



Test Report

Product Name	ROS Home Center
Model No	ROS-2000
FCC ID	BJM-ROS2000

Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.

Date of Receipt	Jul. 23, 2008
Issued Date	Aug. 11, 2008
Report No.	087373R-RFUSP09V01
Version	V1.0

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

Test Report Certification

Issued Date: Aug. 11, 2008

Report No.: 087373R-RFUSP09V01



Product Name	ROS Home Center
Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 104, R.O.C.
Manufacturer	TATUNG CO.
Model No.	ROS-2000
FCC ID.	BJM-ROS2000
Rated Voltage	AC 120V/60Hz
Working Voltage	AC 120V/60Hz
Trade Name	PRODEA
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2007 ANSI C63.4: 2003
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

Documented By :

Genie Chang

(Adm. Specialist / Genie Chang)



Tested By :

Johnson Liao

(Assistant Engineer / Johnson Liao)

Approved By :

Vincent Lin

(Manager / Vincent Lin)



TABLE OF CONTENTS

Description	Page
1. GENERAL INFORMATION	5
1.1. EUT Description.....	5
1.2. Operational Description	7
1.3. Tested System Details.....	8
1.4. Configuration of tested System	8
1.5. EUT Exercise Software	8
1.6. Test Facility	9
2. Conducted Emission.....	10
2.1. Test Equipment.....	10
2.2. Test Setup	10
2.3. Limits	10
2.4. Test Procedure	11
2.5. Uncertainty	11
2.6. Test Result of Conducted Emission.....	12
3. Peak Transmit Power	14
3.1. Test Equipment.....	14
3.2. Test Setup	14
3.3. Limits	15
3.4. Test Procedure	15
3.5. Uncertainty	15
3.6. Test Result of Peak Transmit Power.....	16
4. Peak Power Spectral Density.....	32
4.1. Test Equipment.....	32
4.2. Test Setup	32
4.3. Limits	32
4.4. Test Procedure	32
4.5. Uncertainty	32
4.6. Test Result of Peak Power Spectral Density	33
5. Peak Excursion	43
5.1. Test Equipment.....	43
5.2. Test Setup	43
5.3. Limits	43
5.4. Test Procedure	43
5.5. Uncertainty	43
5.6. Test Result of Peak Excursion.....	44
6. Undesirable Emission.....	54
6.1. Test Equipment.....	54
6.2. Test Setup	54
6.3. Limits	55
6.4. Test Procedure	55
6.5. Uncertainty	55
6.6. Test Result of Undesirable Emission.....	56

7.	Radiated Emission.....	68
7.1.	Test Equipment.....	68
7.2.	Test Setup	68
7.3.	Limits	69
7.4.	Test Procedure	69
7.5.	Uncertainty	69
7.6.	Test Result of Radiated Emission.....	70
8.	Band Edge	89
8.1.	Test Equipment.....	89
8.2.	Test Setup	89
8.3.	Limits	90
8.4.	Test Procedure	90
8.5.	Uncertainty	90
8.6.	Test Result of Band Edge	91
9.	Frequency Stability.....	103
9.1.	Test Equipment.....	103
9.2.	Test Setup	103
9.3.	Limits	103
9.4.	Test Procedure	103
9.5.	Uncertainty	103
9.6.	Test Result of Frequency Stability.....	104
10.	EMI Reduction Method During Compliance Testing	109
Attachment 1: EUT Test Photographs		
Attachment 2: EUT Detailed Photographs		

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ROS Home Center
Trade Name	PRODEA
FCC ID.	BJM-ROS2000
Model No.	ROS-2000
Frequency Range	2412-2472MHz, 5180-5240MHz and 5745-5825MHz
Number of Channels	802.11b/g/n-20MHz/n-40MHz: 11, 802.11a/n-20MHz: 9 802.11n-40MHz: 11
Data Speed	802.11b: 11Mbps, 802.11a/g: 54Mbps, 802.11n: 300Mbps
Channel separation	802.11b/g/n-20MHz: 5 MHz, 802.11a/n-20MHz: 20MHz 802.11n-40MHz: 40MHz
Type of Modulation	802.11b:DSSS
Antenna Type	DBPSK, DQPSK, CCK 802.11a/g/n: OFDM BPSK, QPSK, 16QAM, 64QAM
Type of Modulation	DSSS/ OFDM
Antenna type	PIFA
Antenna Gain	Refer to the table “Antenna List”
Power Adapter	MFR: HIPRO, M/N: HP-02040D43 Cable out: No-Shielded, 1.5m with two ferrite cores bonded. Power Cord: Shielded, 1.8m

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	FAVORTRON	E773700186	2.84dBi in 2.4 GHz
		E773700180	1.15dBi in 5GHz
		E773700185	

802.11b/g/n-20MHz Center Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 01:	2412 MHz	Channel 02:	2417 MHz	Channel 03:	2422 MHz	Channel 04:	2427 MHz
Channel 05:	2432 MHz	Channel 06:	2437 MHz	Channel 07:	2442 MHz	Channel 08:	2447 MHz
Channel 09:	2452 MHz	Channel 10:	2457 MHz	Channel 11:	2462 MHz		

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	5180 MHz	Channel 2:	5200 MHz	Channel 3:	5220 MHz	Channel 4:	5240 MHz
Channel 5:	5745 MHz	Channel 6:	5765 MHz	Channel 7:	5785 MHz	Channel 8:	5805 MHz
Channel 9:	5825 MHz						

802.11n-40MHz (2.4G Band) Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	2422 MHz	Channel 2:	2427 MHz	Channel 3:	2432 MHz	Channel 4:	2437 MHz
Channel 5:	2442 MHz	Channel 6:	2447 MHz	Channel 7:	2452 MHz		

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 1:	5190 MHz	Channel 2:	5230 MHz	Channel 3:	5755 MHz	Channel 4:	5795 MHz

Note:

1. This device is a ROS Home Center with a built-in 2.4GHz and 5GHz WLAN card.
2. Regarding to the operation frequency, the lowest, middle and highest frequency are selected to perform the test. Lowest and highest data rates are tested in each mode. Only worst case is shown in the report. (802.11a is 6Mbps, 802.11n(20BW) is 13.5Mbps and 802.11n(40BW) are 27Mbps)
3. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart E for Unlicensed National Information Infrastructure devices.

1.2. Operational Description

The EUT is a ROS Home Center with a built-in 2.4GHz and 5GHz WLAN card. This device provided four kinds of transmitting speed 1, 2, 5.5 and 11Mbps and the device of RF carrier is DBPSK, DQPSK and CCK (IEEE 802.11b). The device provided of eight kinds of transmitting speed 6, 9, 12, 18, 24, 36, 48 and 54Mbps the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11a/g).

The device provided of eight kinds of transmitting speed 13.5,26,39,52,78,104,117 and 130Mbps in 802.11n(20BW) mode and 27,54,81,108,162,216,243 and 270Mbps(40BW) the device of RF carrier is BPSK, QPSK, 16QAM and 64QAM (IEEE 802.11n).

The device adapts direct sequence spread spectrum modulation. The antenna provides diversity function to improve the receiving function.

This ROS Home Center, compliant with IEEE 802.11b and IEEE 802.11a/g/n, 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. Operation in 2.4GHz Direct Sequence Spread Spectrum (DSSS) radio transmission, the ROS Home Center Wired Equivalent Protection (WEP) algorithm is used. In addition, its standard compliance ensures that it can communicate with any IEEE 802.11b and IEEE 802.11a/g/n network.

Test Mode	Mode 1: Transmitter 802.11a Mode 2: Transmitter 802.11n-20BW_13.5Mbps(5G Band) Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band)
-----------	---

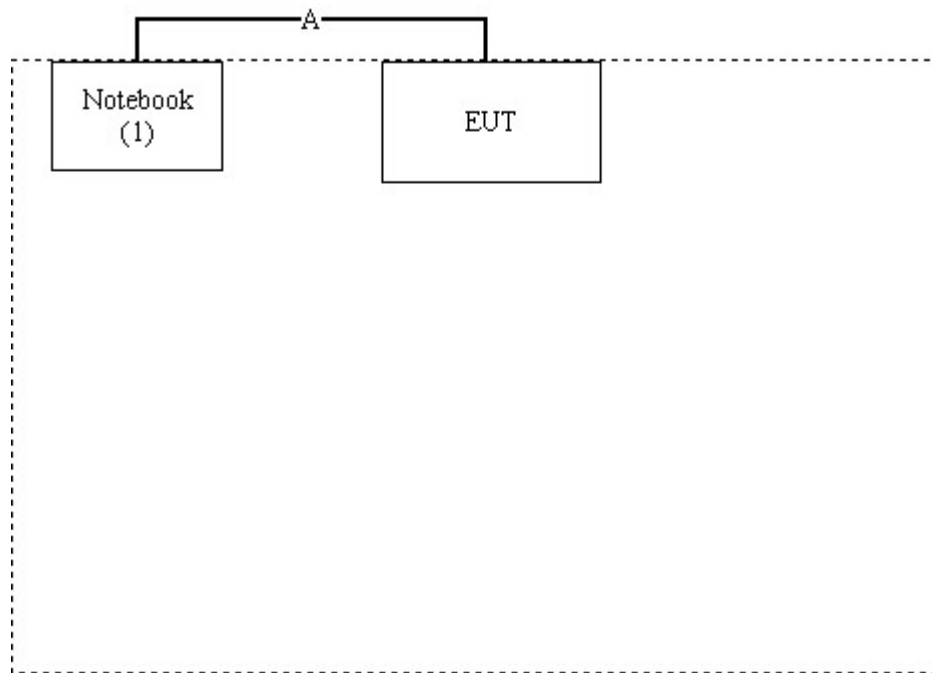
1.3. Tested System Details

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) Notebook PC	DELL	PP04X	2D2ZM1S	Non-Shielded, 0.8m

Signal Cable Type	Signal cable Description
A. LAN Cable	Non-Shielded, 3.0m

1.4. Configuration of tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in Section 1.4
- (2) Execute "Dut Gut.exe" on the EUT.
- (3) Configure the test mode, the test channel, and the data rate.
- (4) Press "OK" to start the continuous receiver.
- (5) 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

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
Site Address: No. 5-22, Ruei-Shu Valley, Ruei-Ping Tsuen,
Lin-Kou Shiang, Taipei,
Taiwan, R.O.C.
TEL: 886-2-8601-3788 / FAX : 886-2-8601-3789
E-Mail : service@quietek.com

FCC Accreditation Number: TW1014



2. Conducted Emission

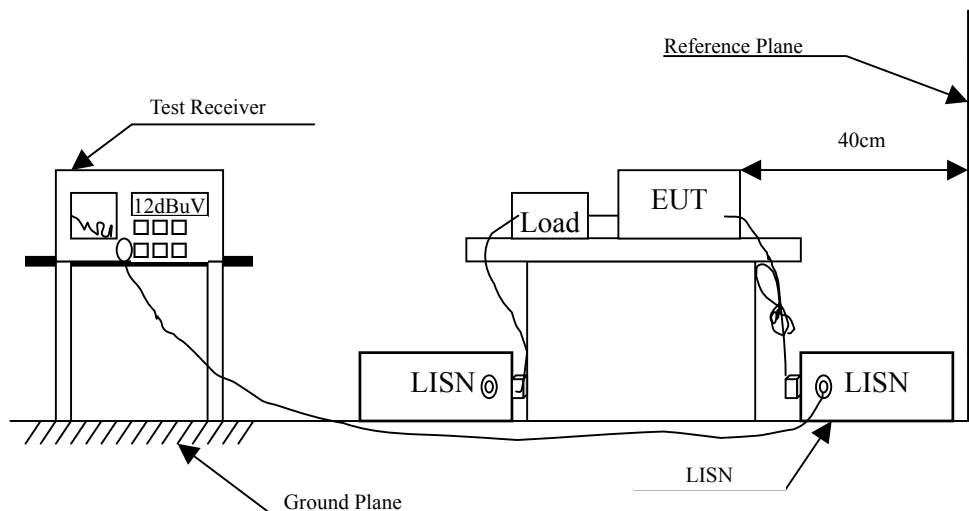
2.1. Test Equipment

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

Item	Instrument	Manufacturer	Type No./Serial No	Last Cal.	Remark
1	Test Receiver	R & S	ESCS 30/825442/17	May, 2008	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2008	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2008	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2008	
5	No.1 Shielded Room			N/A	

Note: All equipments are calibrated every one year.

2.2. Test Setup



2.3. Limits

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

Remarks : In the above table, the tighter limit applies at the band edges.

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 C63.4: 2003 on conducted measurement.

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

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Aug 2002 DA 02-2138 for compliance to FCC 47CFR Subpart E requirements.

2.5. Uncertainty

± 2.26 dB

2.6. Test Result of Conducted Emission

Product : ROS Home Center
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band) (5190MHz)

Frequency MHz	Correct Factor dB	Reading Level dBuV	Measurement Level dBuV	Margin dB	Limit dBuV
LINE 1					
Quasi-Peak					
0.171	9.814	36.310	46.124	-19.276	65.400
0.201	9.824	40.810	50.634	-13.909	64.543
0.261	9.830	35.490	45.320	-17.509	62.829
0.301	9.830	36.530	46.360	-15.326	61.686
0.498	9.820	28.820	38.640	-17.417	56.057
0.901	9.830	27.370	37.200	-18.800	56.000
Average					
0.171	9.814	27.140	36.954	-18.446	55.400
0.201	9.824	32.810	42.634	-11.909	54.543
0.261	9.830	31.330	41.160	-11.669	52.829
0.301	9.830	33.130	42.960	-8.726	51.686
0.498	9.820	17.530	27.350	-18.707	46.057
0.901	9.830	22.120	31.950	-14.050	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
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and data rate.
5. Only worst case is shown in the test mode.

Product : ROS Home Center
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band) (5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.181	9.863	36.260	46.123	-18.991	65.114
0.201	9.860	40.620	50.480	-14.063	64.543
0.261	9.856	35.220	45.076	-17.753	62.829
0.301	9.850	36.870	46.720	-14.966	61.686
0.505	9.830	28.880	38.710	-17.290	56.000
0.603	9.830	29.050	38.880	-17.120	56.000
Average					
0.181	9.863	28.930	38.793	-16.321	55.114
0.201	9.860	32.670	42.530	-12.013	54.543
0.261	9.856	32.140	41.996	-10.833	52.829
0.301	9.850	33.560	43.410	-8.276	51.686
0.505	9.830	16.640	26.470	-19.530	46.000
0.603	9.830	22.320	32.150	-13.850	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
4. Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, antenna ports (if EUT with antenna diversity architecture), and data rate.
5. Only worst case is shown in the test mode.

