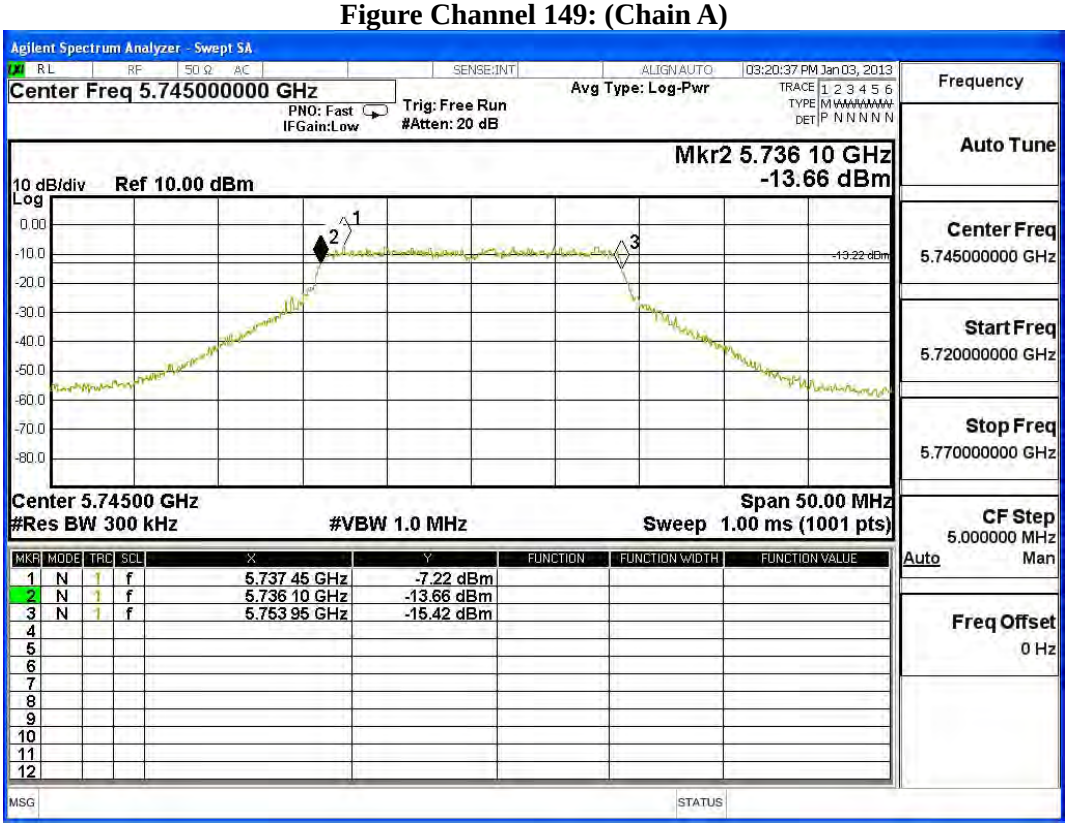
± 150Hz

7.6. Test Result of Occupied Bandwidth

Product : WiFi AP
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5745MHz)

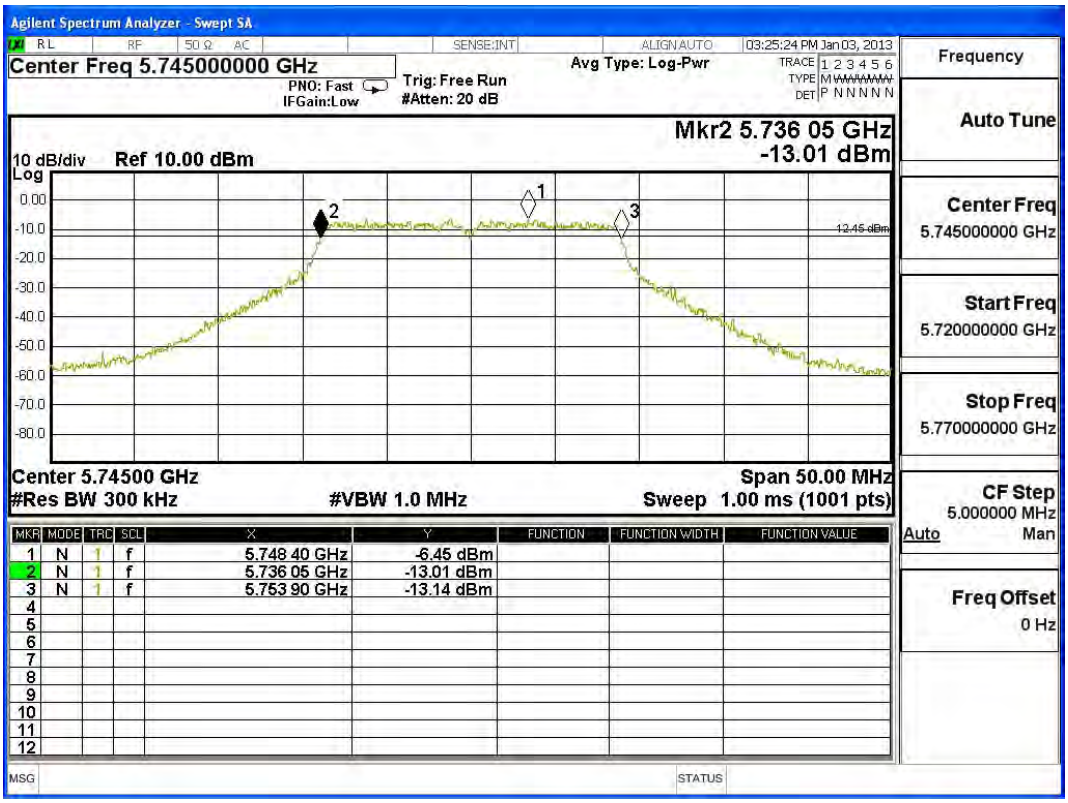
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17900	>500	Pass

Figure Channel 149: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
149	5745.00	17850	>500	Pass

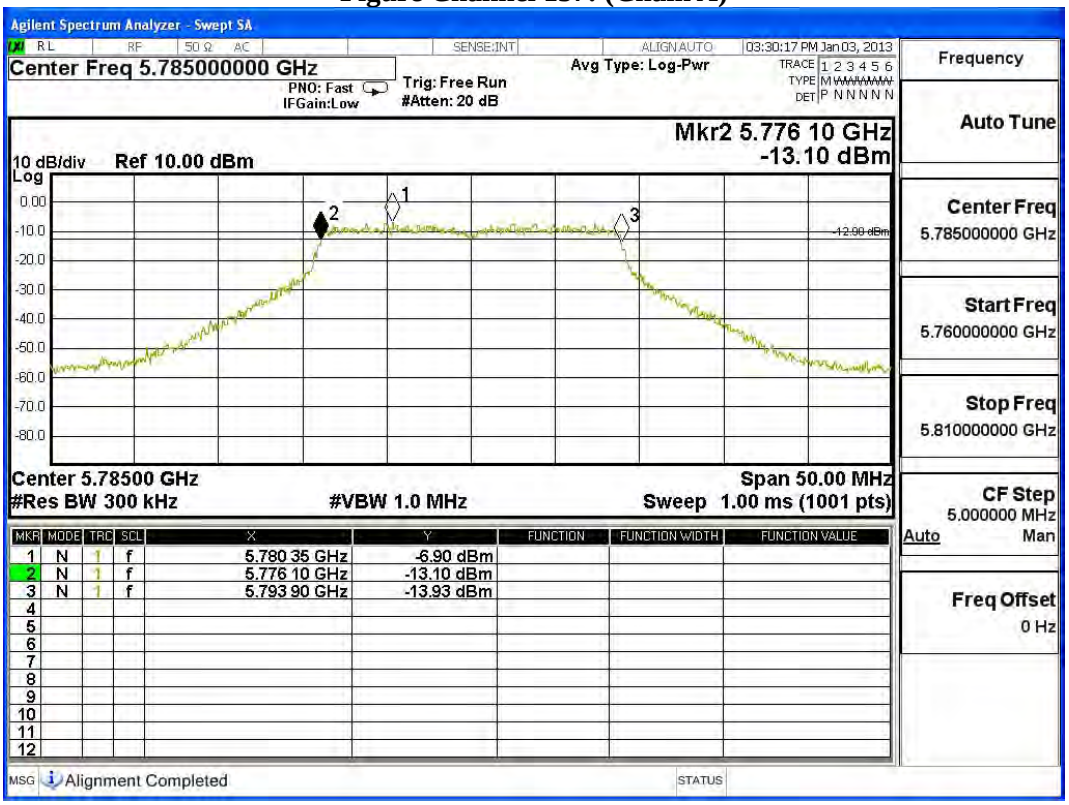
Figure Channel 149: (Chain B)



Product : WiFi AP
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5785MHz)

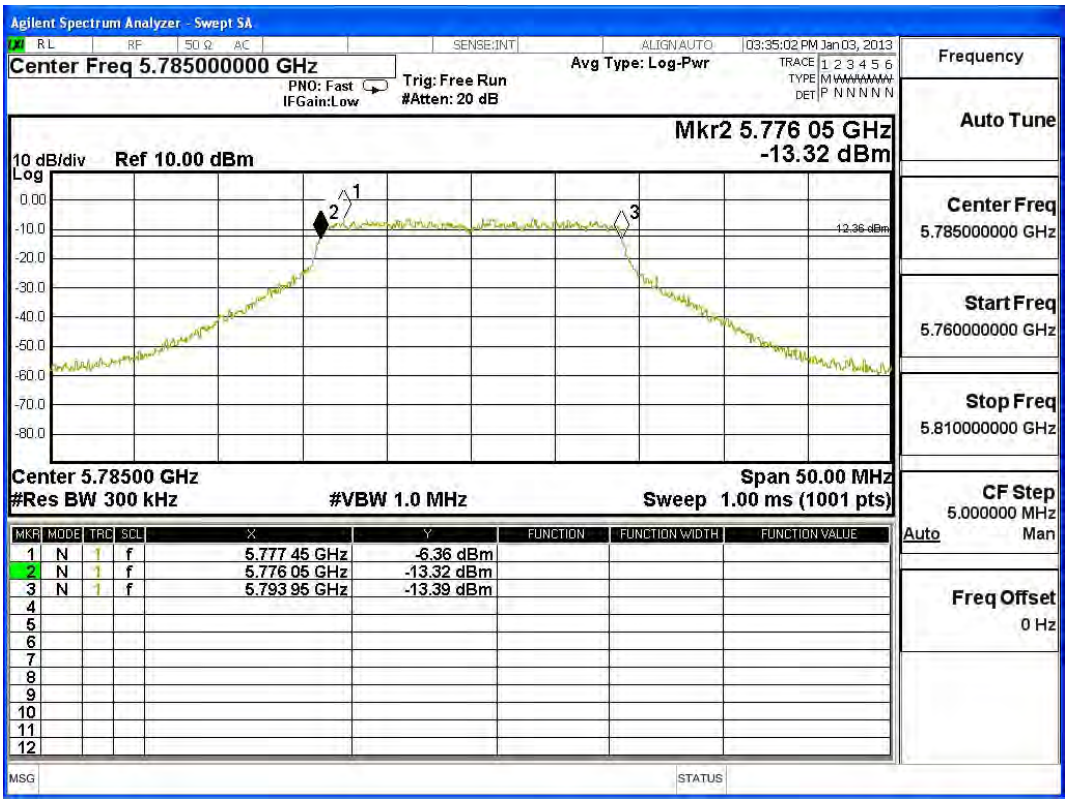
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17850	>500	Pass

Figure Channel 157: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
157	5785.00	17900	>500	Pass

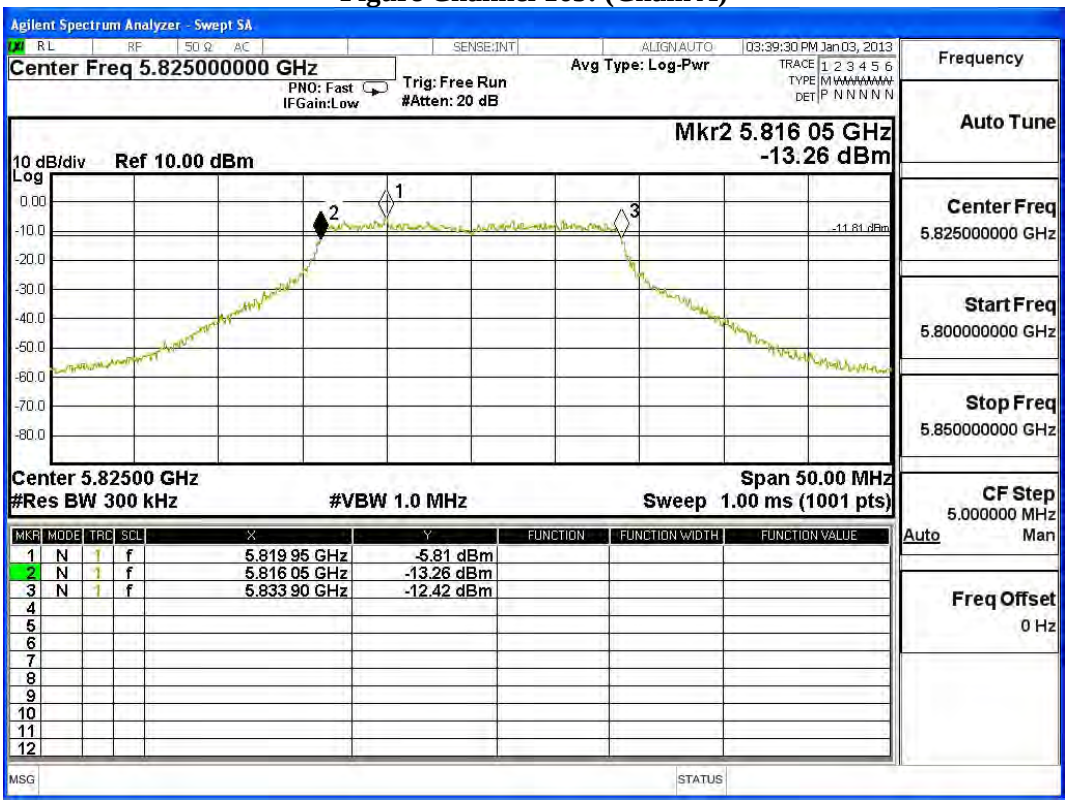
Figure Channel 157: (Chain B)



Product : WiFi AP
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5825MHz)

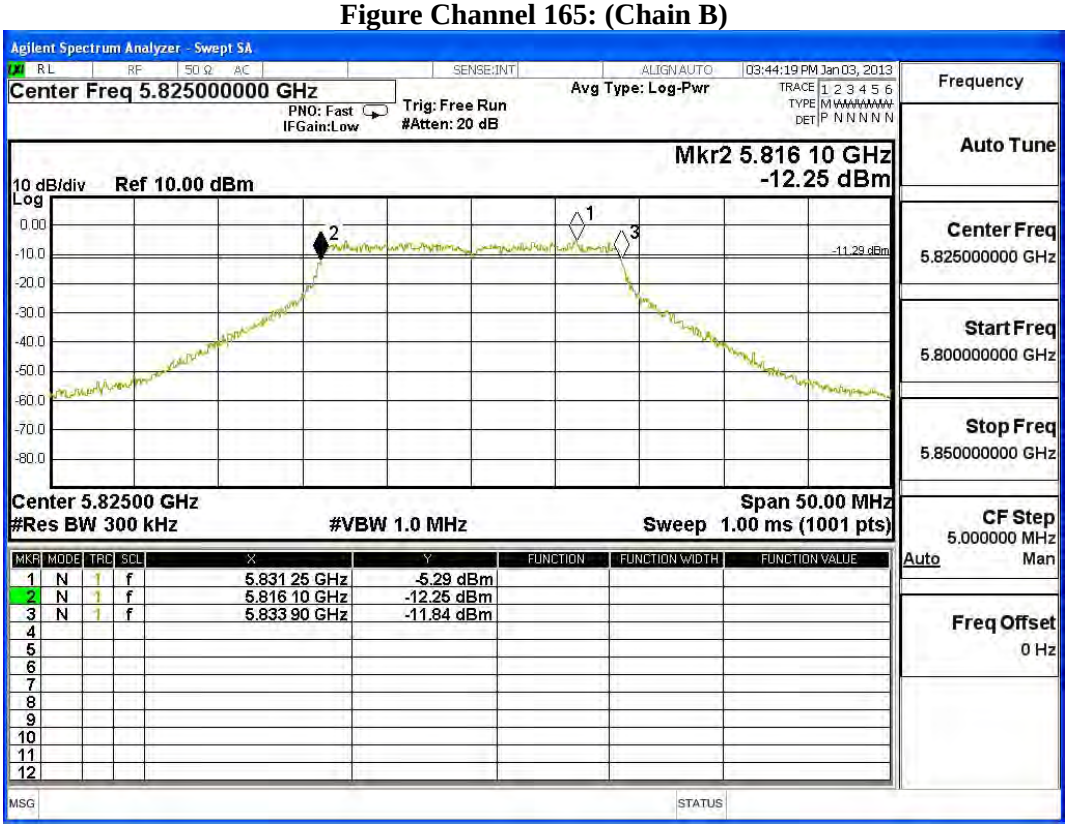
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17850	>500	Pass

Figure Channel 165: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
165	5825.00	17800	>500	Pass

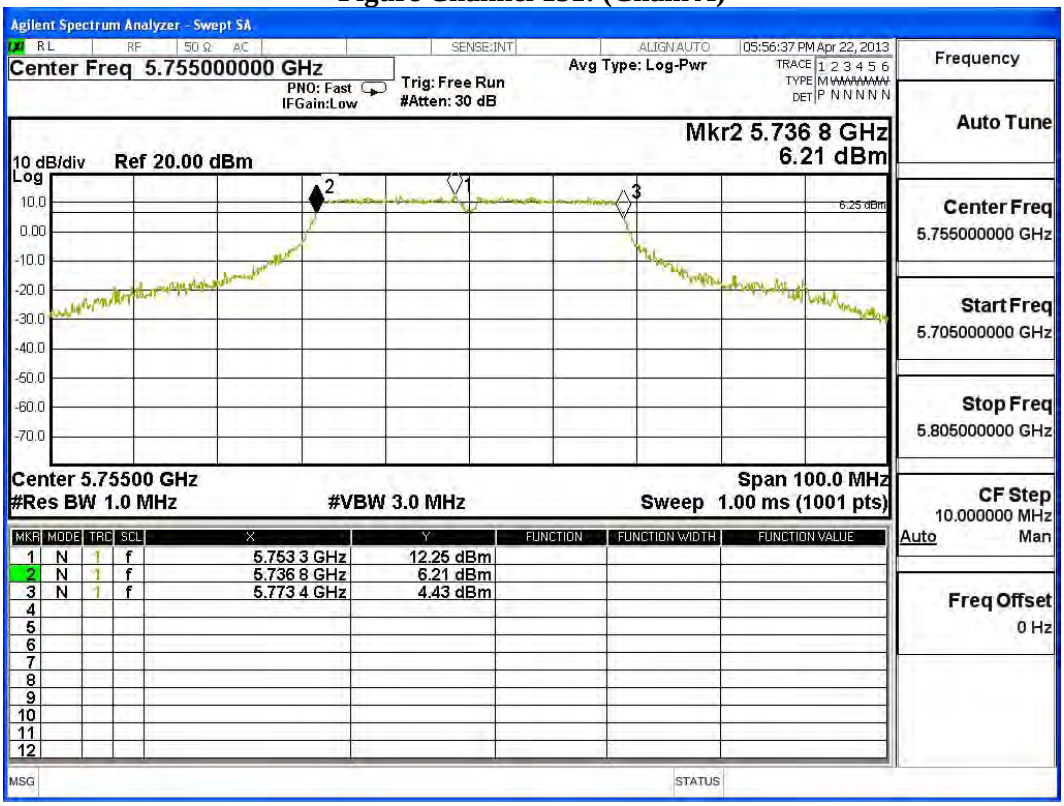
Figure Channel 165: (Chain B)