3. Peak Transmit Power

3.1. Test Equipment

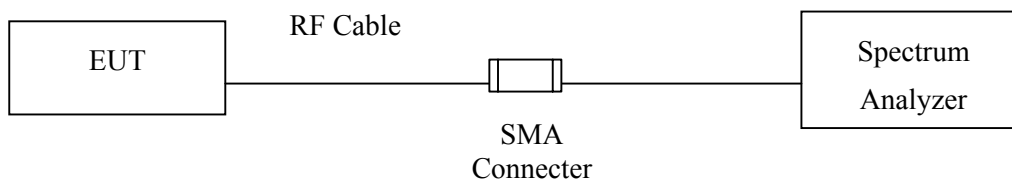
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2008
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2008
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2008
X	Power Sensor	Anritsu	MA2491A/034457	May, 2008

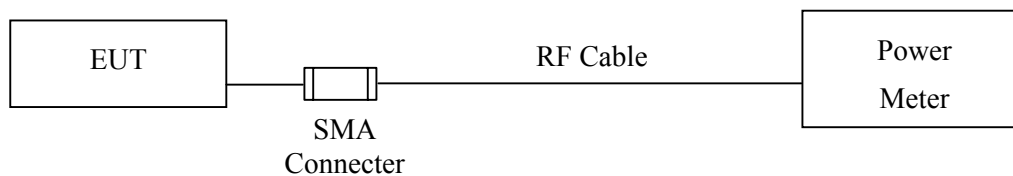
Note: 1. All equipments are calibrated every one year.
2. The test instruments marked by “X” are used to measure the final test results.

3.2. Test Setup

26dBc Occupied Bandwidth



Conduction Power Measurement



3.3. Limits

- (1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or $4 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or $11 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W or $17 \text{ dBm} + 10\log B$, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

3.4. Test Procedur

As an alternative to DA 02-2138, the EUT peak power was measured with a peak power meter employing a video bandwidth greater than 6dB BW of the emission under test. Peak output power was read directly from the meter across all data rates, and across three channels within each sub-band. Special care was used to make sure that the EUT was transmitting in continuous mode. This method exceeds the limitations of DA 02-2138, and provides more accurate measurements.

3.5. Uncertainty

$\pm 1.27 \text{ dB}$

3.6. Test Result of Peak Transmit Power

Product : ROS Home Center
 Test Item : Peak Transmit Power
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11a

Cable loss=1dB		Peak Power Output(dBm)								Required Limit
Channel No.	Frequency (MHz)	Data Rate(Mbps)								
		6	9	12	18	24	36	48	54	
01	5180.00	16.52	--	--	--	--	--	--	--	17dBm
03	5220.00	16.28	16.11	16.25	16.05	15.98	16	16.21	16.16	17dBm
04	5240.00	16.04	--	--	--	--	--	--	--	17dBm

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

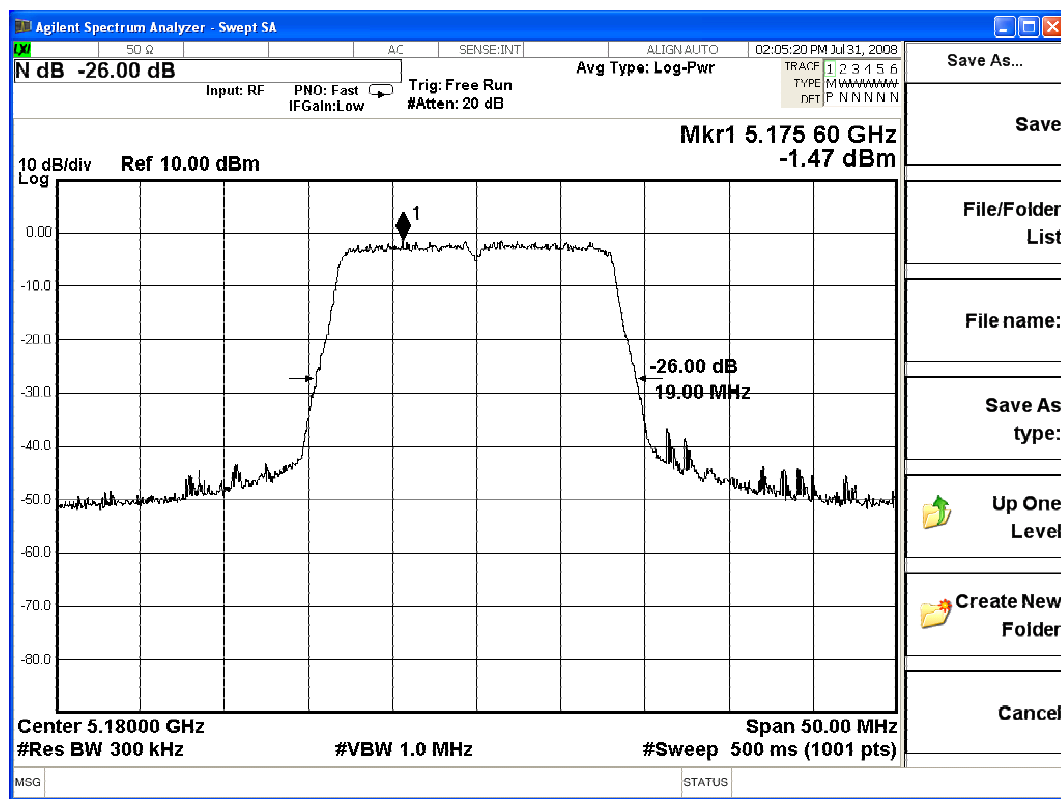
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
01	5180	19.00	16.52

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.00MHz)=16.79dBm	Pass

26dBc Occupied Bandwidth:

Channel 01



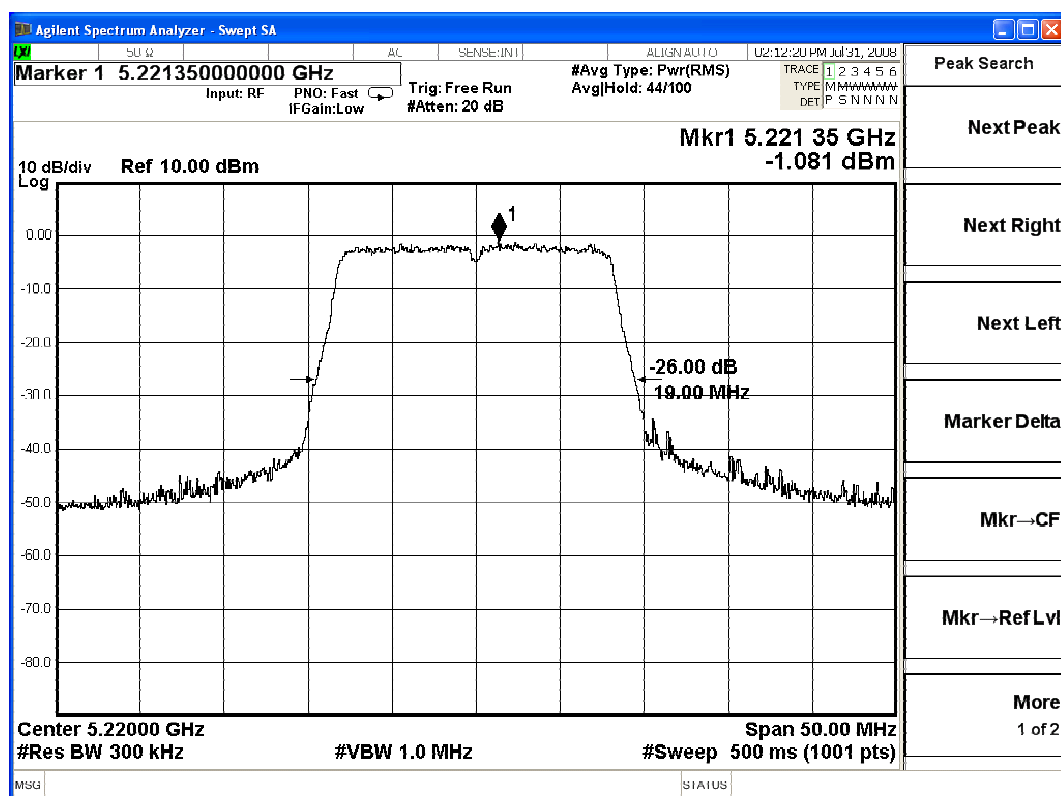
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
03	5220	19.00	16.28

Limits (dBm)	Result
50mW (17dBm) or $4\text{dBm} + 10 \log(B = 19.00\text{MHz}) = 16.79\text{dBm}$	Pass

26dBc Occupied Bandwidth:

Channel 03



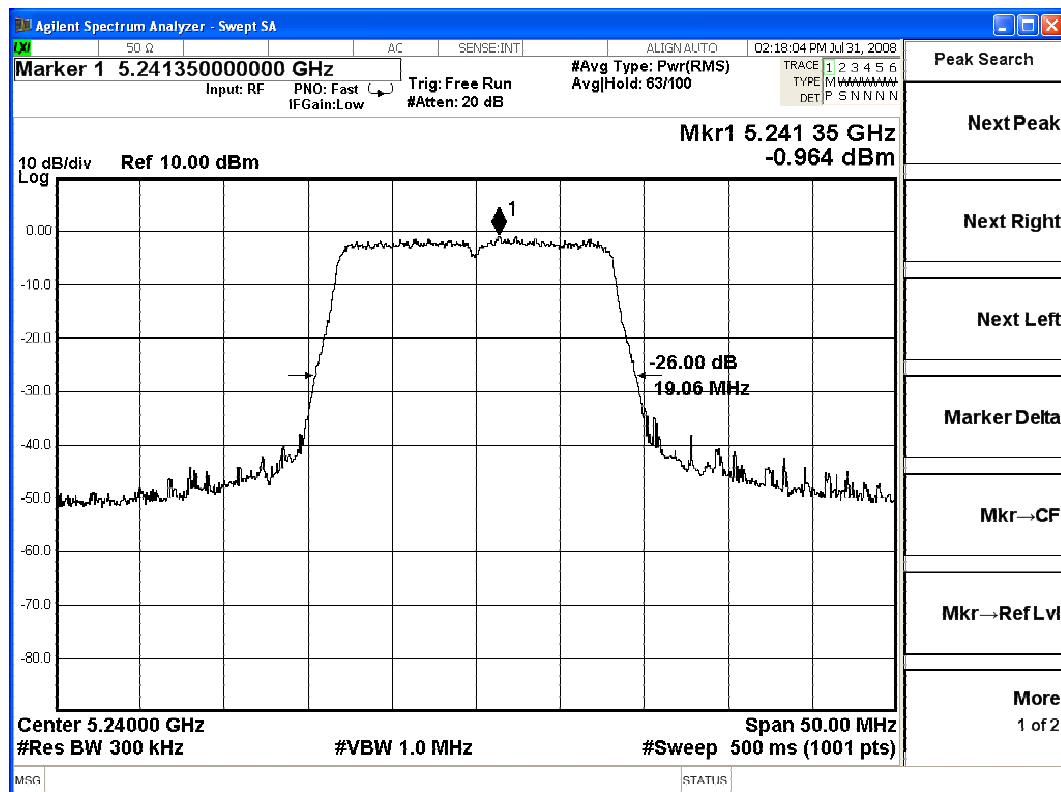
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
04	5240	19.06	16.04

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.06MHz)=16.8dBm	Pass

26dBc Occupied Bandwidth:

Channel 04



Product : ROS Home Center
 Test Item : Peak Transmit Power
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11n-20BW_13.5Mbps(5G Band)

Ant A

Cable loss=1dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate(Mbps)								Required Limit
		13.5	26	39	52	78	104	117	130	
01	5180.00	12.91	--	--	--	--	--	--	--	--
03	5220.00	10.06	10.02	10	9.98	10	9.97	9.99	10	--
04	5240.00	10.05	--	--	--	--	--	--	--	--

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

Ant B

Cable loss=1dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate(Mbps)								Required Limit
		13.5	26	39	52	78	104	117	130	
01	5180.00	13.33	--	--	--	--	--	--	--	--
03	5220.00	12.36	12.1	12.15	12.26	12.3	12.25	12.33	12.26	--
04	5240.00	13.61	--	--	--	--	--	--	--	--

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

Ant A+B

Peak Power Output										
Channel No.	Frequency (MHz)	Data Rate(Mbps)								Required Limit
		13.5	26	39	52	78	104	117	130	
01	5180.00	16.14	--	--	--	--	--	--	--	17dBm
03	5220.00	14.37	14.19	14.22	14.28	14.31	14.27	14.33	14.29	17dBm
04	5240.00	15.20	--	--	--	--	--	--	--	17dBm

Note: Peak Power Output Value =Antenna A + Antenna B

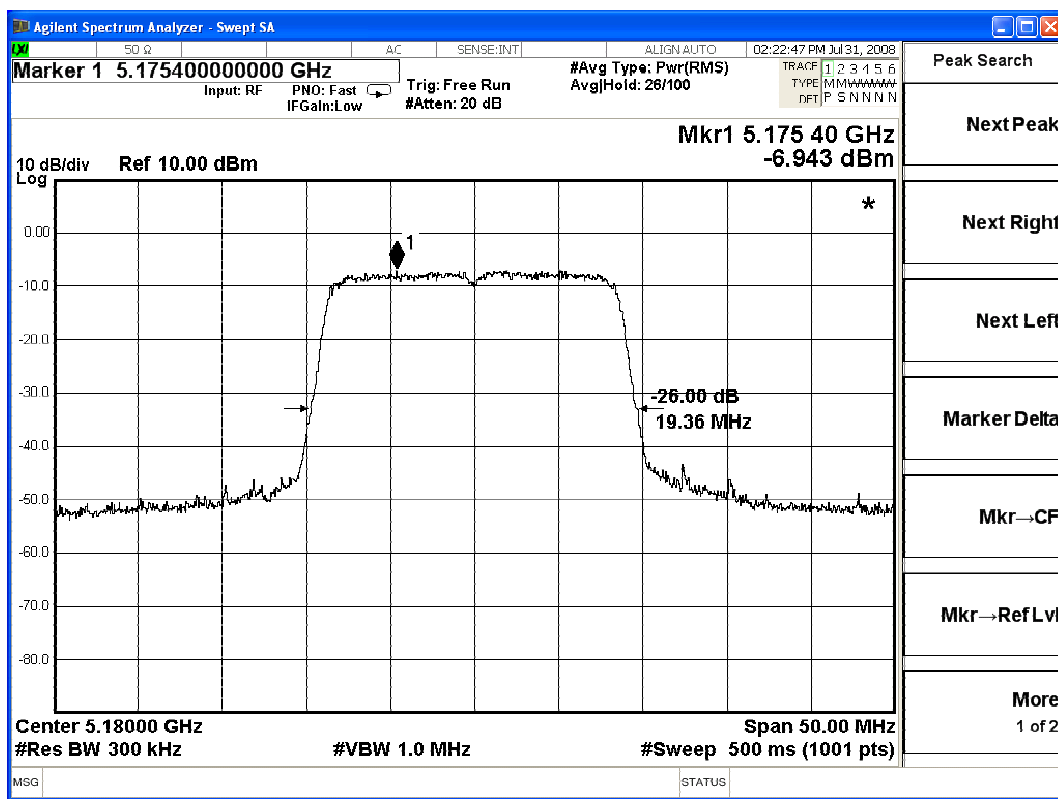
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
01	5180	19.36	12.91

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.36MHz)=16.87dBm	Pass

26dBc Occupied Bandwidth-Antenna A:

Channel 01



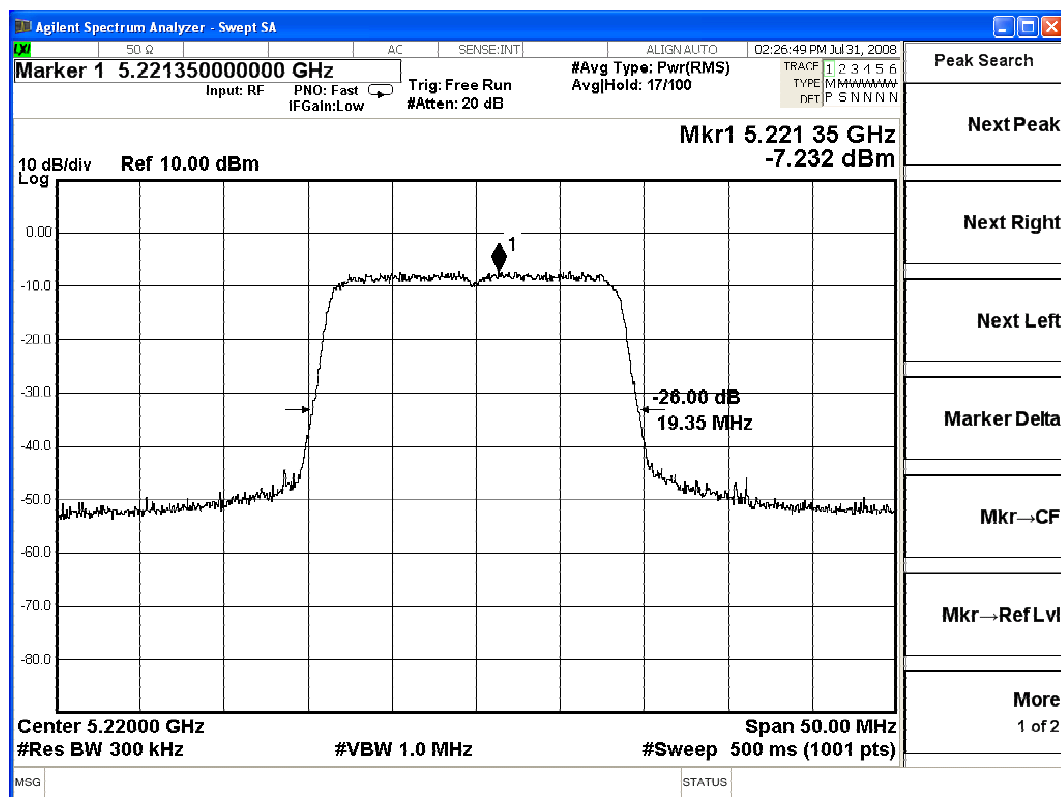
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
03	5220	19.35	10.06

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.35MHz)=16.87dBm	Pass

26dBc Occupied Bandwidth-Antenna A:

Channel 03



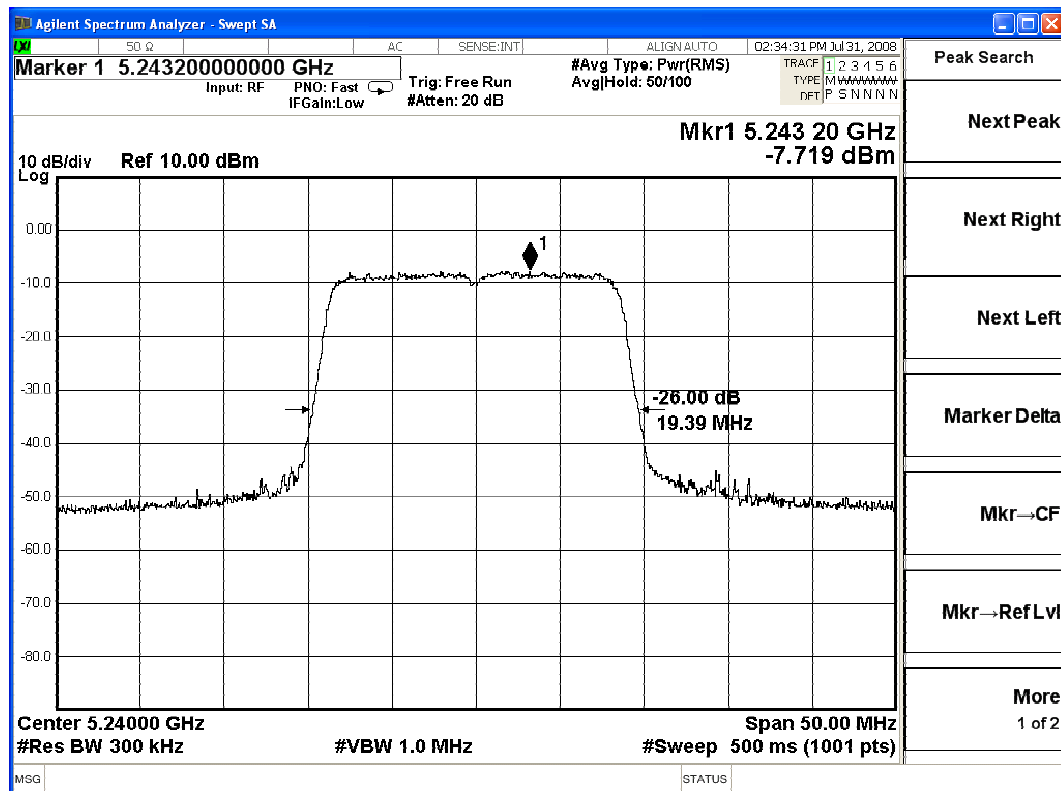
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
04	5240	19.39	10.05

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.39MHz)=16.88dBm	Pass

26dBc Occupied Bandwidth-Antenna A:

Channel 04



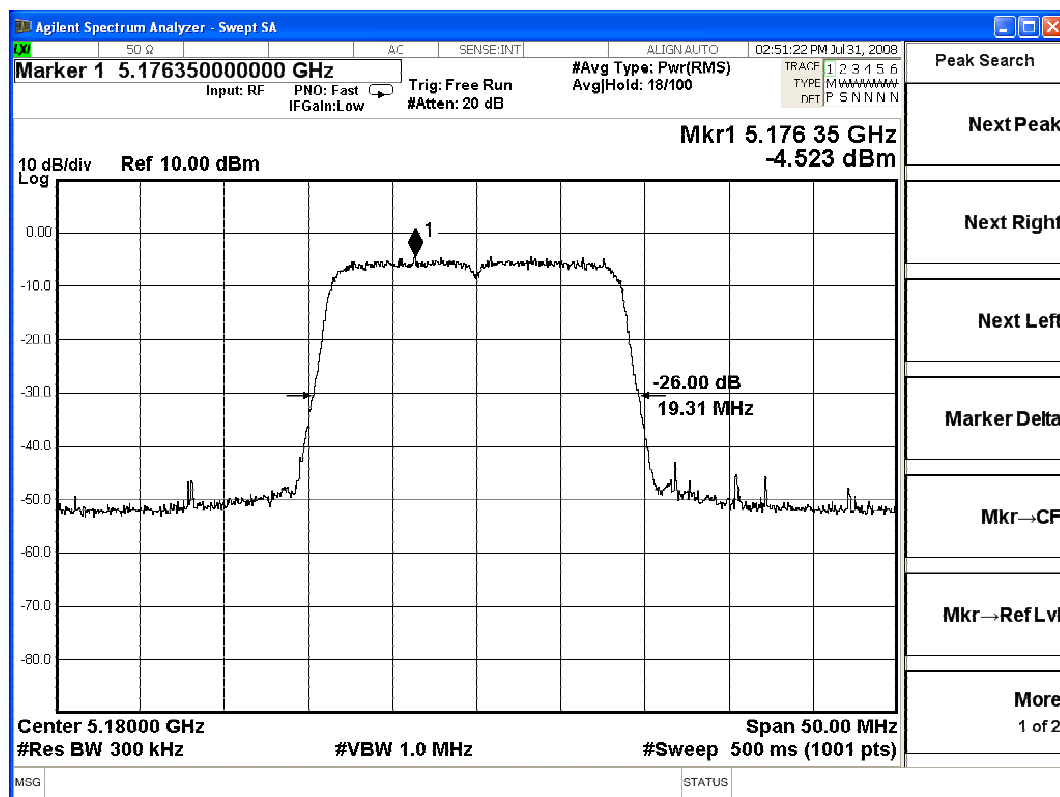
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
01	5180	19.31	12.33

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.31MHz)=16.86dBm	Pass

26dBc Occupied Bandwidth-Antenna B:

Channel 01

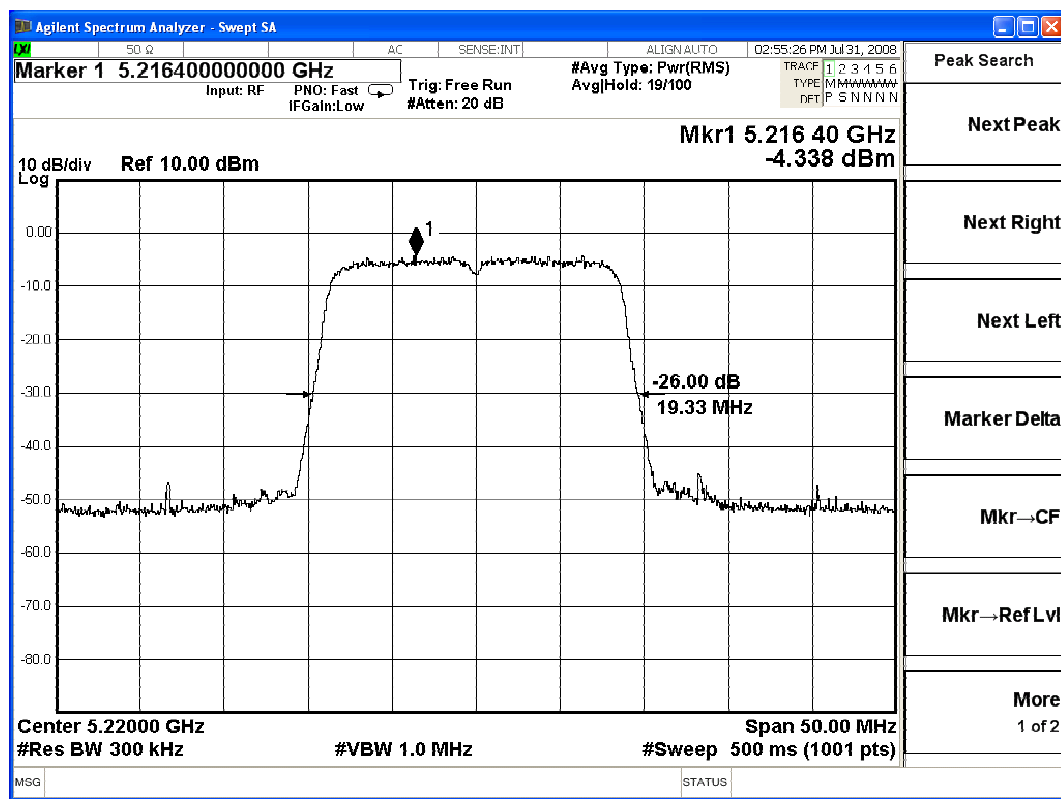


Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
03	5220	19.33	12.36

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.33MHz)=16.86dBm	Pass

**26dBc Occupied Bandwidth-Antenna B:
Channel 03**



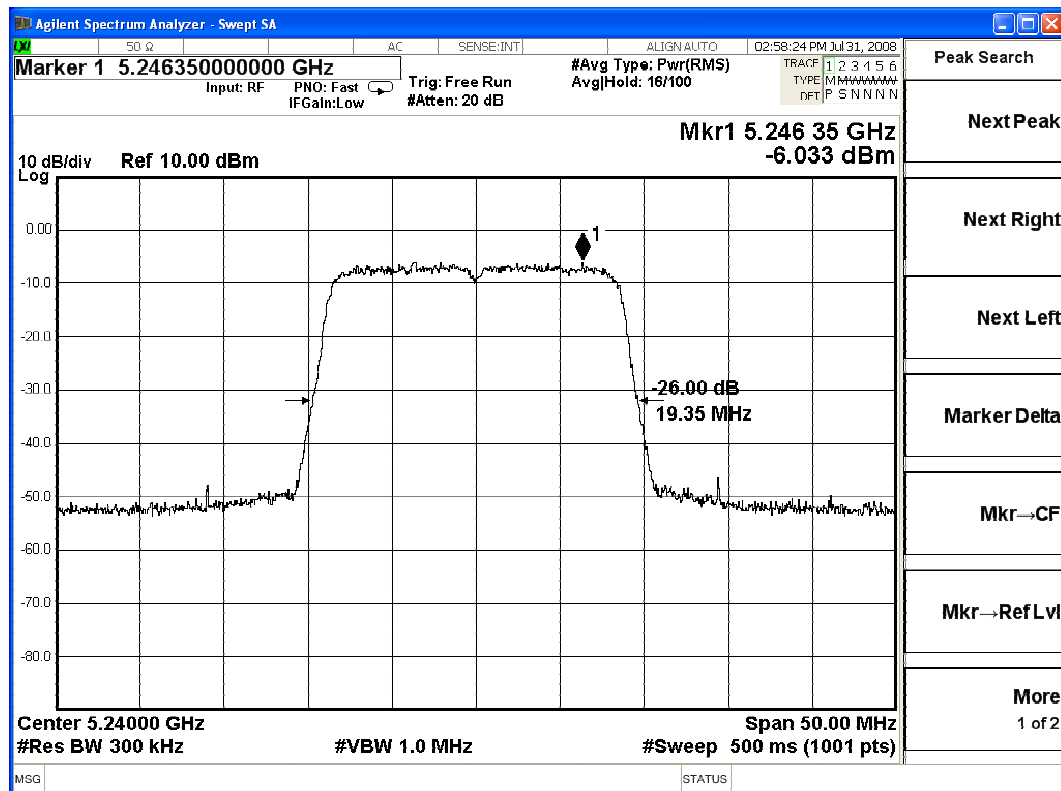
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
04	5240	19.35	13.61

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 19.35MHz)=16.87dBm	Pass

26dBc Occupied Bandwidth-Antenna B:

Channel 04



Product : ROS Home Center
 Test Item : Peak Transmit Power
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band)