Product : WiFi AP
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

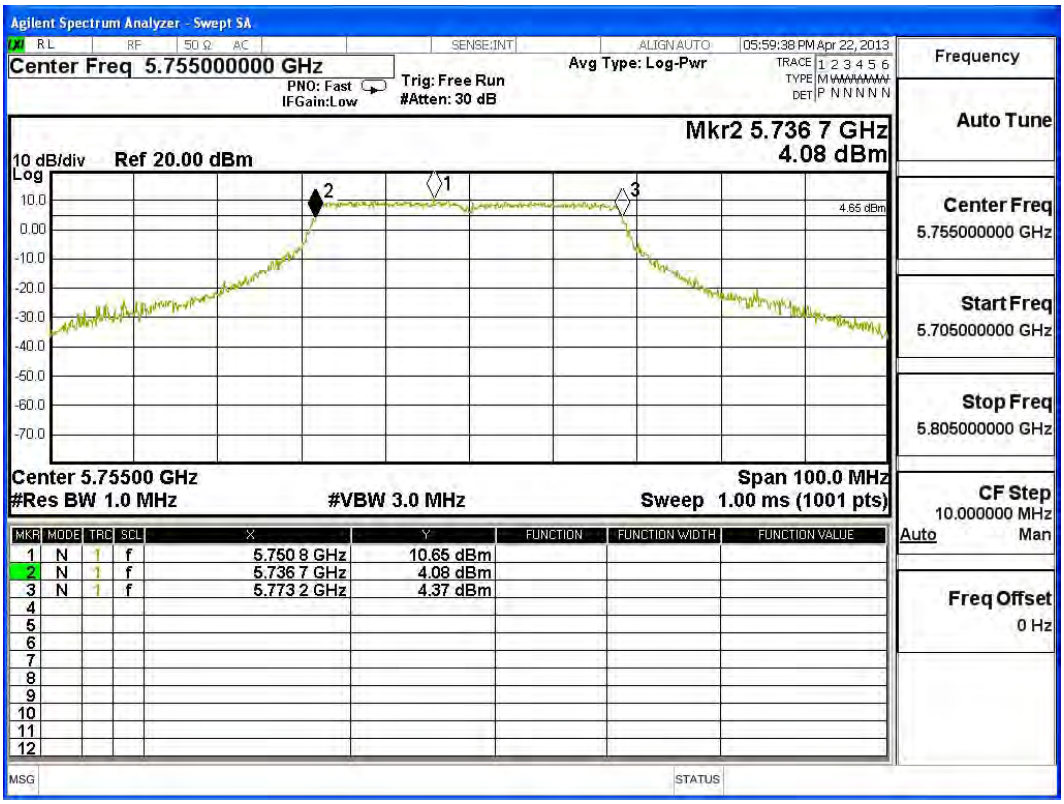
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36600	>500	Pass

Figure Channel 151: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
151	5755.00	36500	>500	Pass

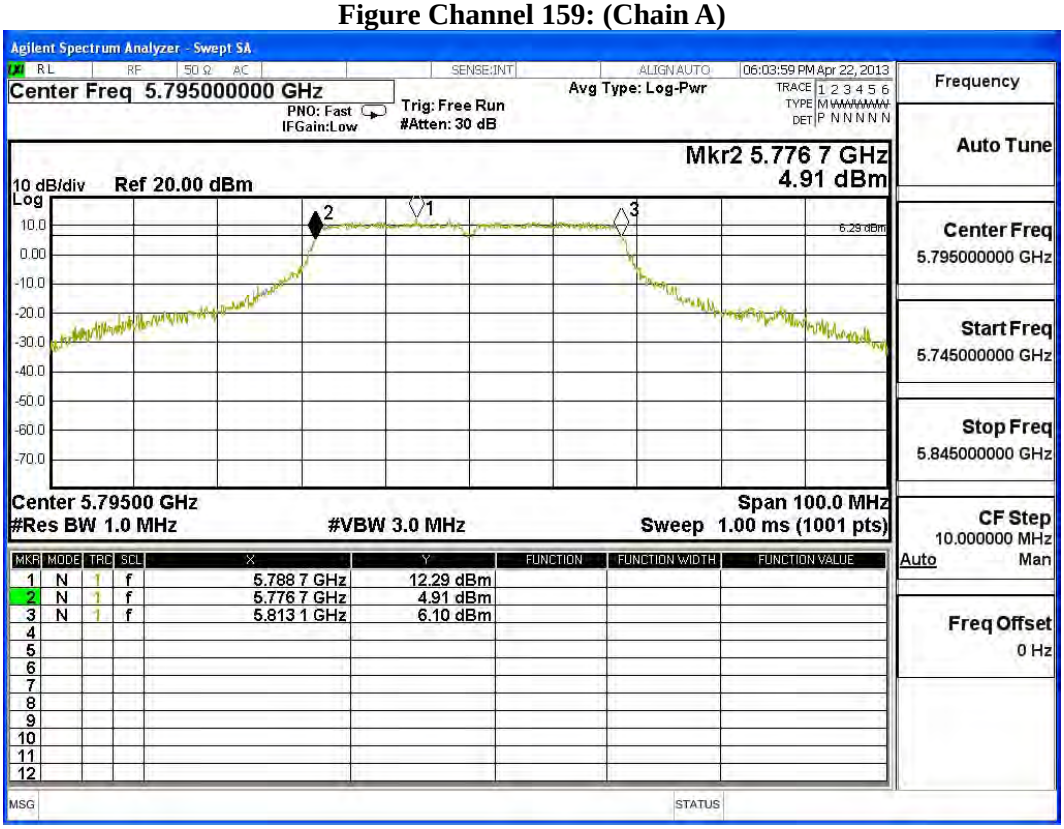
Figure Channel 151: (Chain B)



Product : WiFi AP
Test Item : Occupied Bandwidth Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5795MHz)

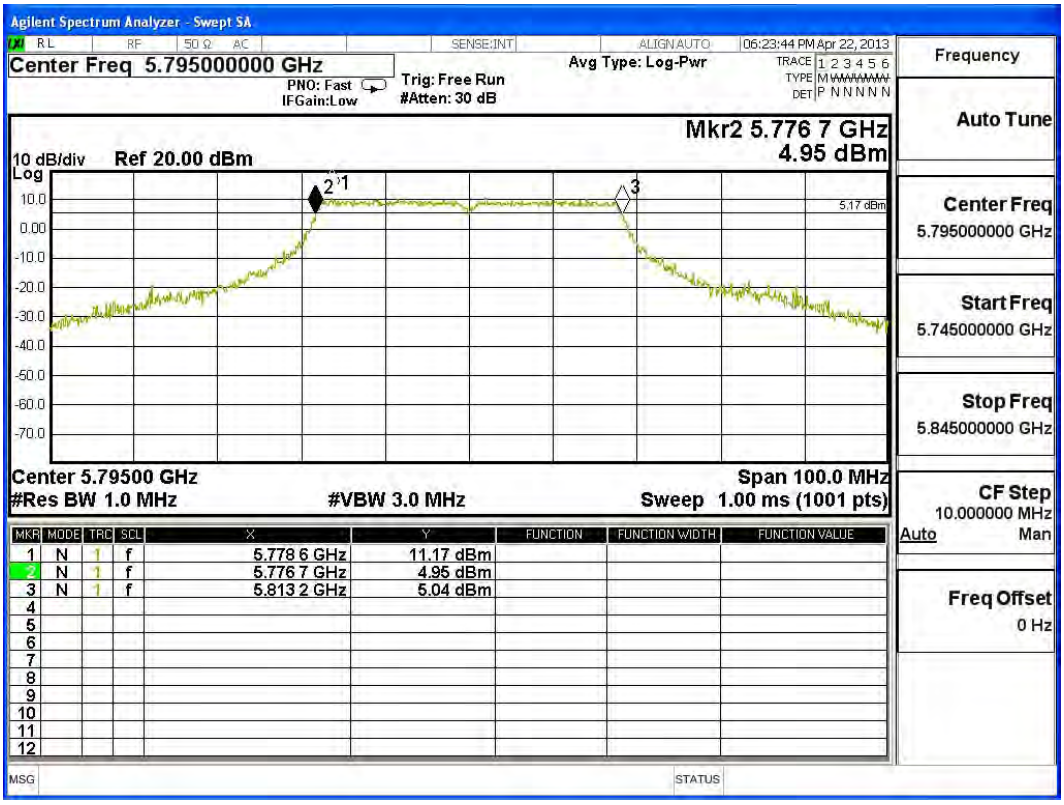
Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	36400	>500	Pass

Figure Channel 159: (Chain A)



Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
159	5795.00	36500	>500	Pass

Figure Channel 159: (Chain B)



8. Power Density

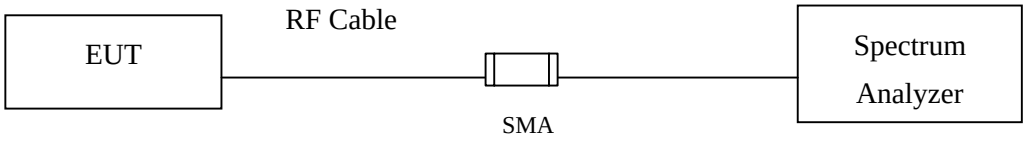
8.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2012
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2012
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2013

Note:

1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with "X" are used to measure the final test results.

8.2. Test Setup



8.3. Limits

The transmitted power density averaged over any 1 second interval shall not be greater +8dBm in any 3kHz bandwidth.

8.4. Test Procedure

The EUT was setup according to ANSI C63.10: 2009; tested according to DTS test procedure of ANSI C63.10: 2009 for compliance to FCC 47CFR 15.247 requirements.
Set RBW= 100 kHz, VBW≥300KHz, SPAN to 5-30 % greater than the EBW,
Scale the observed power level to an equivalent value in 3 kHz by adjusting (reducing) the measured power by a bandwidth correction factor (BWCF) where BWCF = 10log (3 kHz/100 kHz = -15.2 dB).