Ant A

Cable loss=1dB		Peak Power Output								Required Limit
Channel No.	Frequency (MHz)	Data Rate(Mbps)								
		27	54	81	108	162	216	243	270	
01	5190.00	13.7	--	--	--	--	--	--	--	--
02	5230.00	13.61	13.55	13.58	13.49	13.55	13.5	13.54	13.54	--

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

Ant B

Cable loss=1dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate(Mbps)								Required Limit
		27	54	81	108	162	216	243	270	
01	5190.00	12.8	--	--	--	--	--	--	--	--
02	5230.00	12.8	12.71	12.76	12.72	12.68	12.68	12.7	12.72	--

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

Ant A+B

Peak Power Output										
Channel No.	Frequency (MHz)	Data Rate(Mbps)								Required Limit
		27	54	81	108	162	216	243	270	
01	5190.00	16.28	--	--	--	--	--	--	--	17dBm
02	5230.00	16.23	16.16	16.20	16.13	16.15	16.12	16.15	16.16	17dBm

Note: Peak Power Output Value = Antenna A + Antenna B

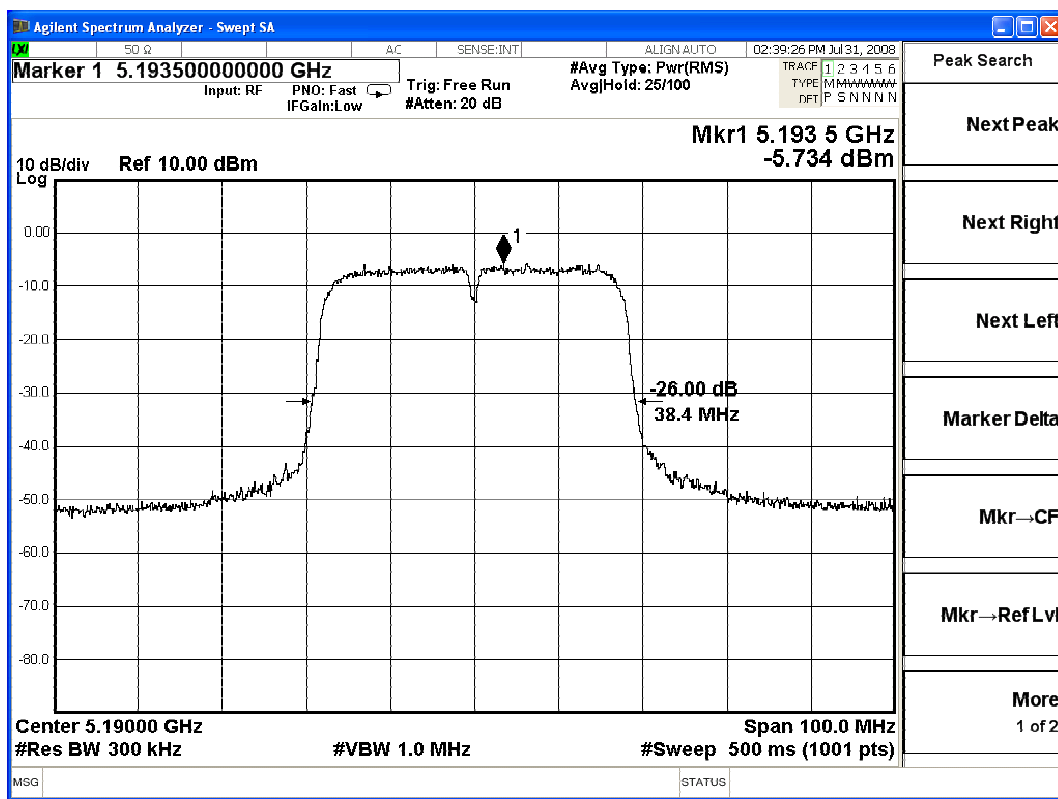
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
01	5190	38.40	13.7

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 38.40MHz)=19.84dBm	Pass

26dBc Occupied Bandwidth-Antenna A:

Channel 01



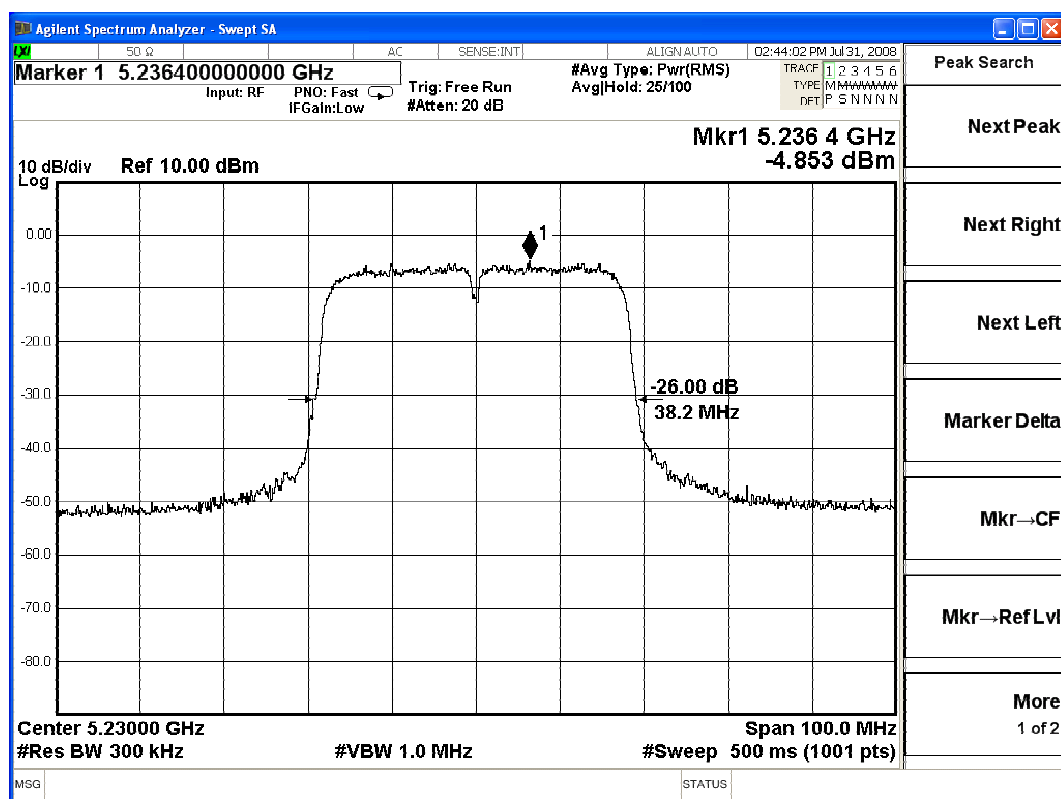
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
02	5230	38.20	13.61

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 38.20MHz)=19.82dBm	Pass

26dBc Occupied Bandwidth-Antenna A:

Channel 02



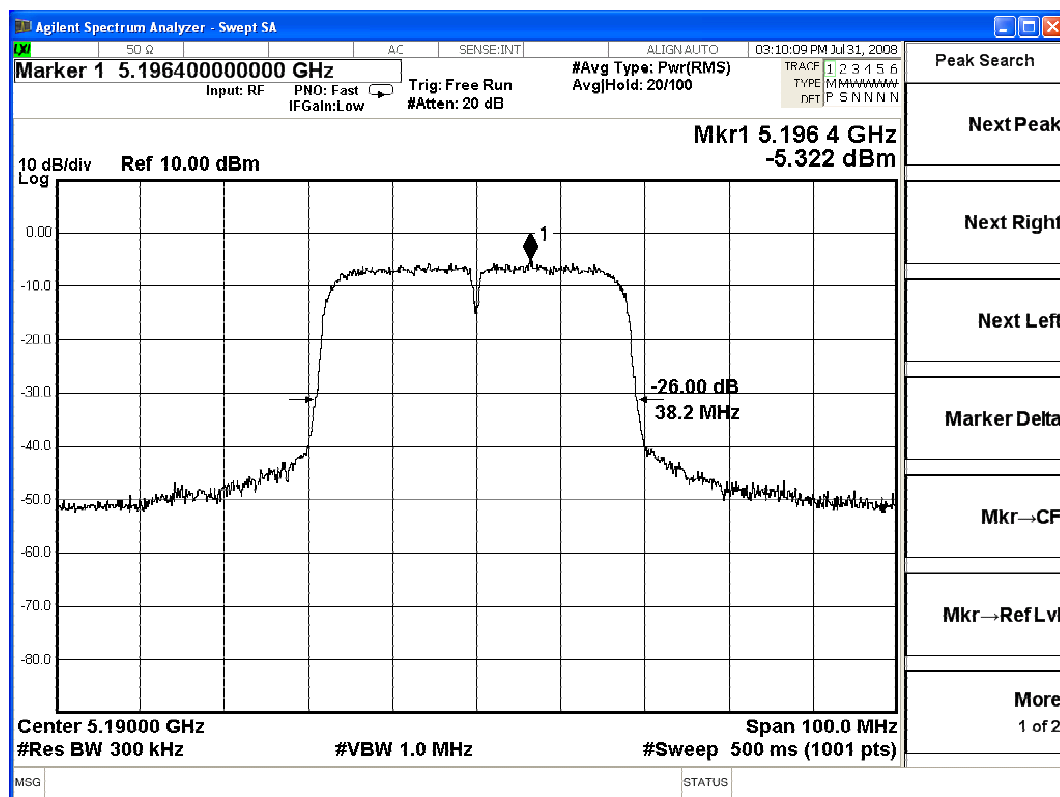
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
01	5190	38.20	12.8

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 38.20MHz)=19.82dBm	Pass

26dBc Occupied Bandwidth-Antenna B:

Channel 01



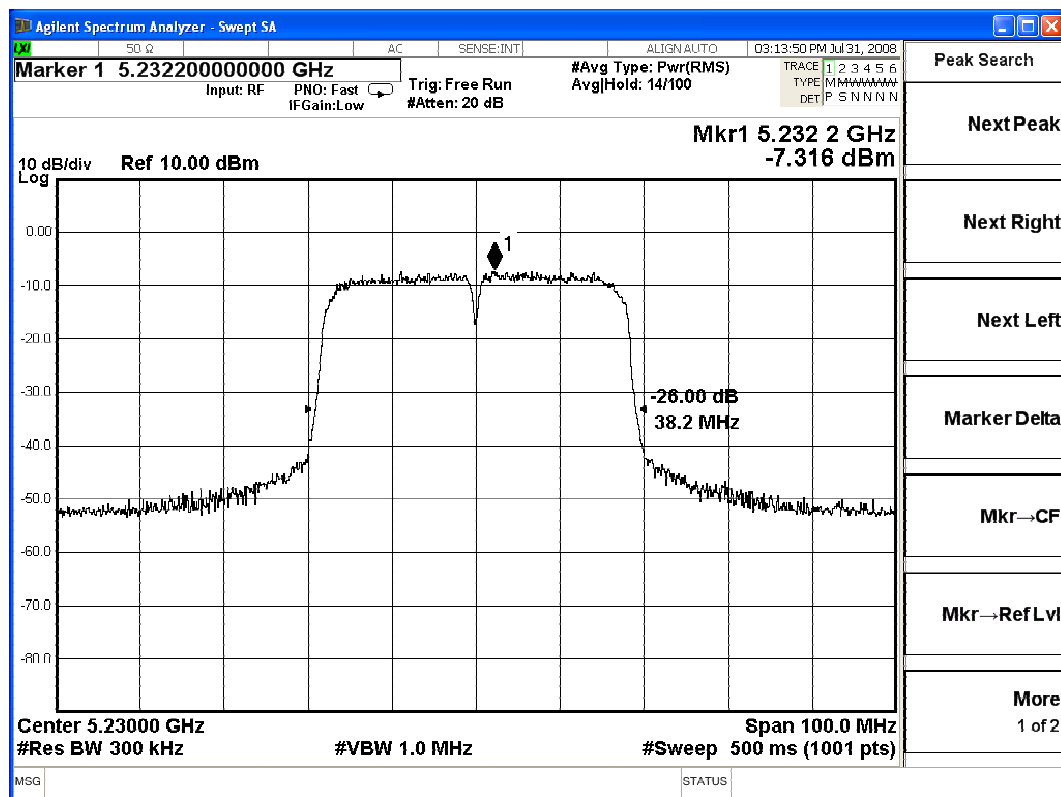
Peak Transmit Power Measurement:

Channel No.	Frequency (MHz)	26dBc Occupied Bandwidth (MHz)	Measurement Level (dBm)
02	5230	38.20	12.8

Limits (dBm)	Result
50mW (17dBm) or 4dBm+10 log (B= 38.20MHz)=19.82dBm	Pass

26dBc Occupied Bandwidth-Antenna B:

Channel 02



4. Peak Power Spectral Density

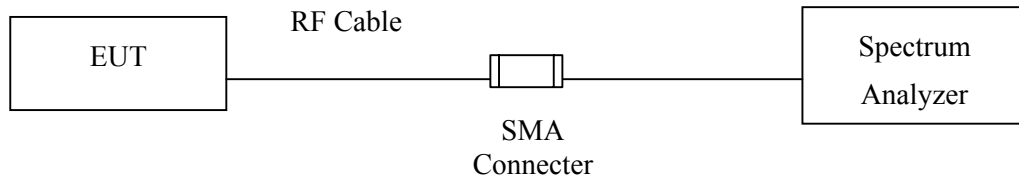
4.1. Test Equipment

The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2007
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2008

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

4.2. Test Setup



4.3. Limits

- (4) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (5) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.
- (6) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

4.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Aug 2002 DA 02-2138 for compliance to FCC 47CFR Subpart E requirements.