8.5. Uncertainty

± 1.27 dB

8.6. Test Result of Power Density

Product : WiFi AP
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5745MHz)

Channel No.	Frequency (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
149	5745.00	-8.368	-9.901	-6.057	<8dBm	Pass

Note: Power Density Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 149: (Chain A)

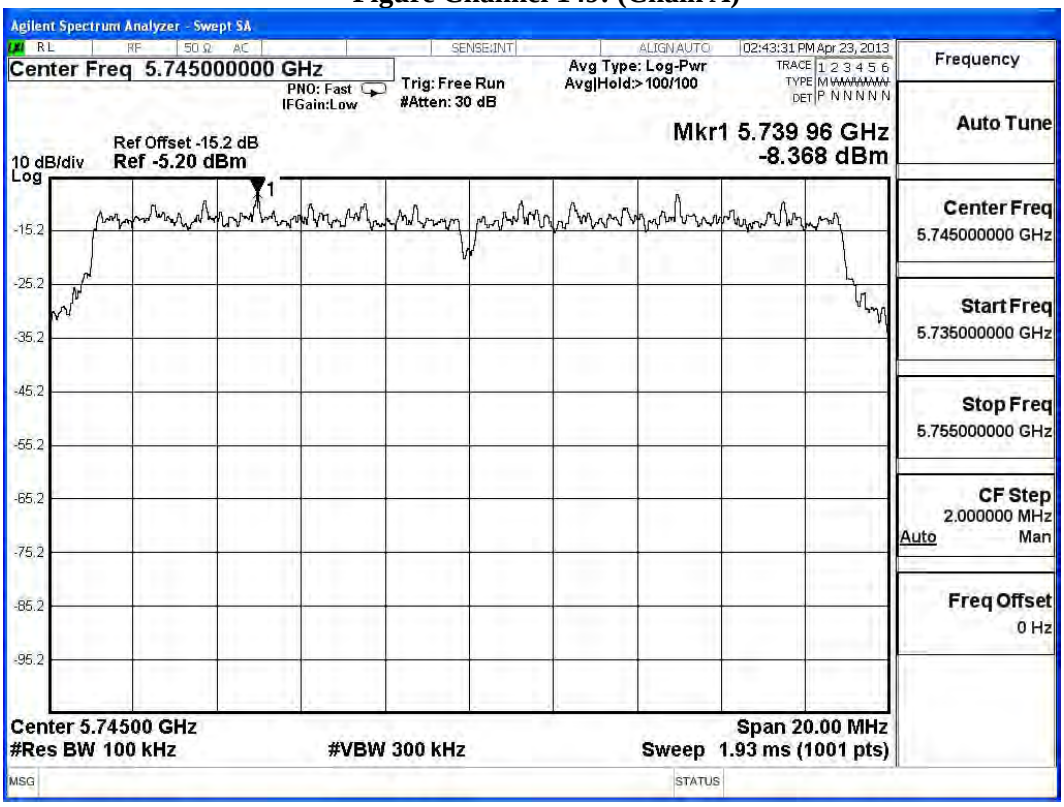
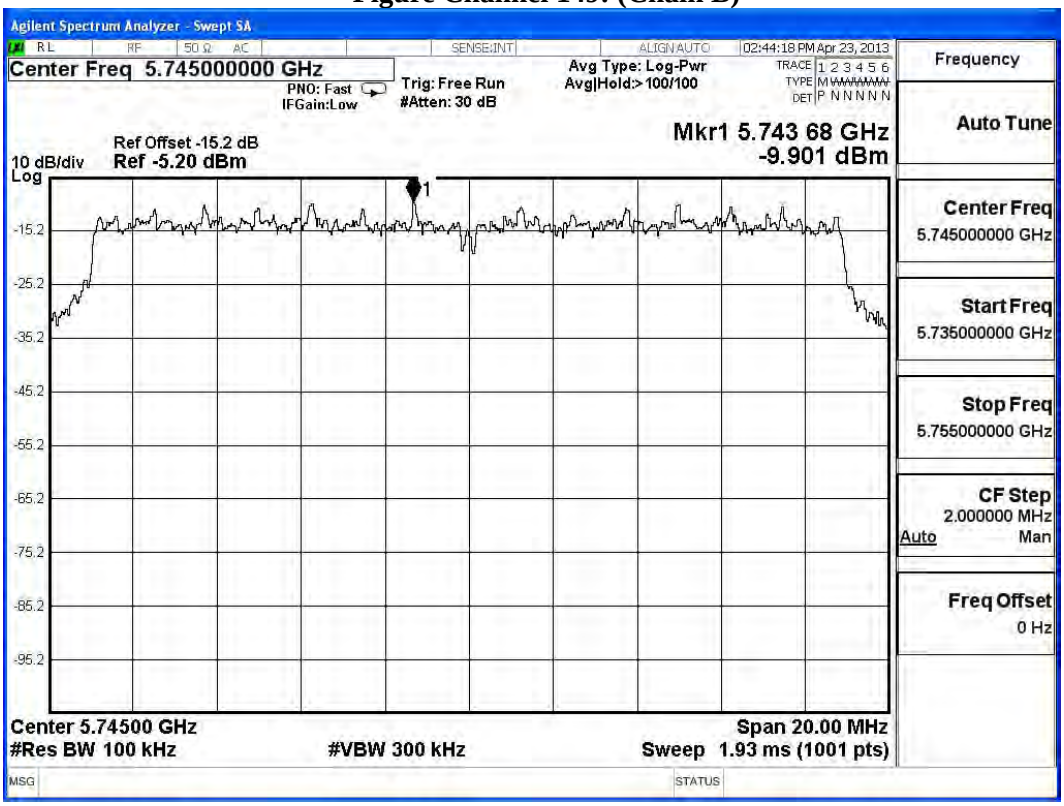


Figure Channel 149: (Chain B)



Product : WiFi AP
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5785MHz)

Channel No.	Frequency (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
157	5785.000	-8.615	-10.623	-6.494	< 8dBm	Pass

Note: Power Density Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 157: (Chain A)

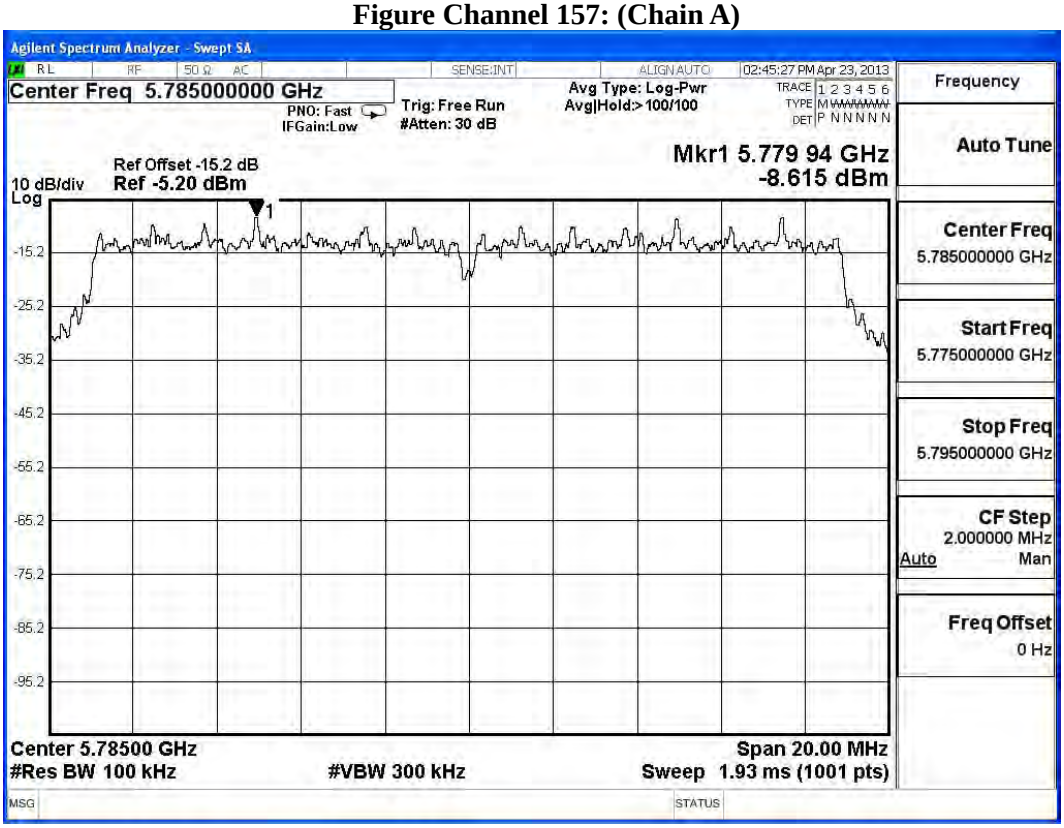
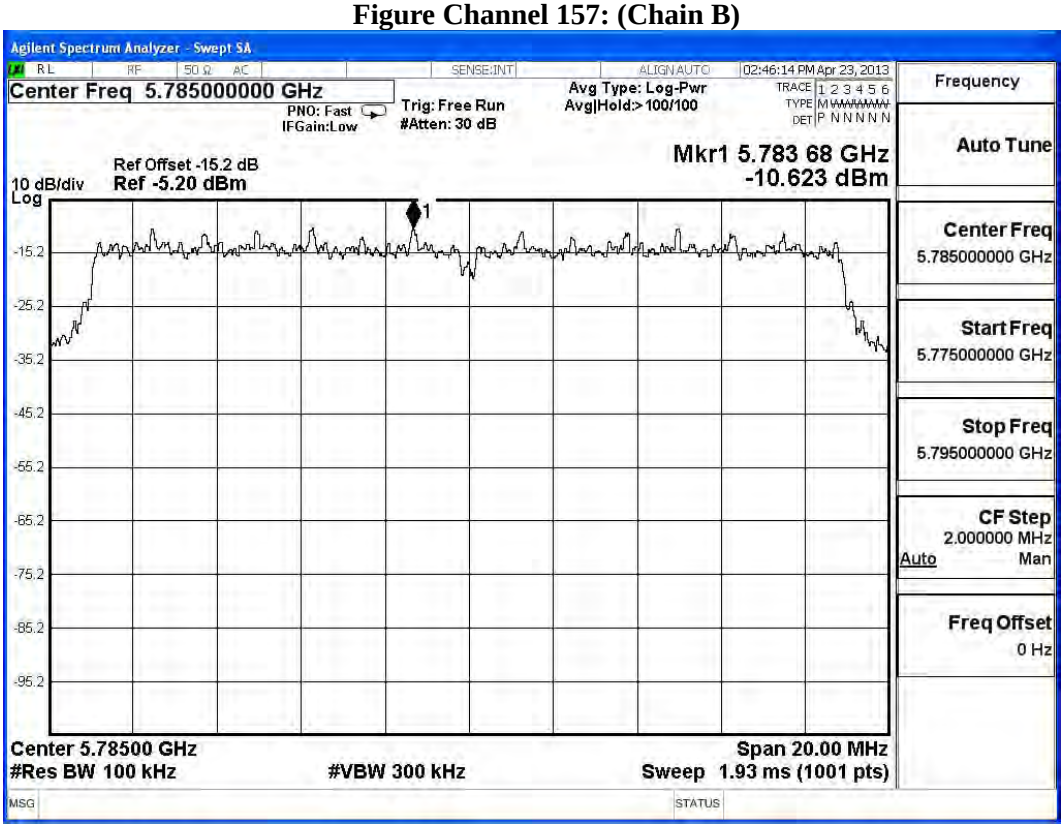


Figure Channel 157: (Chain B)



Product : WiFi AP
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 1: Transmit - 802.11n-20BW_14.4Mbps(5G Band) (5825MHz)

Channel No.	Frequency (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
165	5825.00	-8.772	-9.792	-6.242	< 8dBm	Pass

Note: Power Density Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 165: (Chain A)

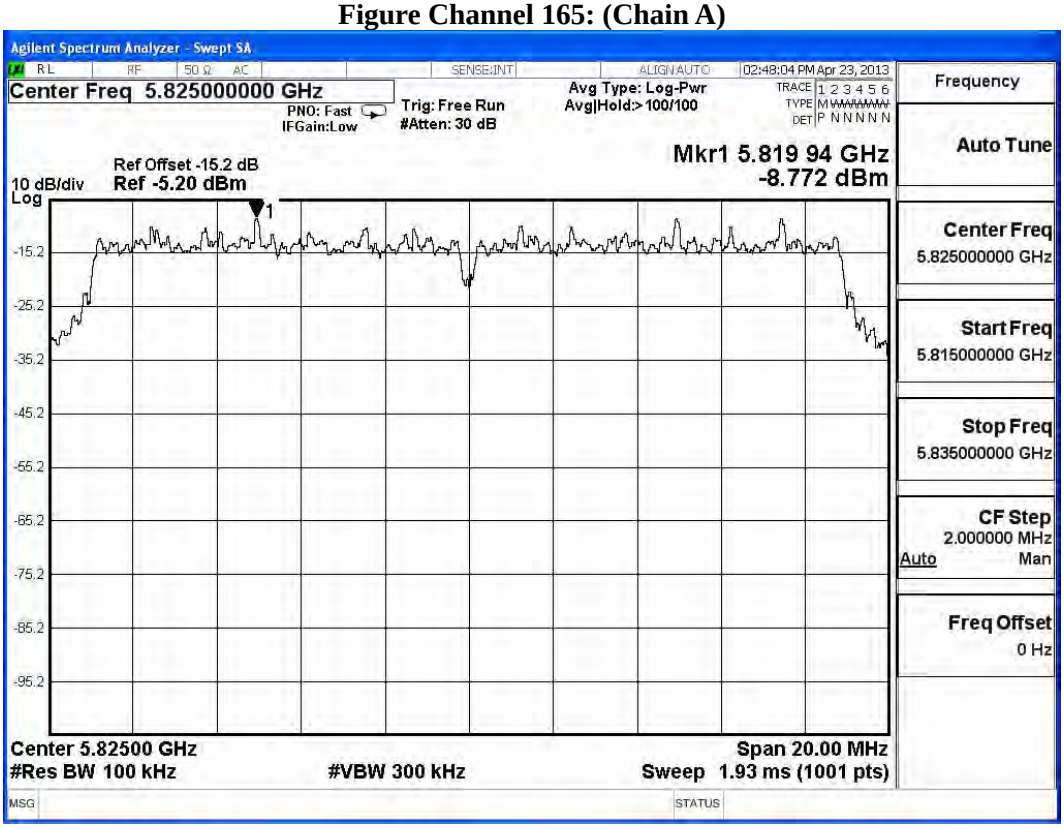
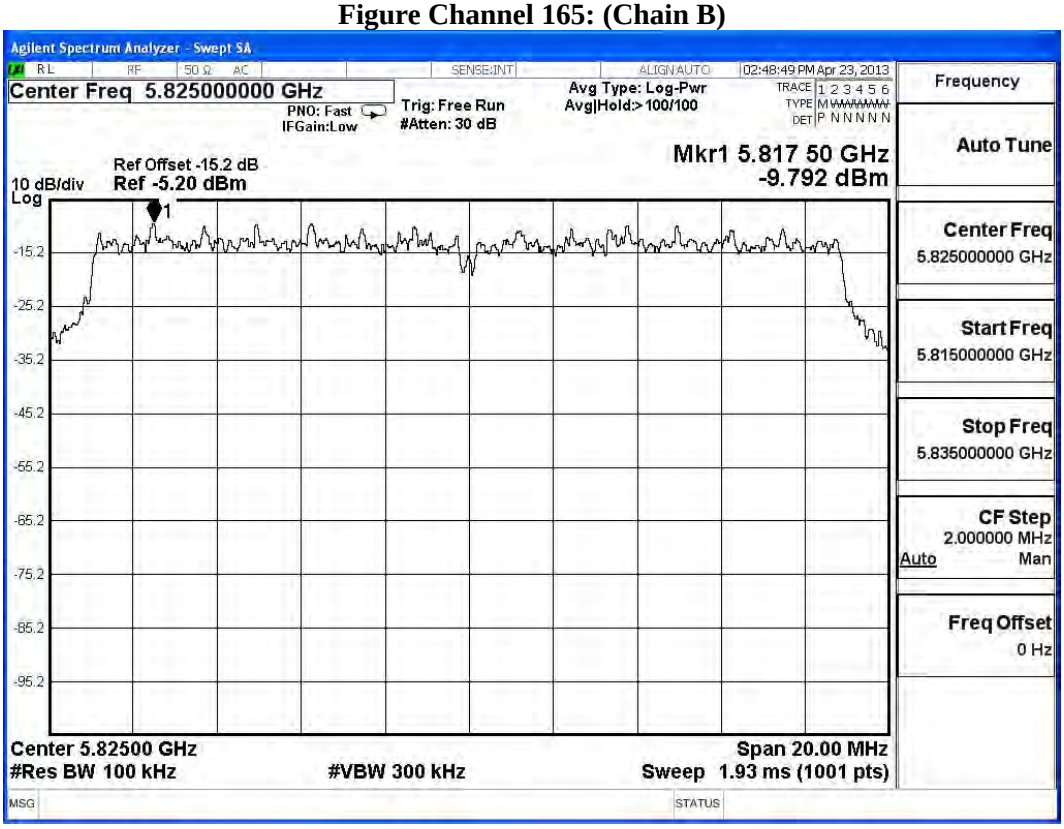


Figure Channel 165: (Chain B)



Product : WiFi AP
Test Item : Power Density Data
Test Site : No.3 OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5755MHz)

Channel No.	Frequency (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
151	5755.00	-10.976	-13.229	-8.948	< 8dBm	Pass

Note: Power Density Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 151: (Chain A)

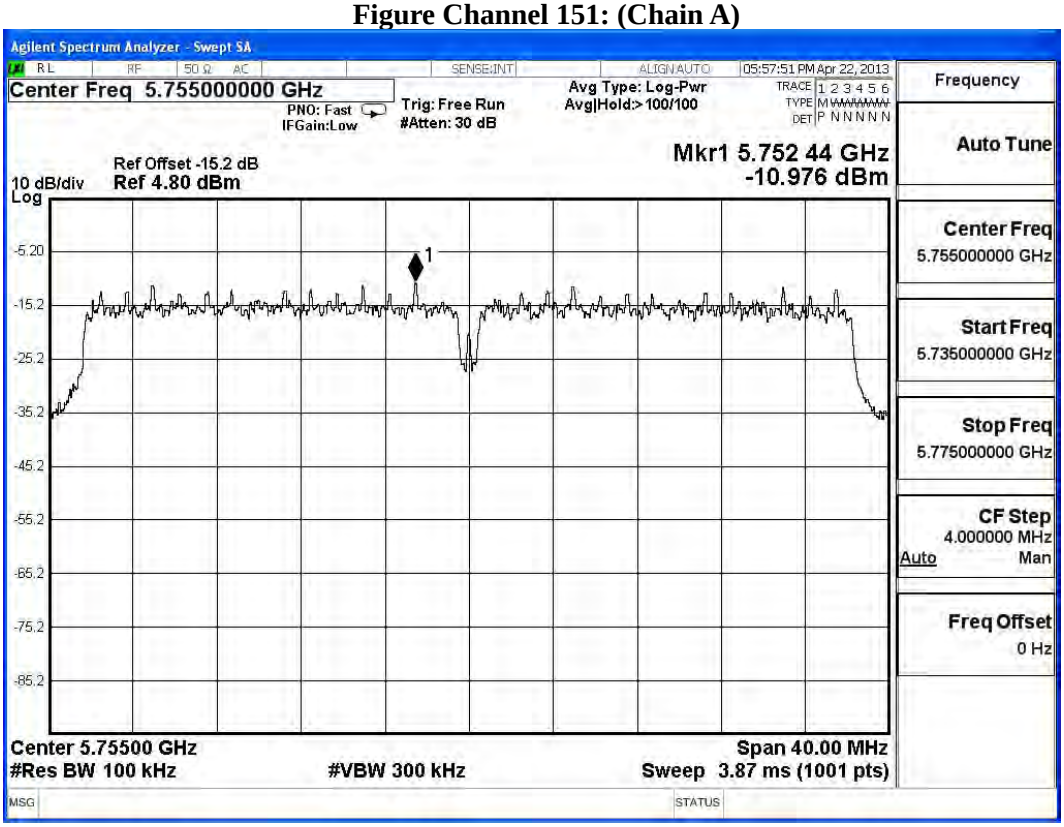
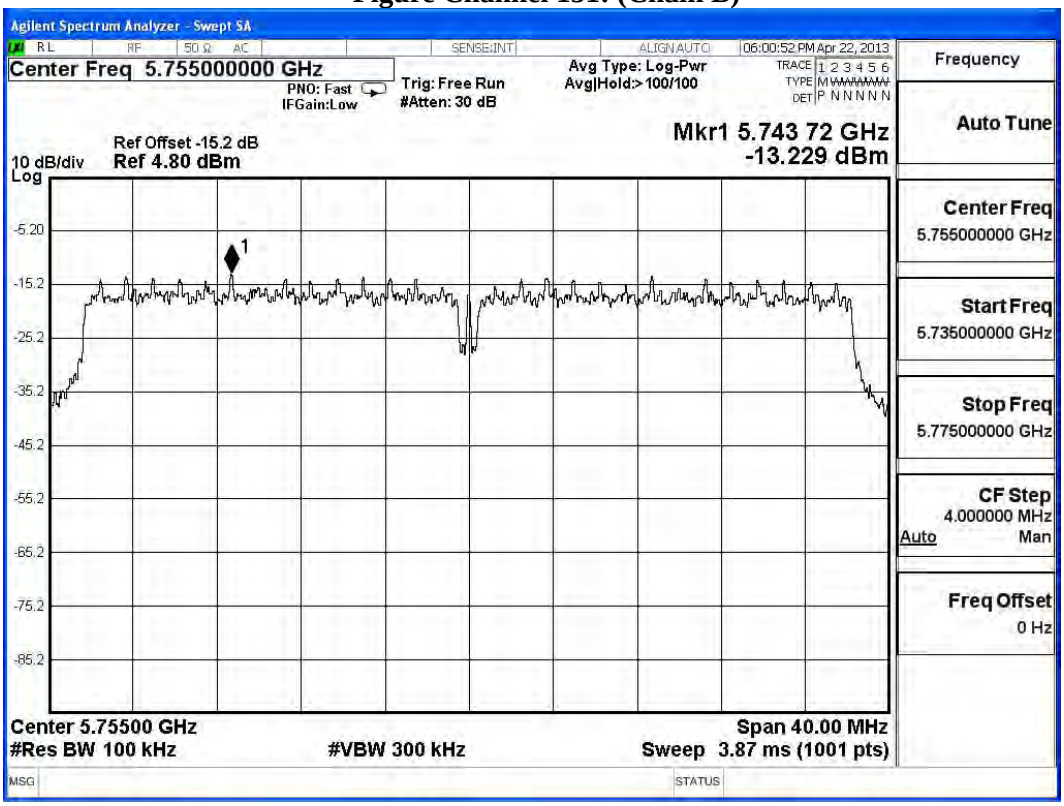