4.5. Uncertainty

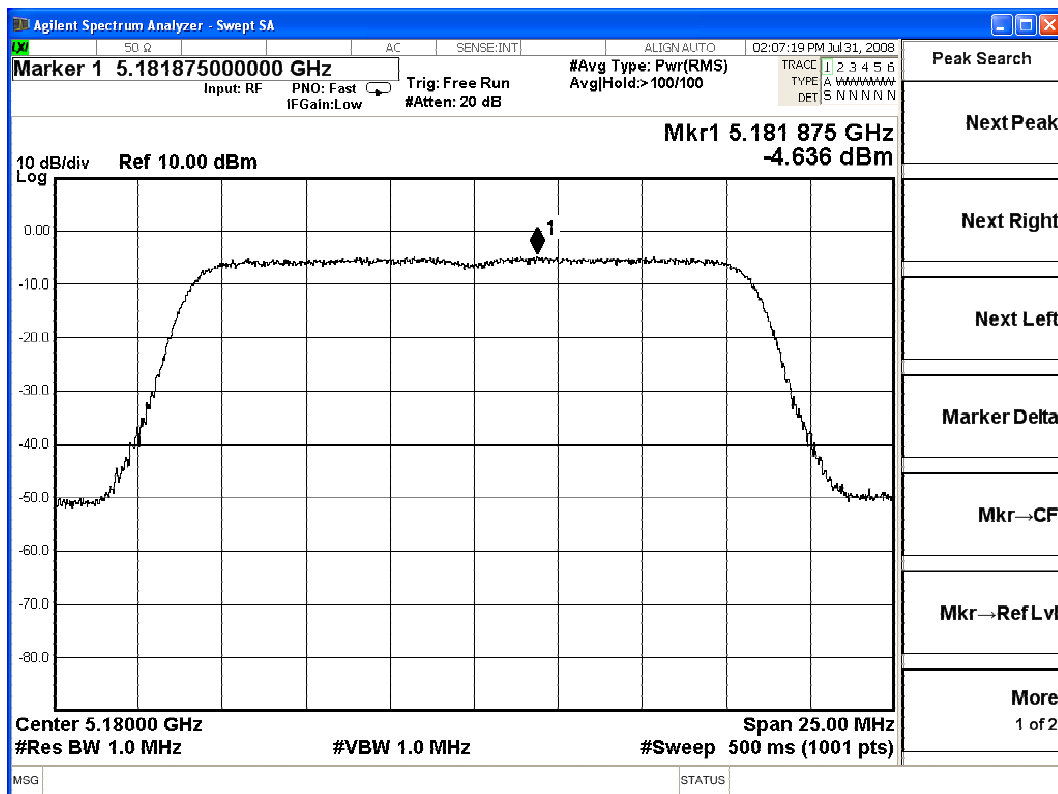
± 1.27 dB

4.6. Test Result of Peak Power Spectral Density

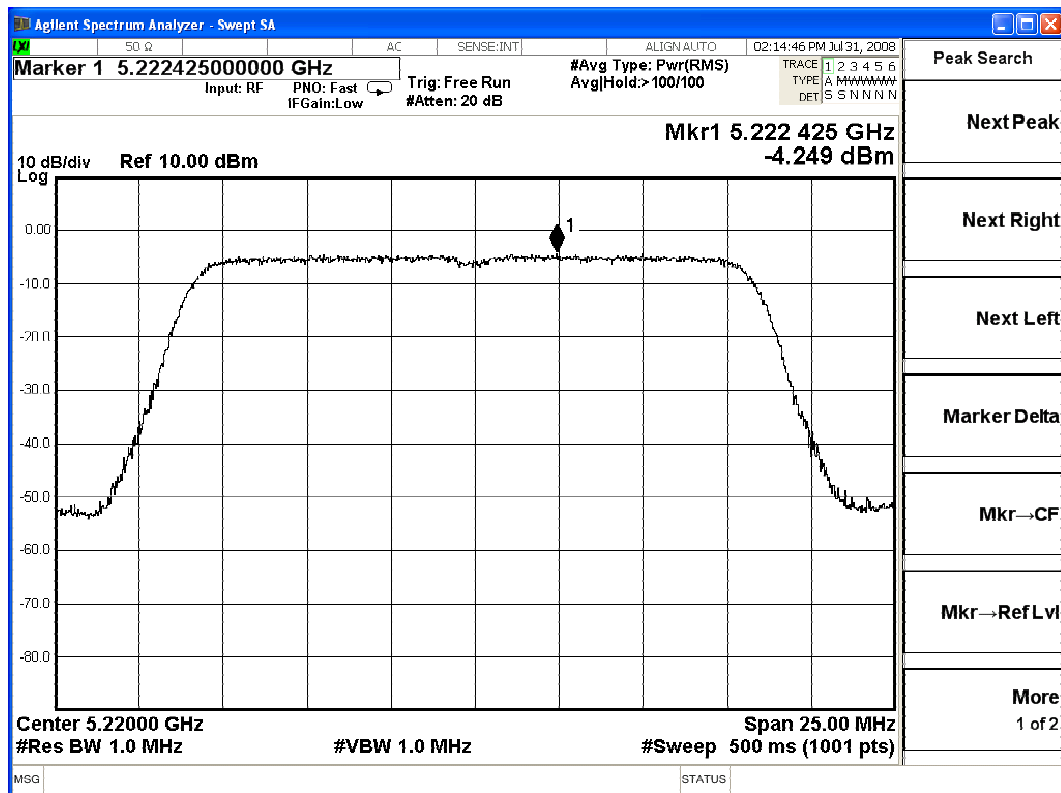
Product : ROS Home Center
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11a

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	5180.00	-4.636	< 4	Pass
03	5220.00	-4.249	< 4	Pass
04	5240.00	-4.311	<4	Pass

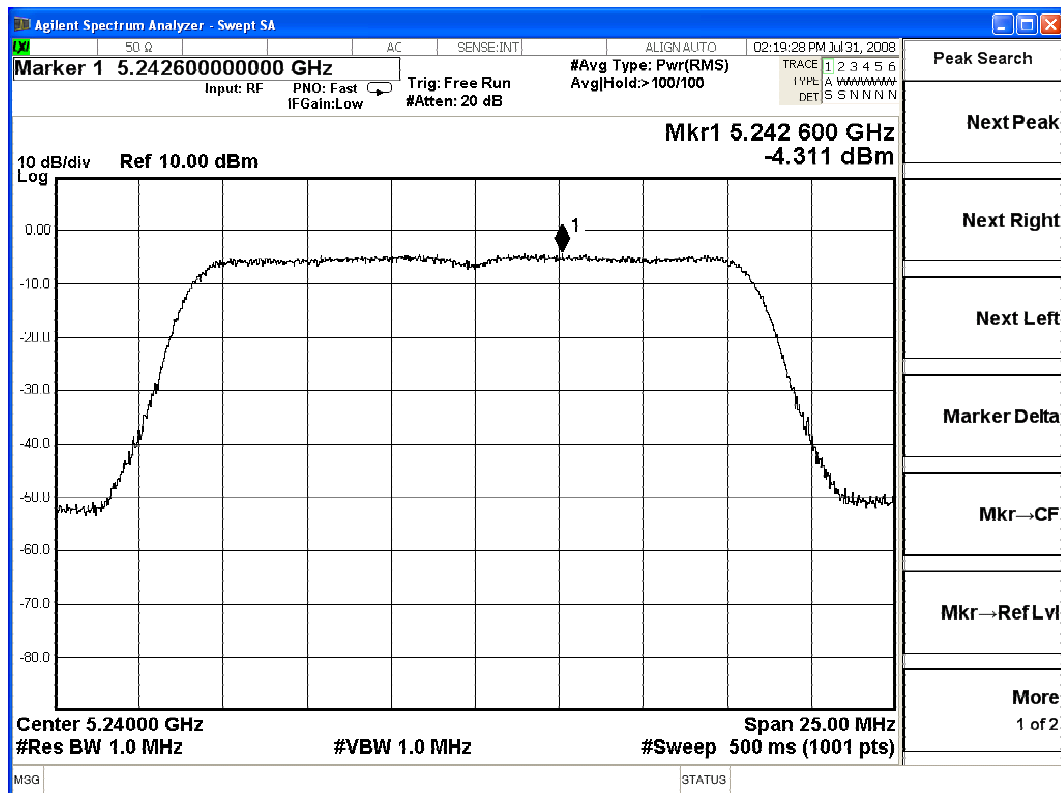
Channel 01:



Channel 03:



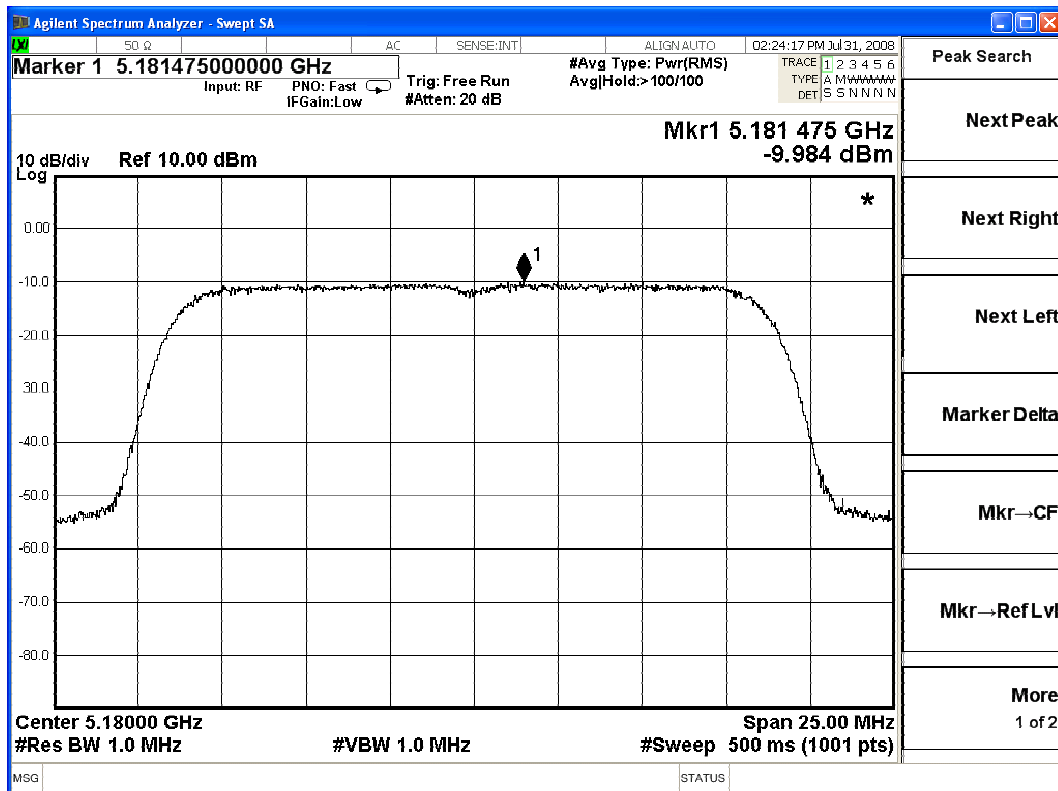
Channel 04:



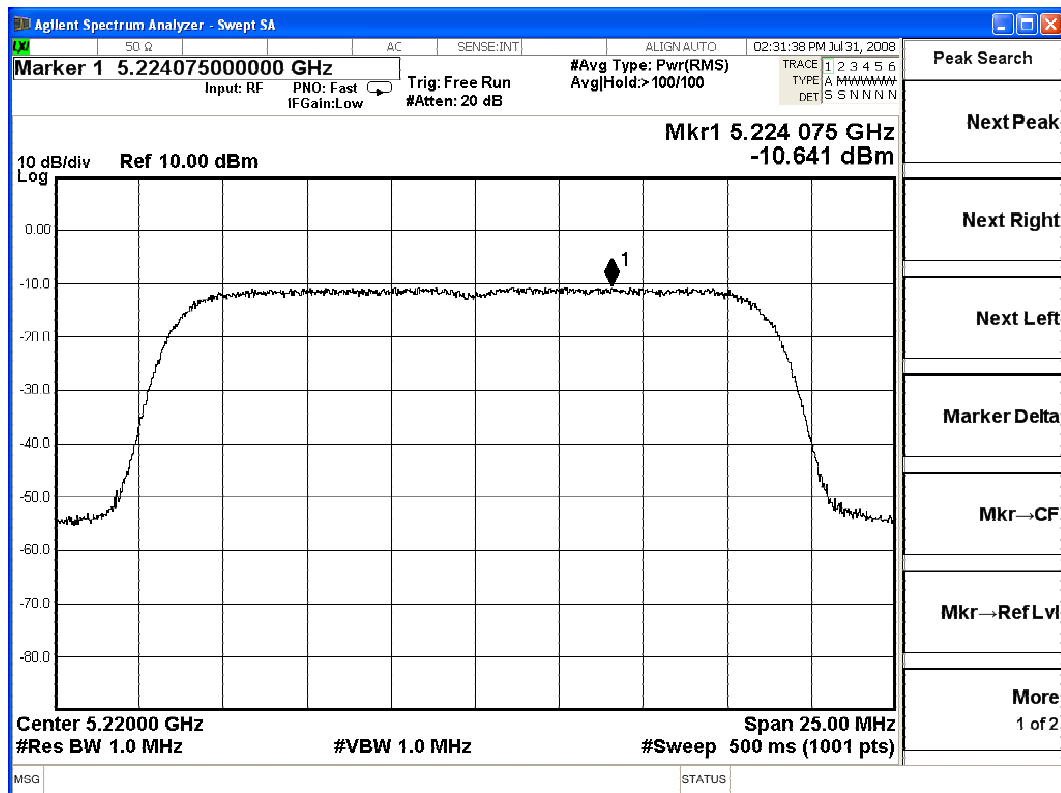
Product : ROS Home Center
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11n-20BW_13.5Mbps(5G Band)-Antenna A

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	5180.00	-9.984	< 4	Pass
03	5220.00	-10.641	< 4	Pass
04	5240.00	-10.704	< 4	Pass

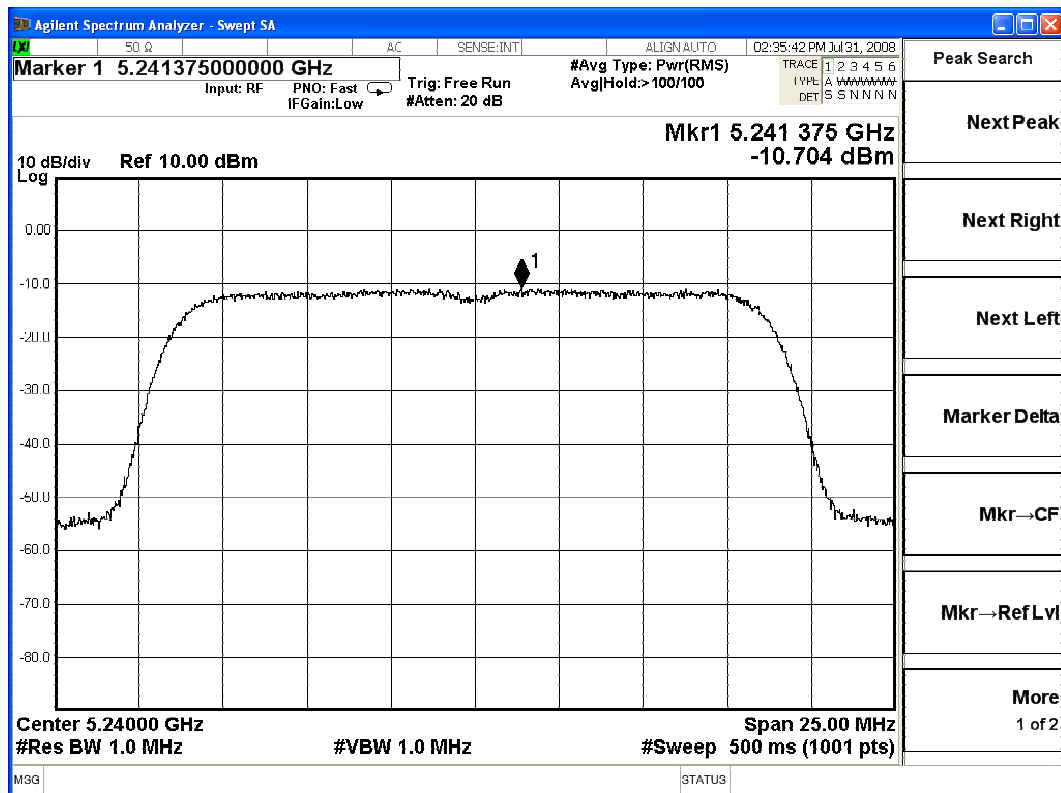
Channel 01:



Channel 03:



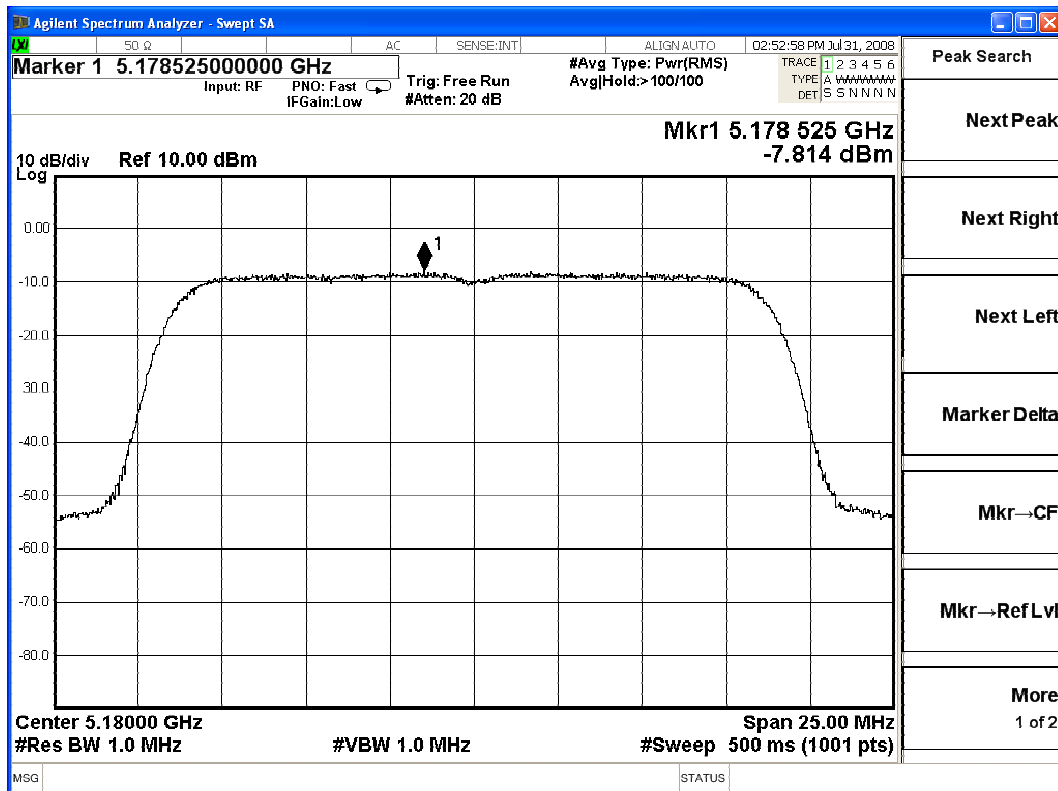
Channel 04:



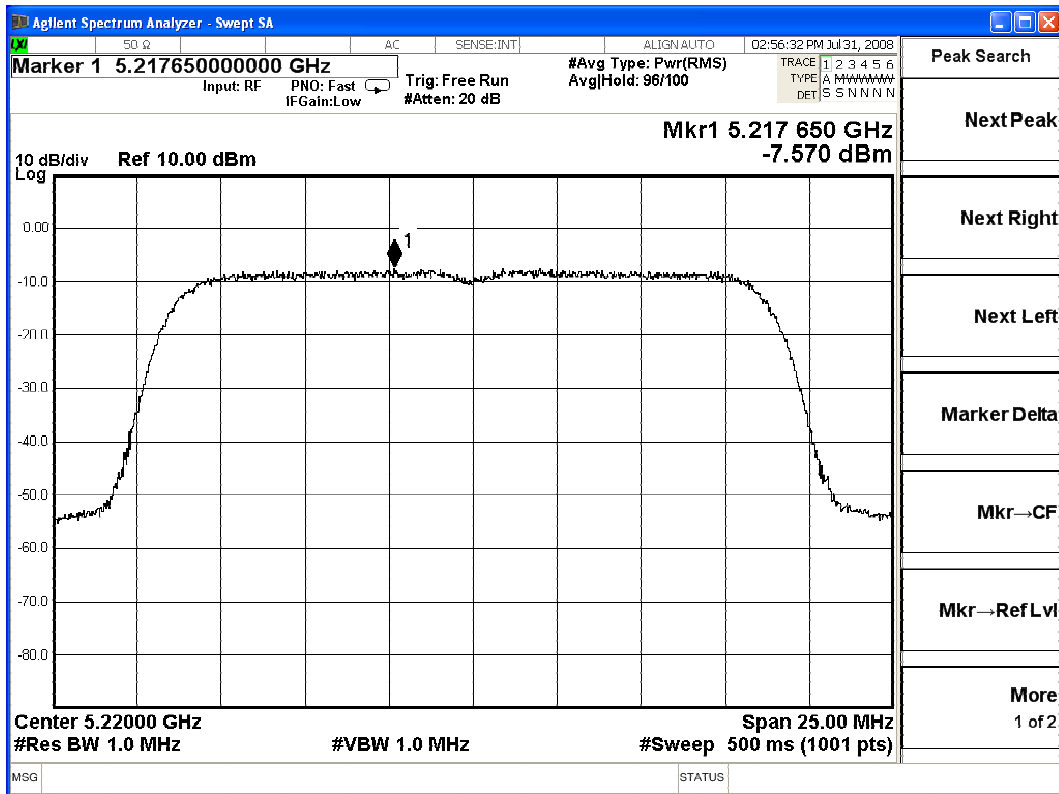
Product : ROS Home Center
 Test Item : Peak Power Spectral Density
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11n-20BW_13.5Mbps(5G Band)-Antenna B

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	5180.00	-7.814	< 4	Pass
03	5220.00	-7.870	< 4	Pass
04	5240.00	-9.016	< 4	Pass

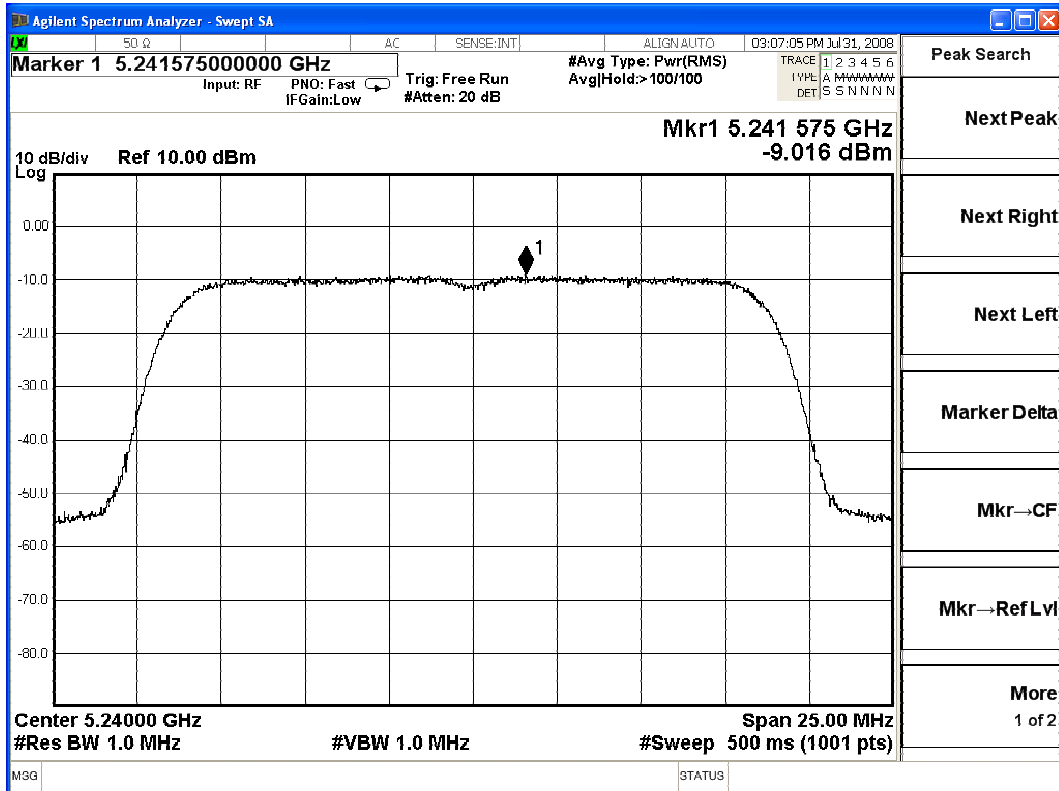
Channel 01:



Channel 03:



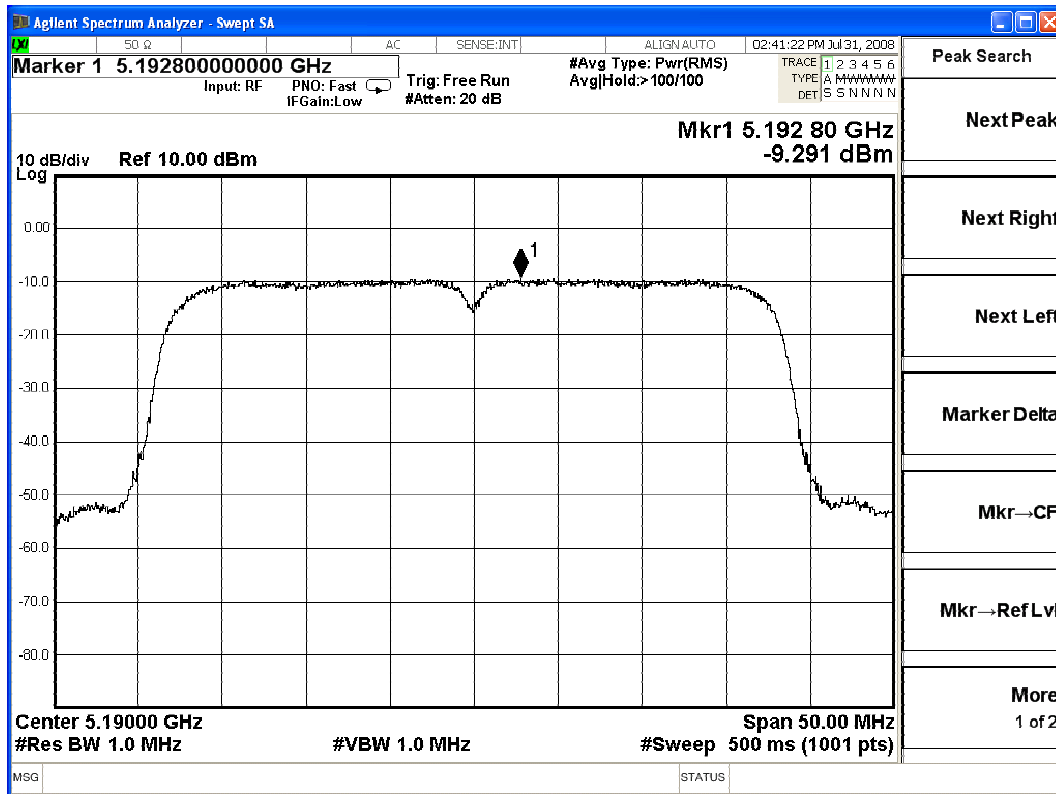
Channel 04:



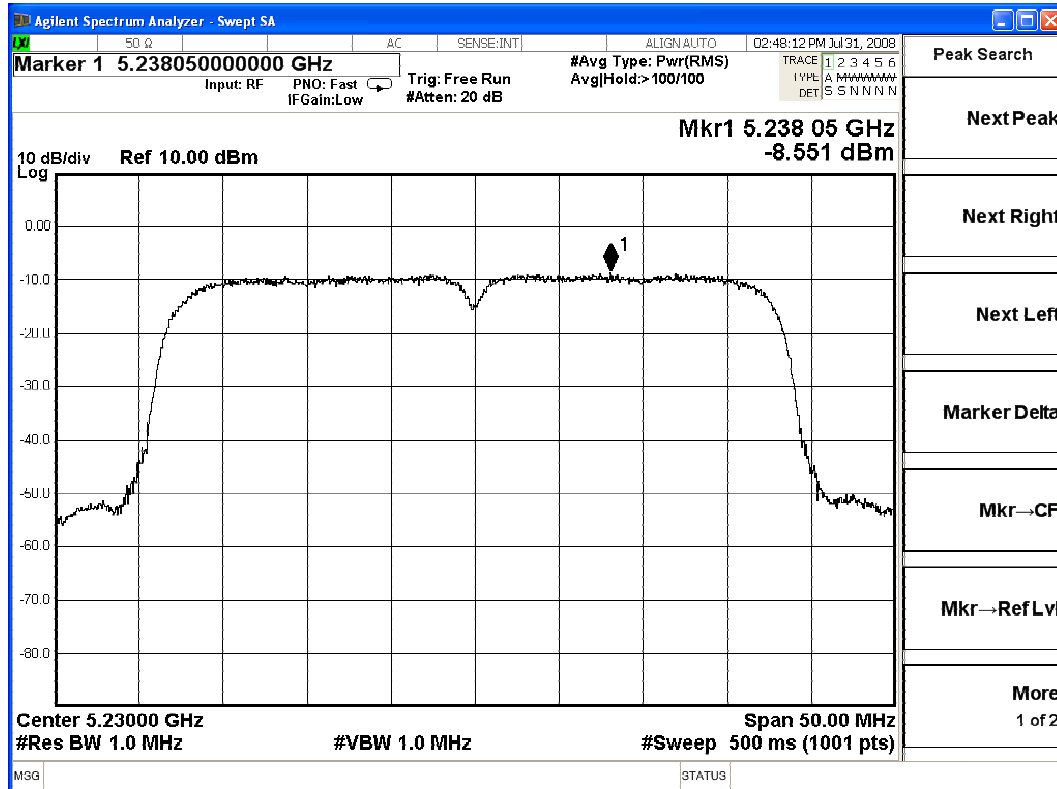
Product : ROS Home Center
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band)-Antenna A

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	5190.00	-9.291	< 4	Pass
02	5230.00	-8.551	< 4	Pass

Ant A-Channel 01:



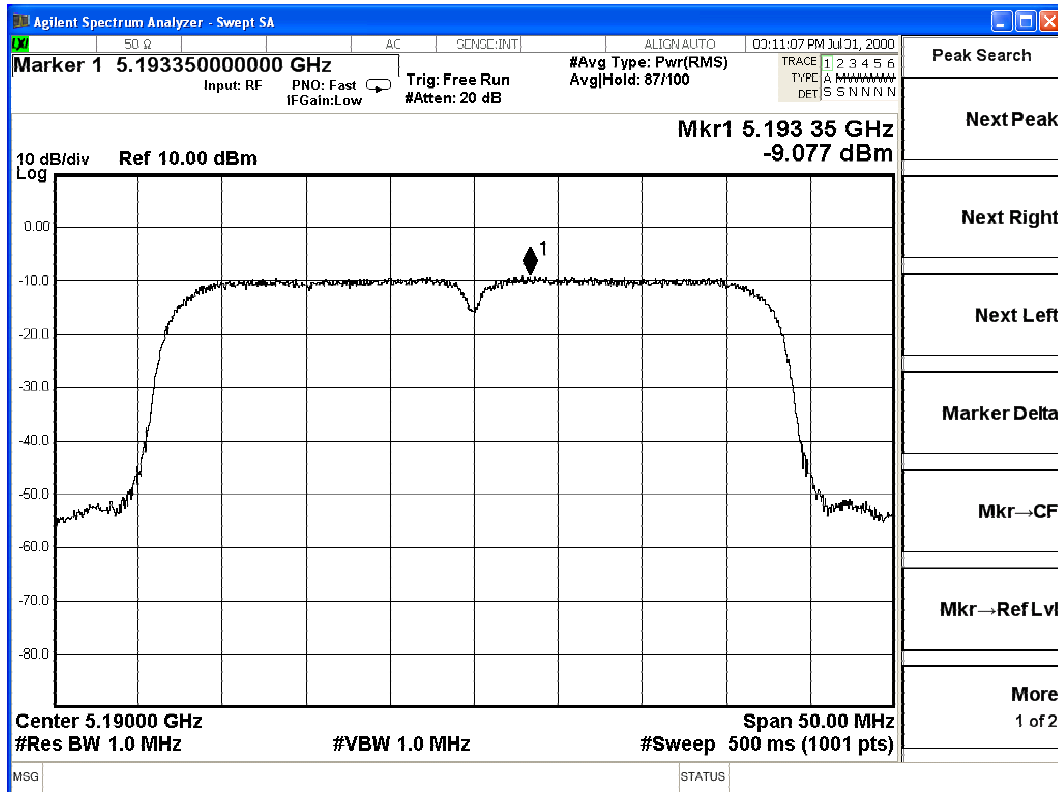
Ant A-Channel 02:



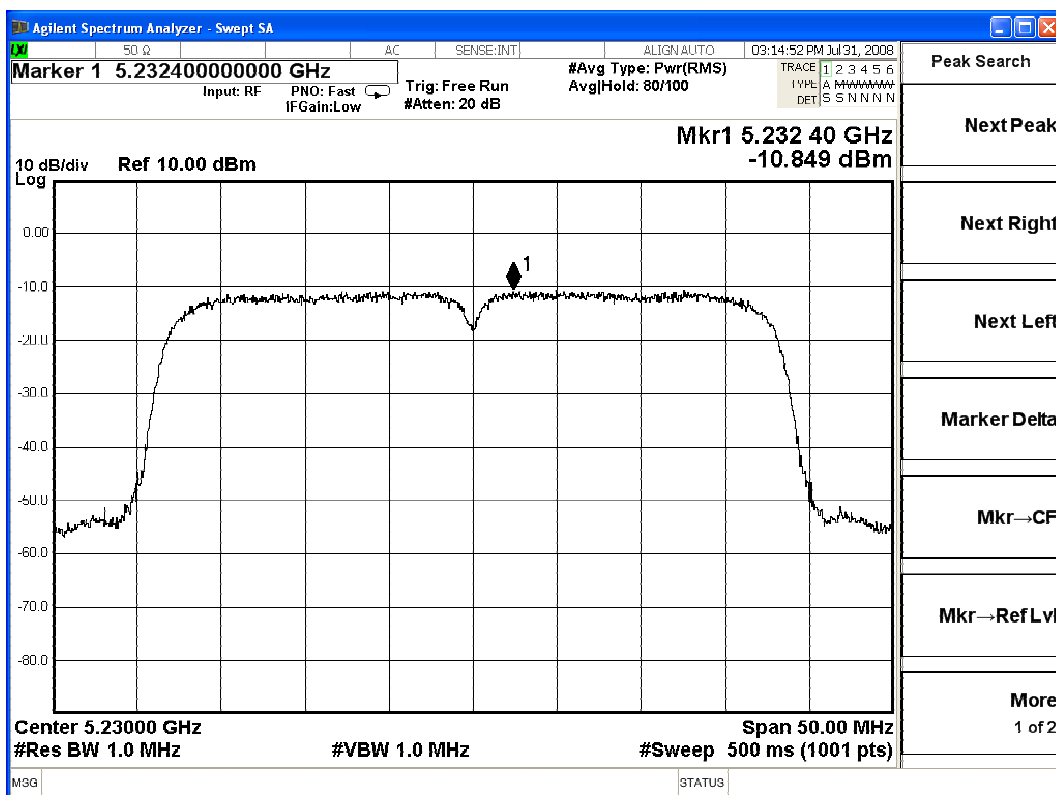
Product : ROS Home Center
Test Item : Peak Power Spectral Density
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band)-Antenna B

Channel No.	Frequency (MHz)	Measurement Level (dBm)	Required Limit (dBm)	Result
01	5190.00	-9.007	< 4	Pass
02	5230.00	-10.849	< 4	Pass

Ant B-Channel 01:



Ant B-Channel 02:



5. Peak Excursion

5.1. Test Equipment

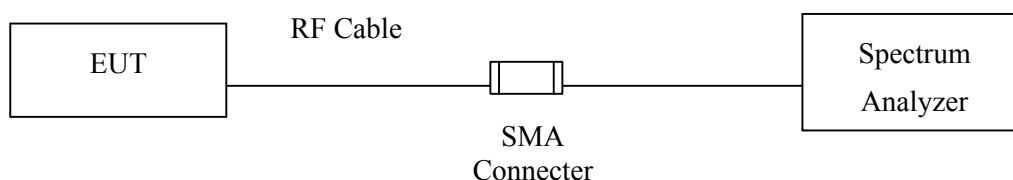
The following test equipments are used during the radiated emission tests:

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	Agilent	E4407B / US39440758	May, 2008
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2008

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

5.2. Test Setup

Conduction Power Measurement



5.3. Limits

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

5.4. Test Procedure

The EUT was setup to ANSI C63.4, 2003; tested to DTS test procedure of Aug 2002 DA 02-2138 for compliance to FCC 47CFR Subpart E requirements.

5.5. Uncertainty

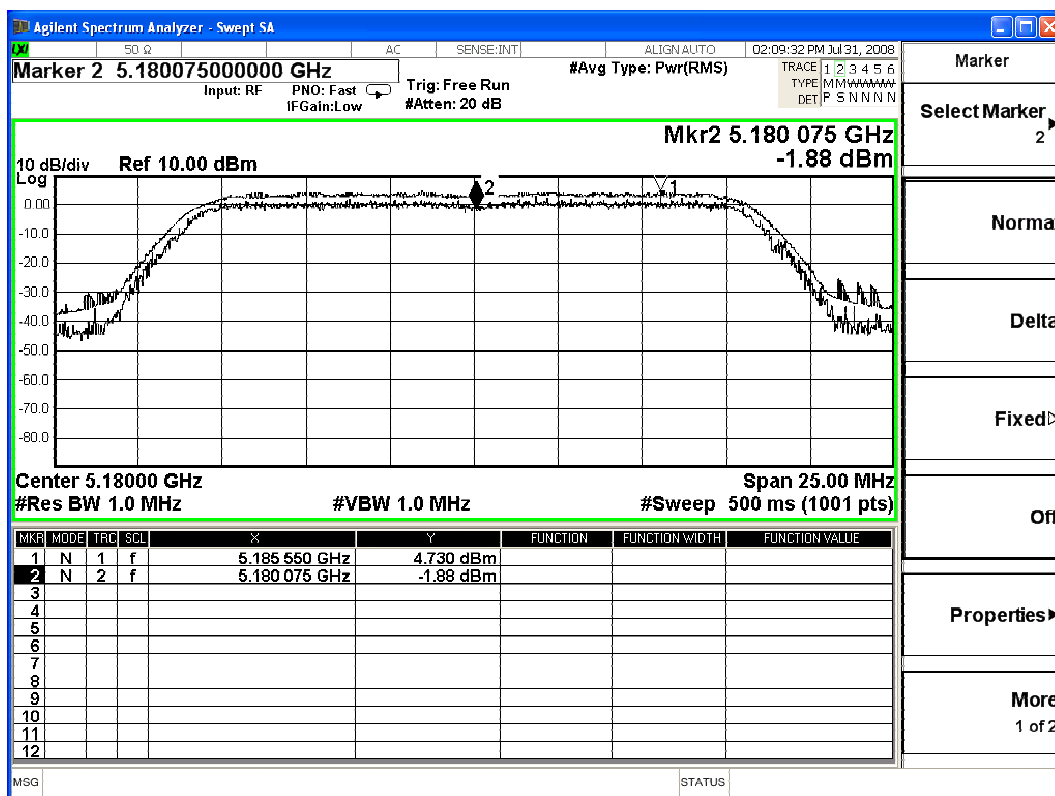
± 1.27 dB

5.6. Test Result of Peak Excursion

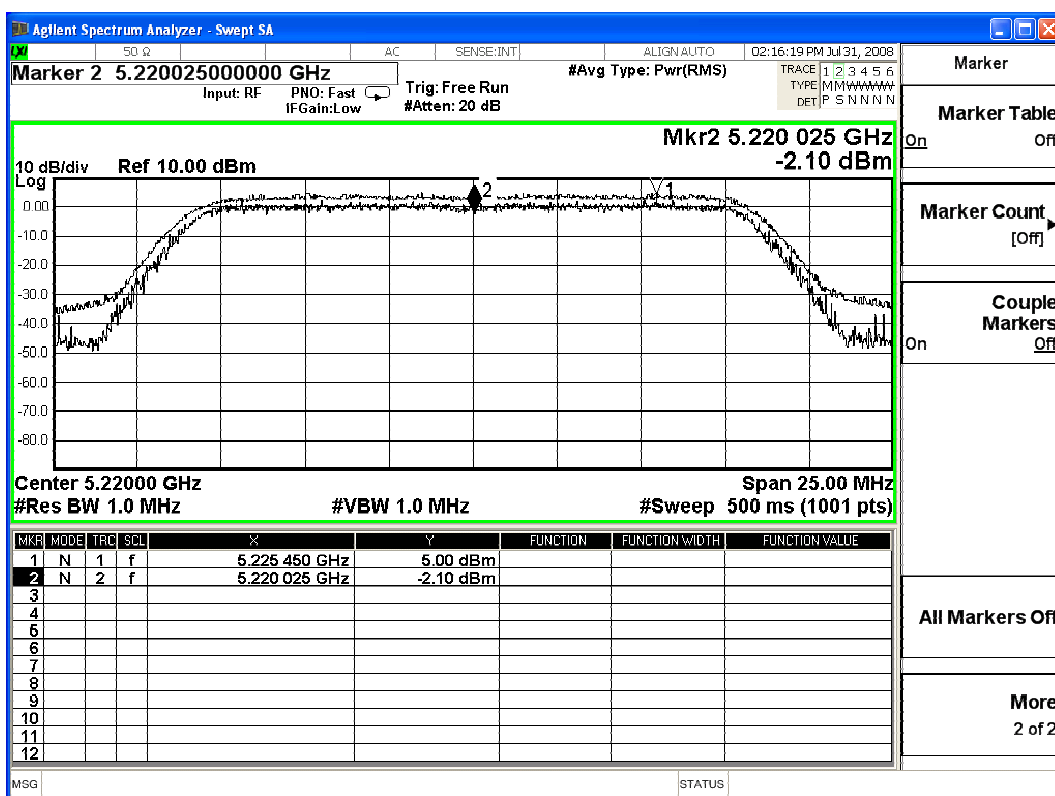
Product : ROS Home Center
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 1: Transmitter 802.11a

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
01	5180.00	6.61	≤ 13	Pass
03	5220.00	7.10	≤ 13	Pass
04	5240.00	7.359	≤ 13	Pass

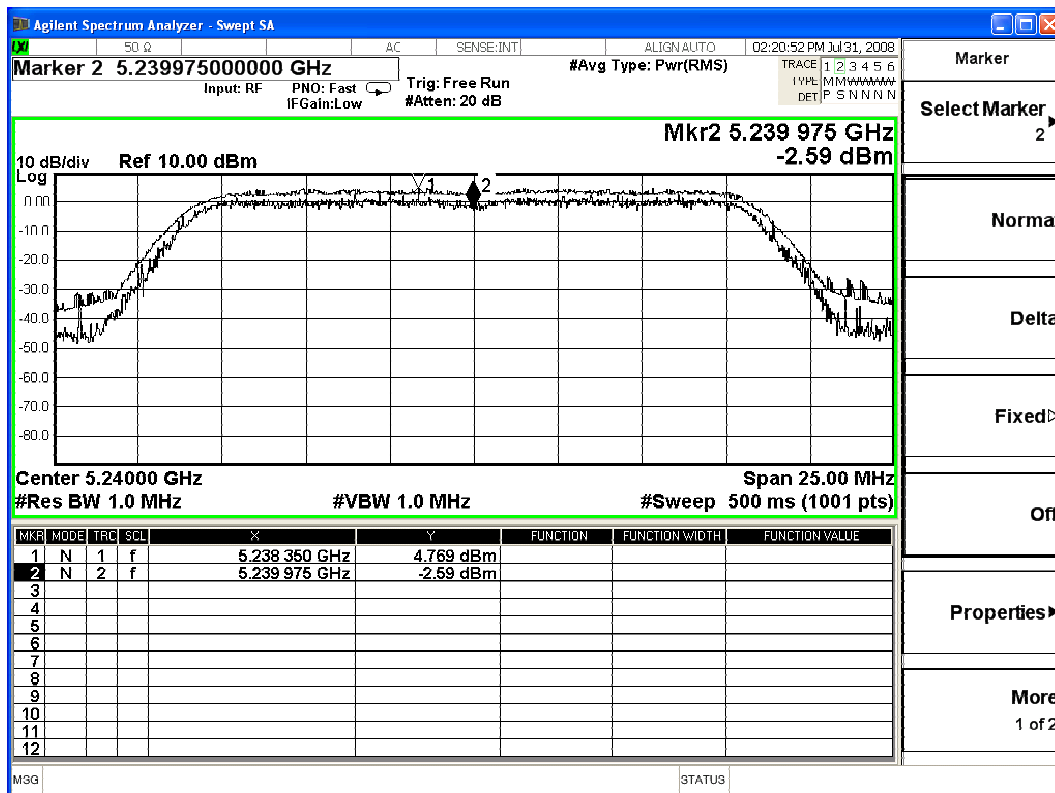
Channel 01:



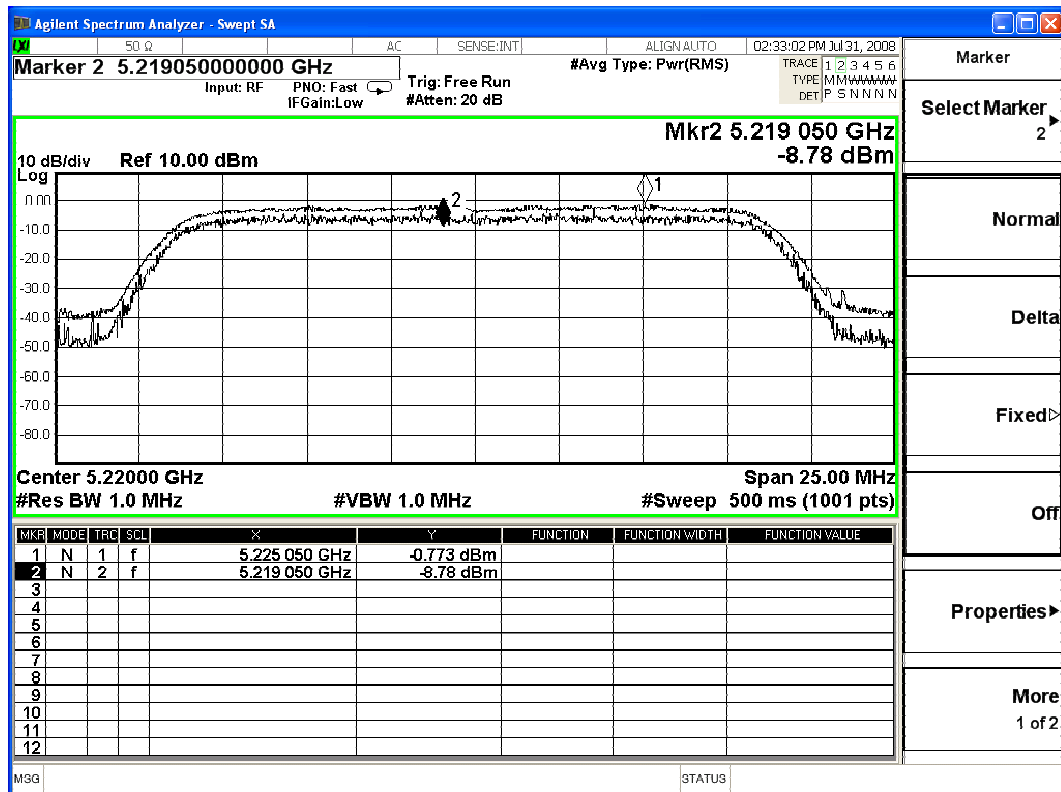
Channel 03:



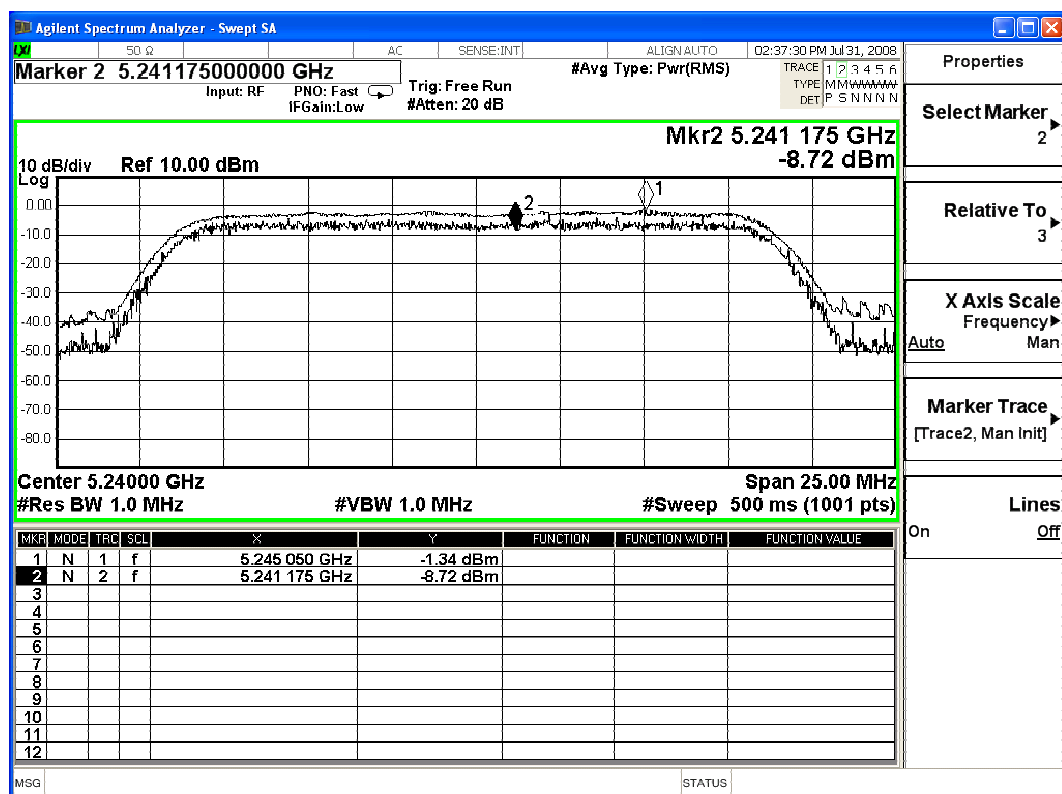
Channel 04:



Ant A-Channel 03:



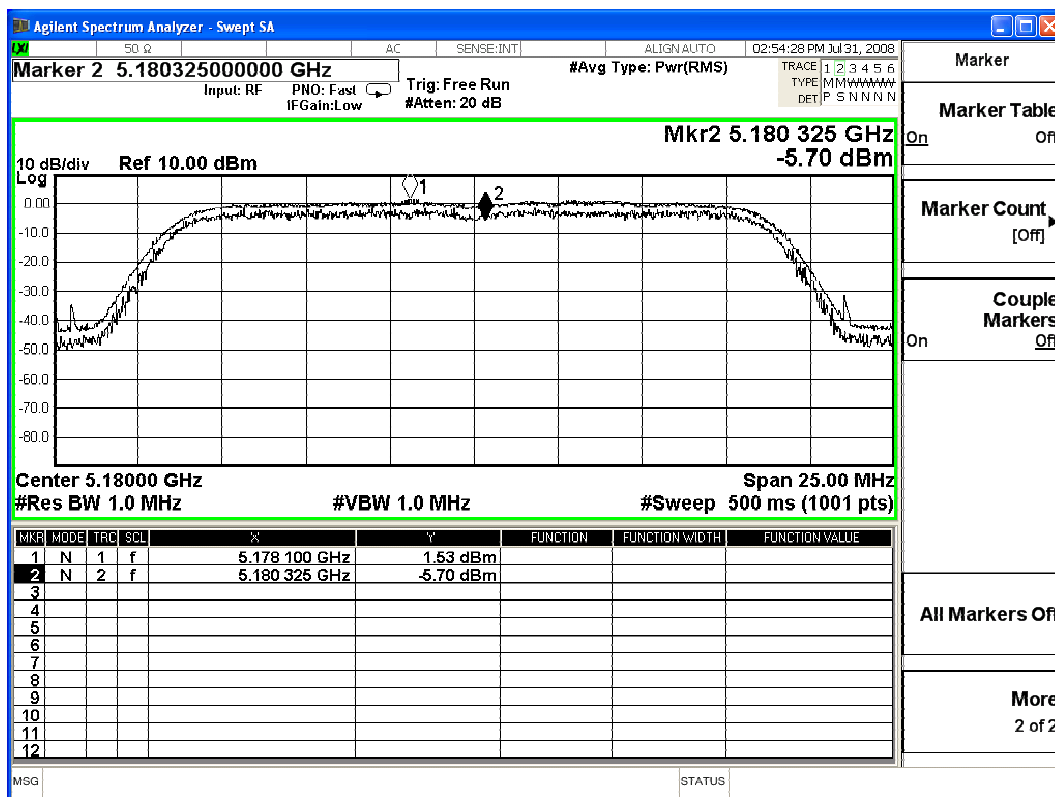
Ant A-Channel 04:



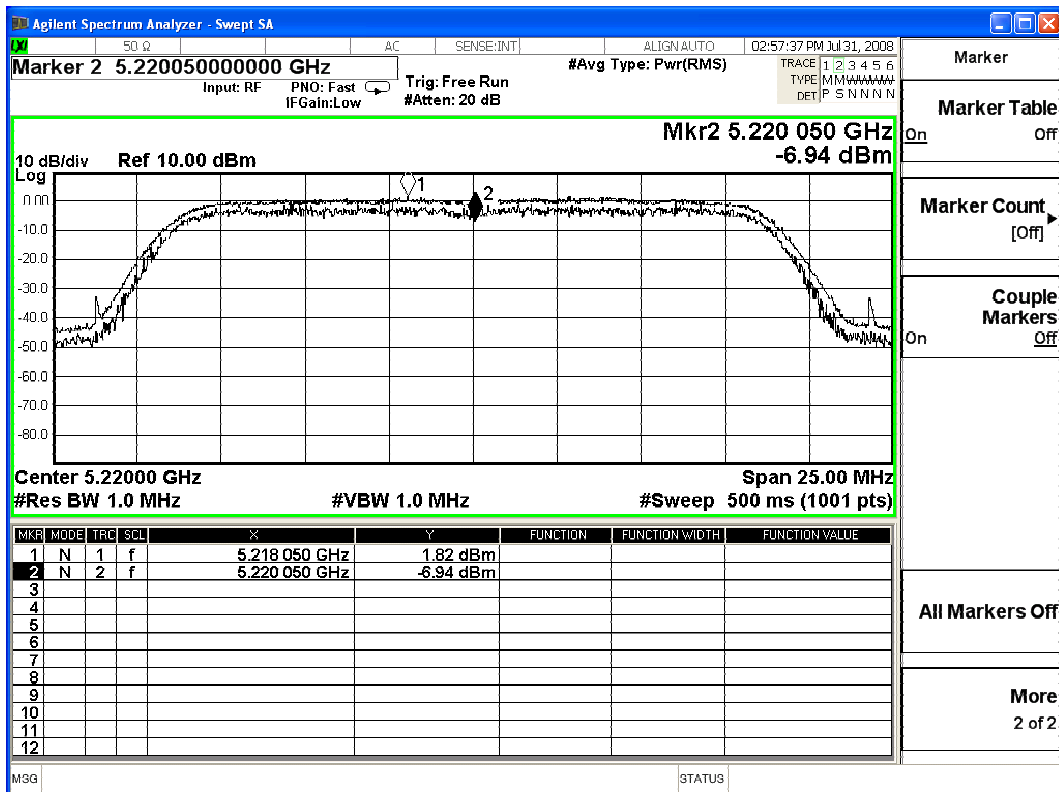
Product : ROS Home Center
 Test Item : Peak Excursion
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter 802.11n-20BW_13.5Mbps(5G Band)-Antenna B

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
01	5180.00	7.23	≤ 13	Pass
03	5220.00	8.76	≤ 13	Pass
04	5240.00	7.43	≤ 13	Pass

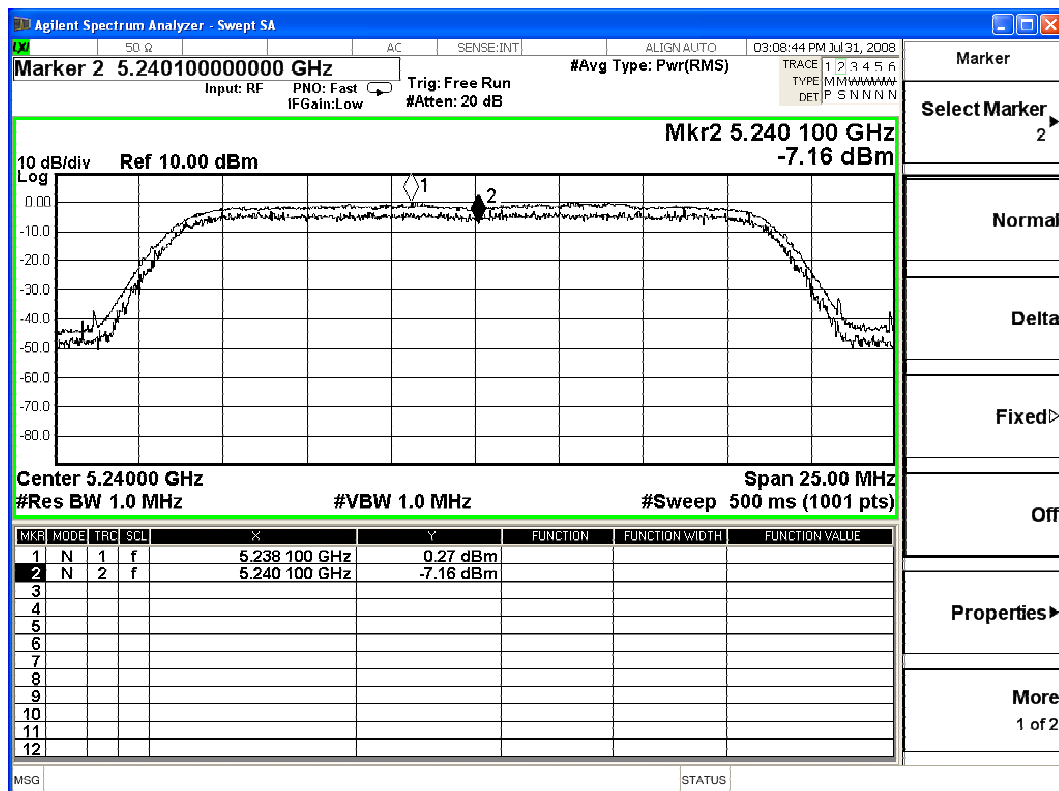
Ant B-Channel 01:



Ant B-Channel 03:



Ant B-Channel 04:



Product : ROS Home Center
Test Item : Peak Excursion
Test Site : No.3 OATS
Test Mode : Mode 3: Transmitter 802.11n-40BW_27Mbps(5G Band)-Antenna A

Channel No.	Frequency (MHz)	Measurement Level (dB)	Required Limit (dB)	Result
01	5190.00	9.37	≤ 13	Pass
02	5230.00	10.942	≤ 13	Pass