Figure Channel 151: (Chain B)



Product : WiFi AP
Test Item : Power Density Data
Test Site : No.3OATS
Test Mode : Mode 2: Transmit - 802.11n-40BW_30Mbps(5G Band) (5795MHz)

Channel No.	Frequency (MHz)	Chain A Power (dBm)	Chain B Power (dBm)	Chain A+B Power (dBm)	Limit (dBm)	Result
159	5795.000	-11.683	-13.077	-9.314	< 8dBm	Pass

Note: Power Density Value (dBm) = 10*LOG (Chain A (mW)+ Chain B (mW))

Figure Channel 159: (Chain A)

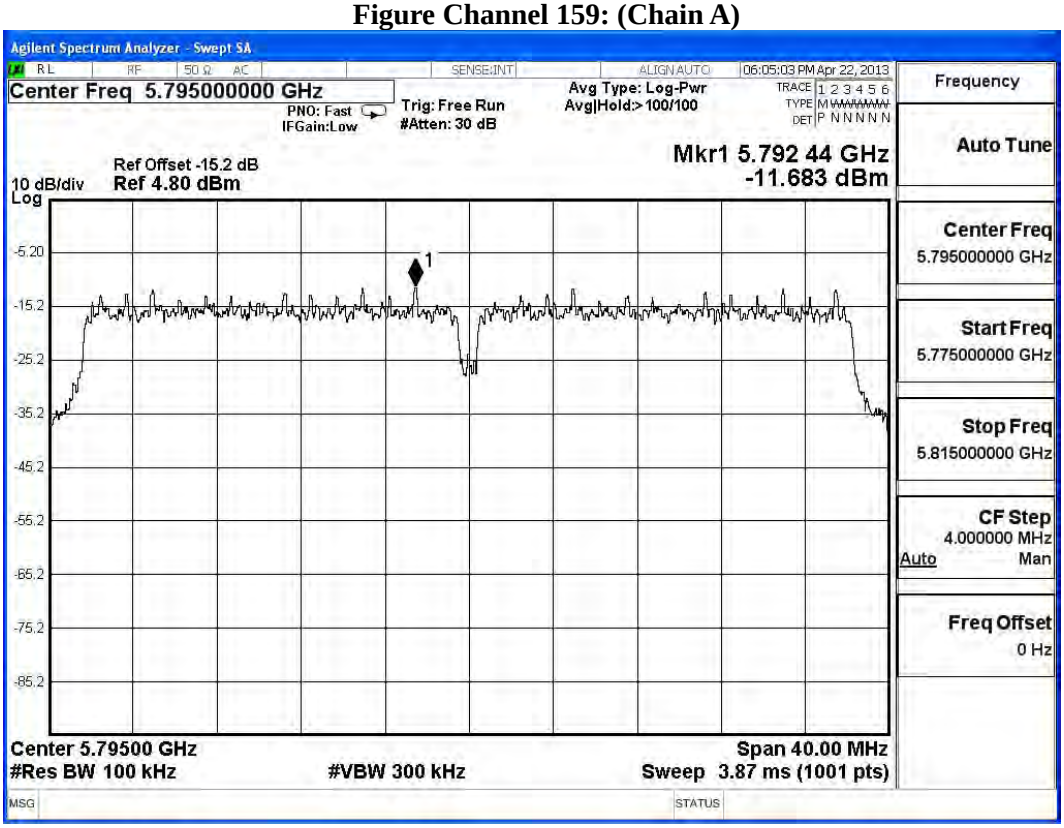
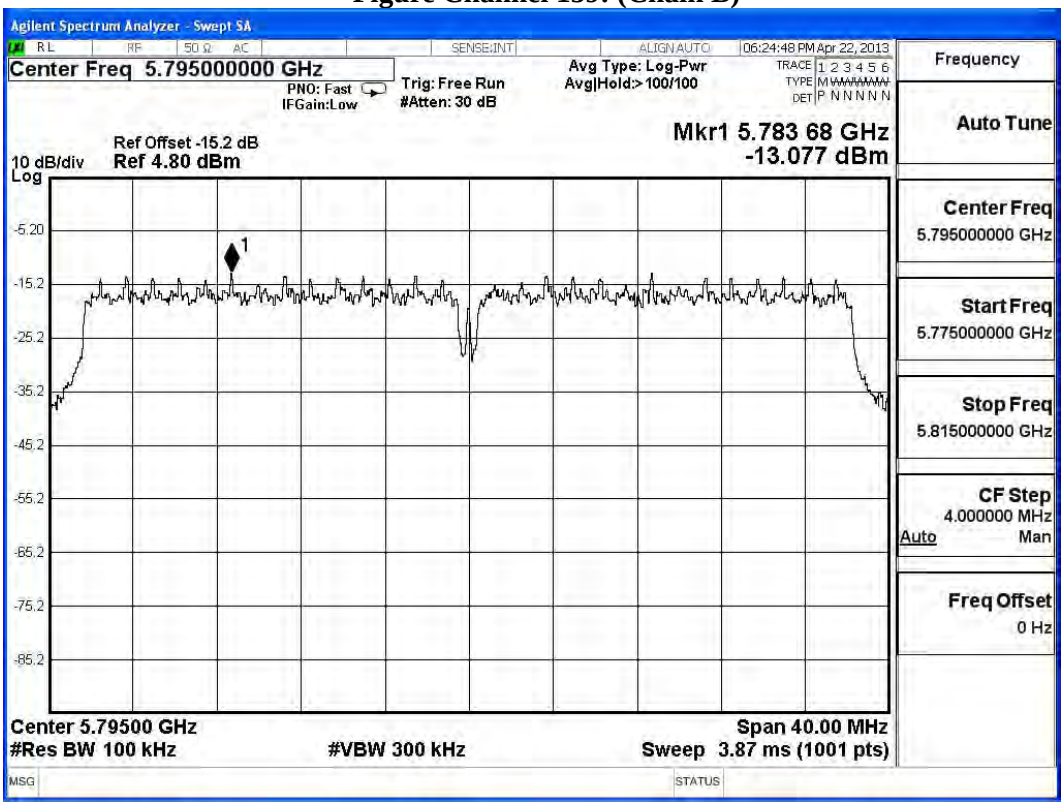


Figure Channel 159: (Chain B)



9. EMI Reduction Method During Compliance Testing

No modification was made during testing.

Attachment 1: EUT Test Photographs

Attachment 1: EUT Test Setup Photographs

Front View of Conducted Test

Back View of Conducted Test

Front View of Radiated Test

Back View of Radiated Test

Front View of Radiated Test (Horn)

Back View of Radiated Test (Horn)

Front View of Radiated Test (Horn)

Back View of Radiated Test (Horn)

Attachment 2: EUT Detailed Photographs

Attachment 2 : EUT Detailed Photographs

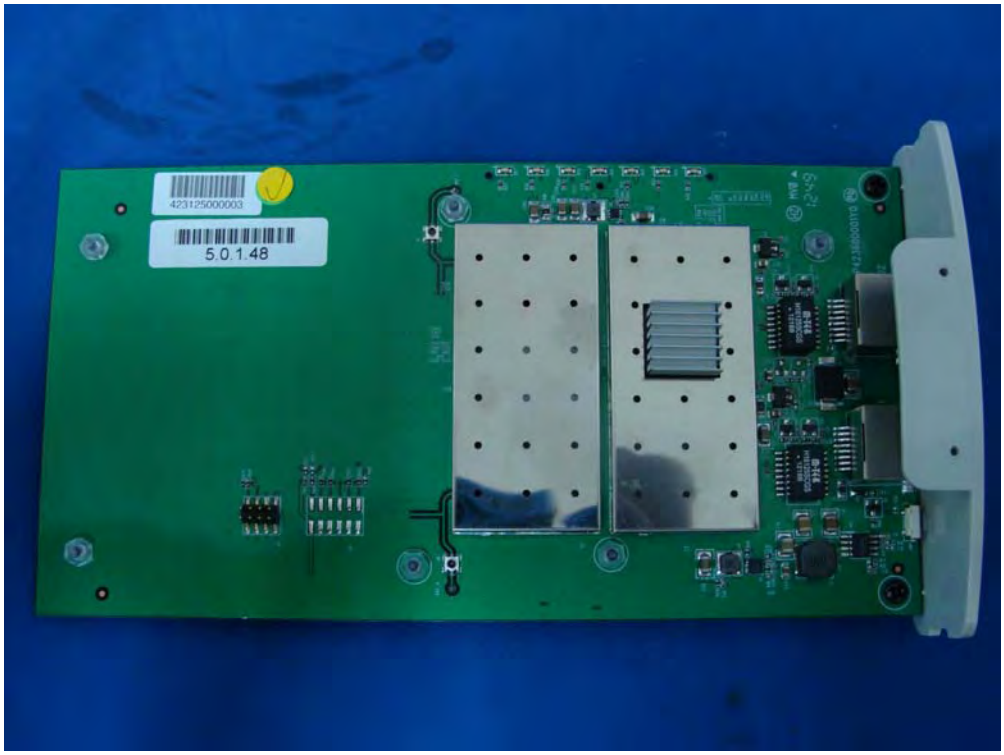
(1) EUT Photo

(2) EUT Photo

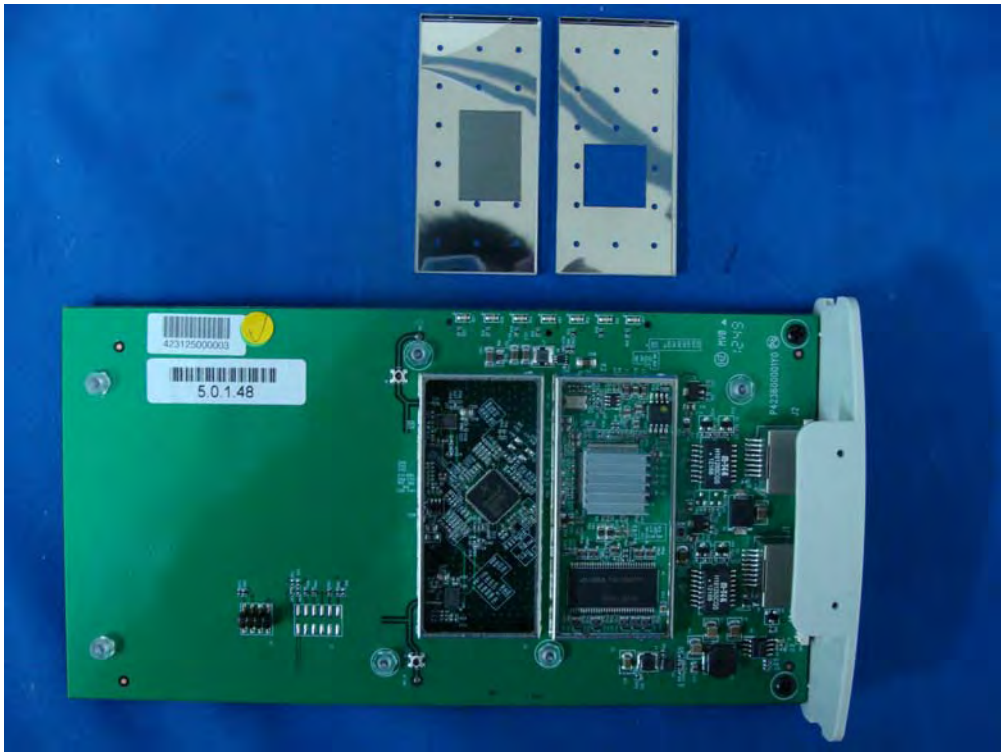
(3) EUT Photo

(4) EUT Photo

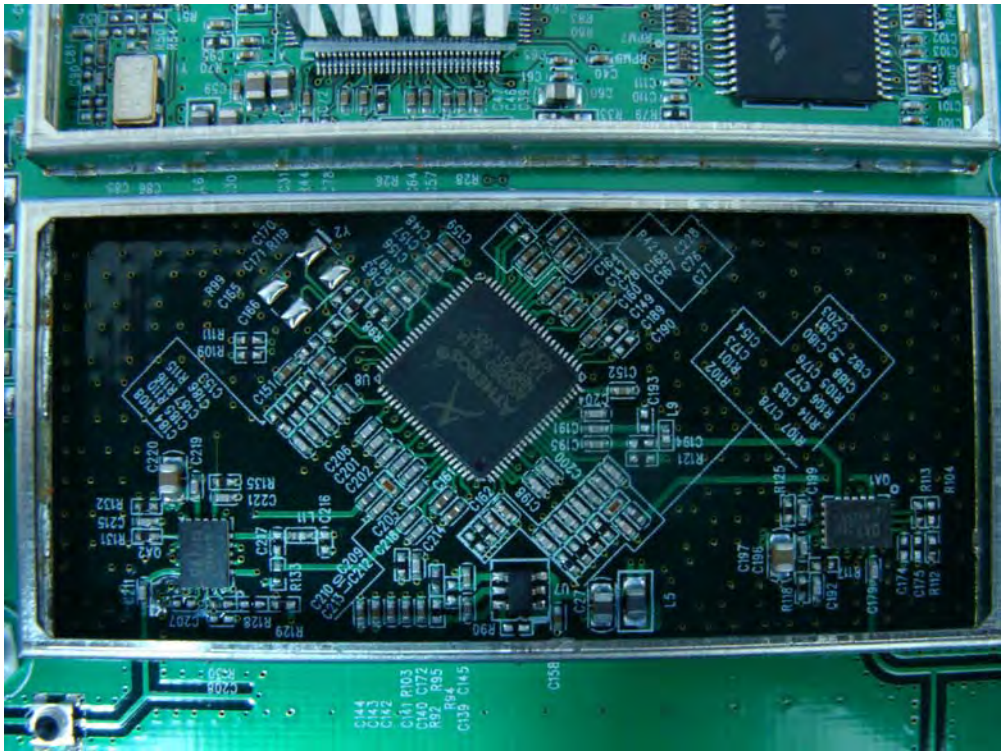
(5) EUT Photo



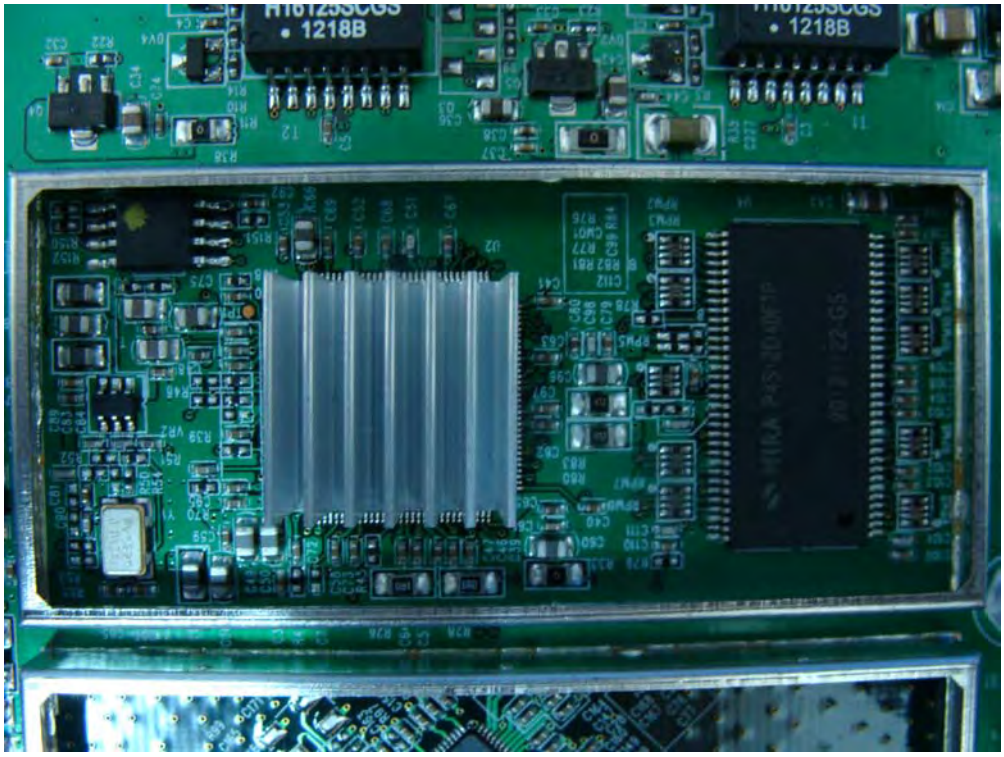
(6) EUT Photo



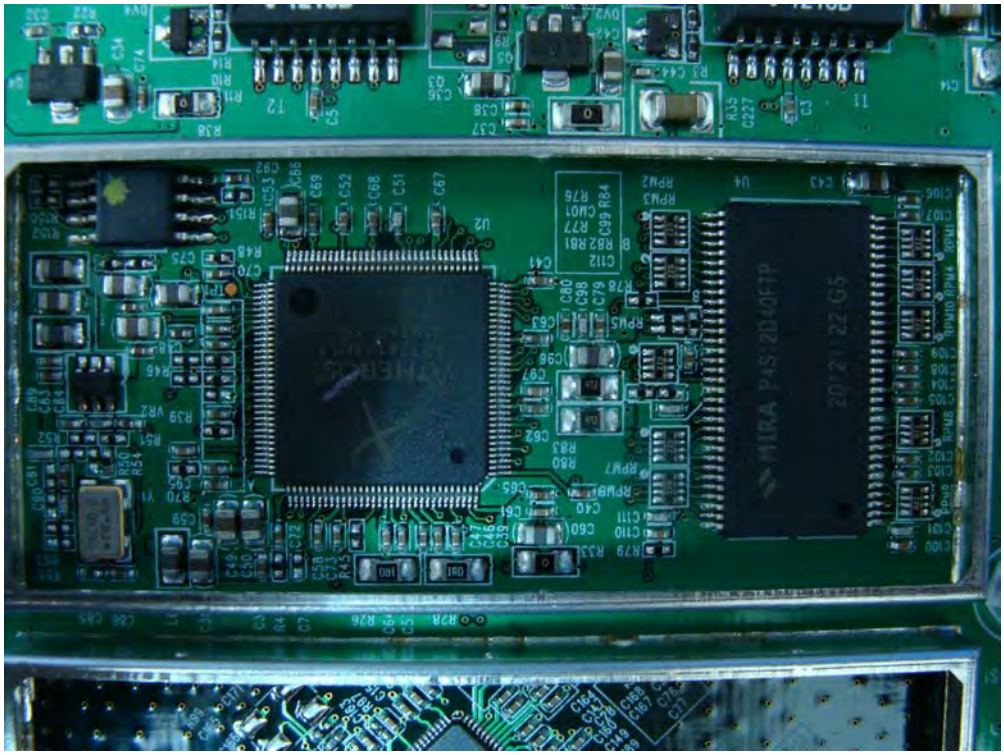
(7) EUT Photo



(8) EUT Photo

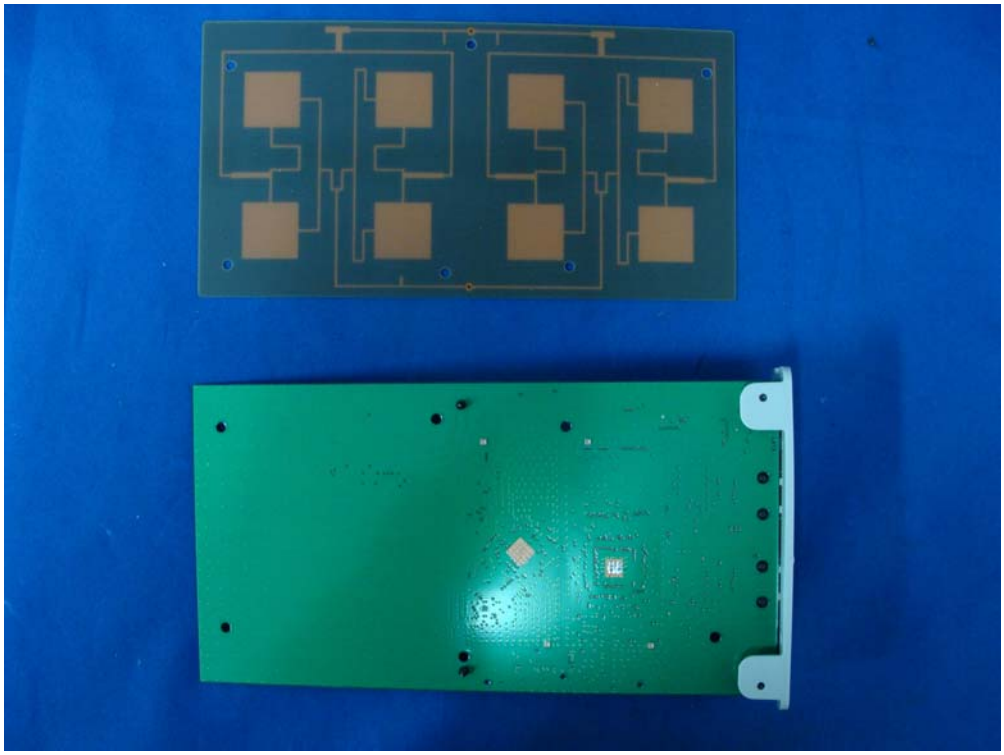


(9) EUT Photo

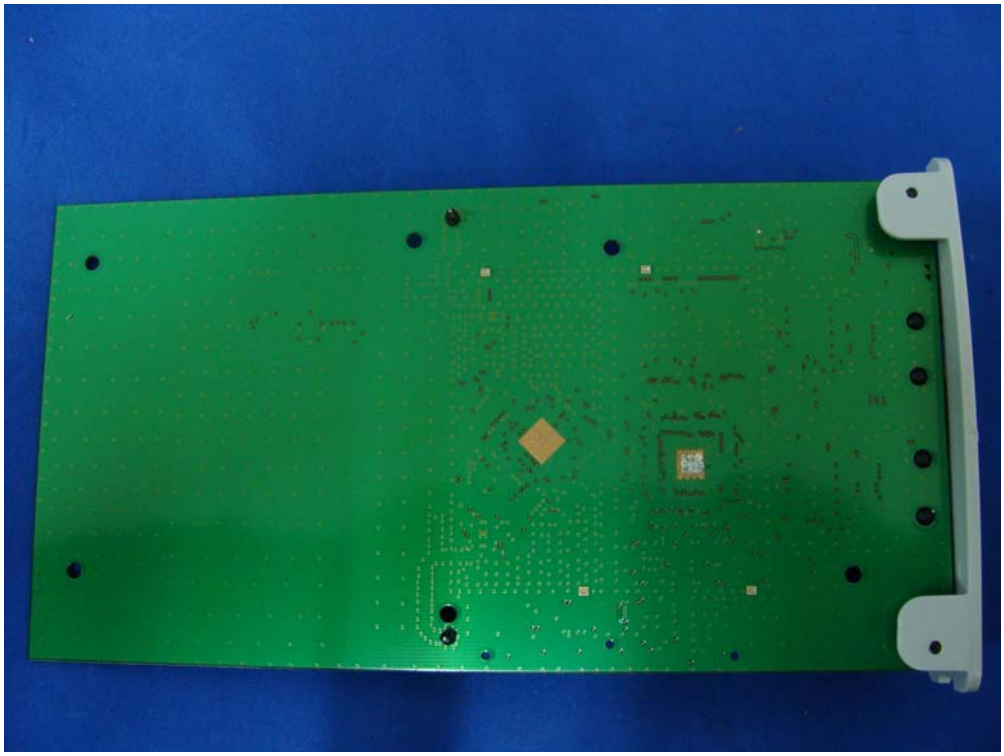


(10) EUT Photo

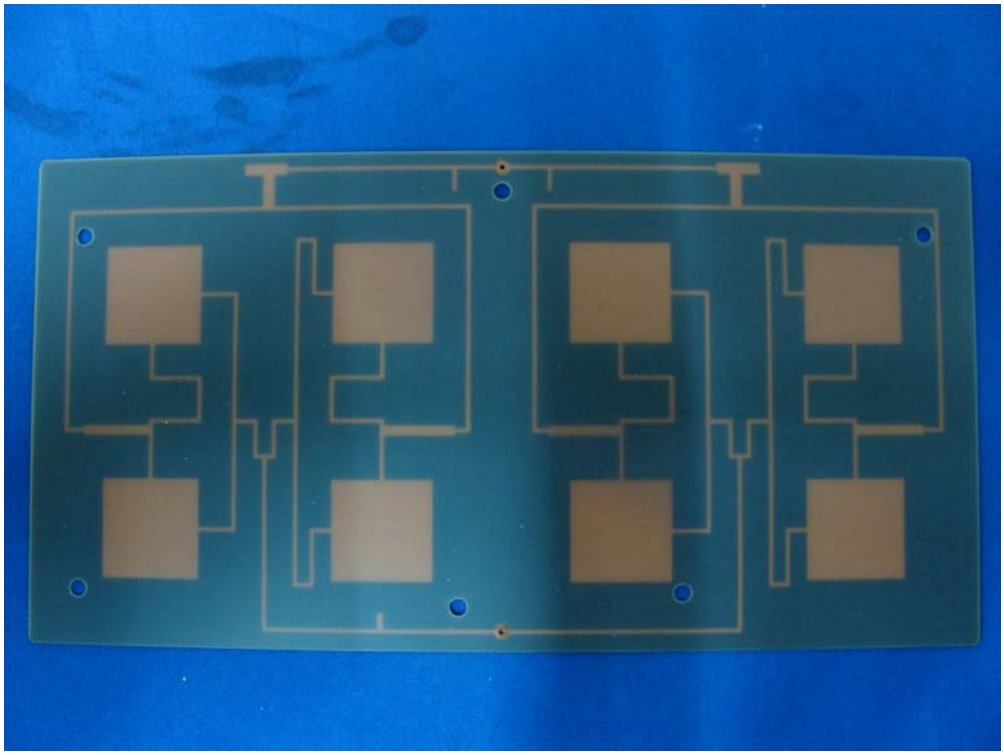
(11) EUT Photo



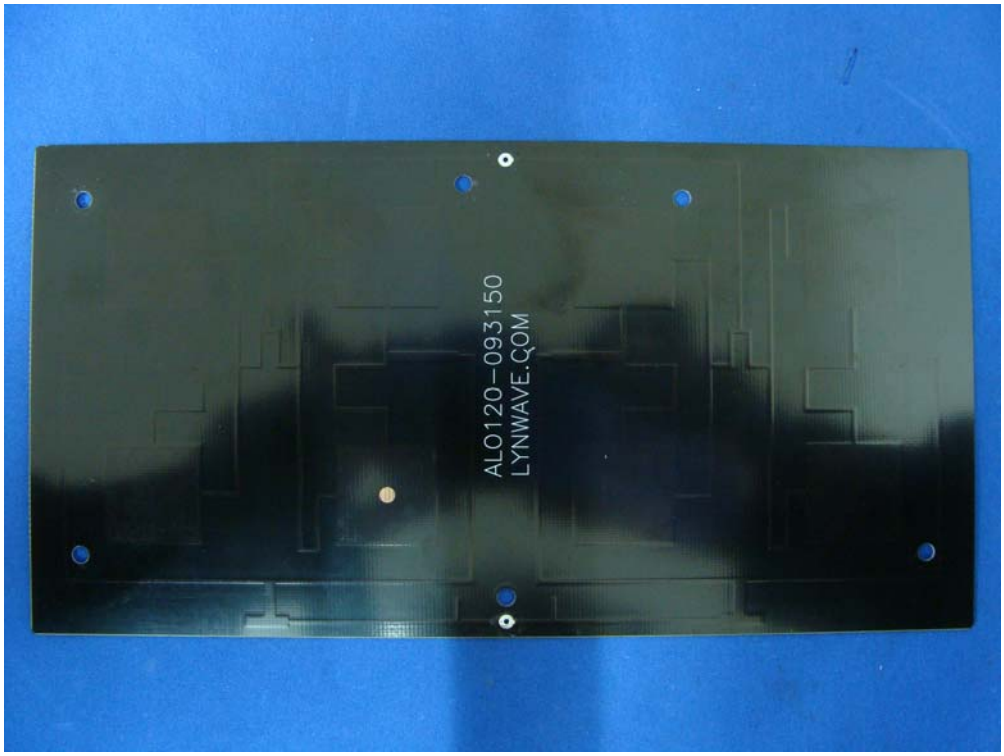
(12) EUT Photo



(13) EUT Photo



(14) EUT Photo



(15) EUT Photo

(16) EUT Photo

(17) EUT Photo (Adapter: GFP121DA-240050HB)

(18) EUT Photo (Adapter: GFP121DA-240050HB)

(19) EUT Photo (Adapter: GFP121DA-240050HB)

(20) EUT Photo (Adapter: GFP241DA-240100HB)

(21) EUT Photo (Adapter: GFP241DA-240100HB)

(22) EUT Photo (Adapter: GFP241DA-240100HB)

(23) EUT Photo