



Test Report

Product Name	ROS Video DMA
Model No	005-01004
FCC ID	BJM-ROS1000A

Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 10451, R.O.C.

Date of Receipt	Apr. 01, 2010
Issued Date	May. 10, 2010
Report No.	104110R-RFUSP32V01
Report Version	V1.0

The test results relate only to the samples tested.

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This report must not be used to claim product endorsement by NVLAP any agency of the U.S. Government

Test Report Certification

Issued Date: May. 10, 2010

Report No.: 104110R-RFUSP32V01



Product Name	ROS Video DMA
Applicant	TATUNG CO.
Address	22, Chungshan N. Rd., 3rd Sec. Taipei, Taiwan, 10451, R.O.C.
Manufacturer	TATUNG CO.
Model No.	005-01004
FCC ID.	BJM-ROS1000A
EUT Rated Voltage	AC 100-240V, 50-60Hz
EUT Test Voltage	AC 120V/60Hz
Trade Name	Prodea Systems
Applicable Standard	FCC CFR Title 47 Part 15 Subpart E: 2009 ANSI C63.4: 2003
Test Result	Complied



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Attachment 1: EUT Test Photographs

Attachment 2: EUT Detailed Photographs

1. GENERAL INFORMATION

1.1. EUT Description

Product Name	ROS Video DMA
Trade Name	Prodea Systems
FCC ID.	BJM-ROS1000A
Model No.	005-01004
Frequency Range	5180-5320MHz, 5500-5700MHz
Number of Channels	802.11a/n-20MHz: 19; 802.11n-40MHz: 9
Data Rate	802.11a: 6 - 54Mbps 802.11n: 6.5-300Mbps
Channel Control	Auto
Type of Modulation	802.11a/n:OFDM, BPSK, QPSK, 16QAM, 64QAM
Antenna type	PIFA
Antenna Gain	Refer to the table "Antenna List"
Power Adapter	MFR: UMEC, M/N: UP0251B-12PA Input: AC 100-240V, 50-60Hz, 0.6A Output: DC 12V, 2.1A, 25W Cable Out: Non-Shielded, 1.7m
Contain Module	U-MEDIA / WMD-702K

Antenna List

No.	Manufacturer	Part No.	Peak Gain
1	FAVORTRON	E773700180 (Main) E773700180 (Aux) E773700180 (MIMO)	4.69dBi in 2.4 GHz 4.87dBi in 5GHz

Note: The antenna of EUT is conform to FCC 15.203

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

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 36:	5180 MHz	Channel 40:	5200 MHz	Channel 44:	5220 MHz	Channel 48:	5240 MHz
Channel 52:	5260 MHz	Channel 56:	5280 MHz	Channel 60:	5300 MHz	Channel 64:	5320 MHz
Channel 100:	5500 MHz	Channel 104:	5520 MHz	Channel 108:	5540 MHz	Channel 112:	5560 MHz
Channel 116:	5580 MHz	Channel 120:	5600 MHz	Channel 124:	5620 MHz	Channel 128:	5640 MHz
Channel 132:	5660 MHz	Channel 136:	5680 MHz	Channel 140:	5700 MHz		

802.11n-40MHz Center Working Frequency of Each Channel:

Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
Channel 38:	5190 MHz	Channel 46:	5230 MHz	Channel 54:	5270 MHz	Channel 62:	5310 MHz
Channel 102:	5510 MHz	Channel 110:	5550 MHz	Channel 118:	5590 MHz	Channel 126:	5630 MHz
Channel 134:	5670 MHz						

Note:

1. This device is a ROS Video DMA with a built-in WLAN transceiver.
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 13Mbps 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 Video DMA 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 13,26,39,52,78,104,117 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 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) × 3 (Receive) MIMO technology.

This ROS Video DMA, 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 Video DMA 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.

No ad-hoc operation in the DFS band, Another information please refer to users manual.

Test Mode	Mode 1: Transmitter (802.11a-6Mbps) Mode 2: Transmitter (802.11n-20BW 13Mbps) Mode 3: Transmitter (802.11n-40BW 27Mbps)
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NOTE: 802.11a is tested by Chain A.

802.11n-20MHz / n-40MHz are tested by Chain A + Chain B.

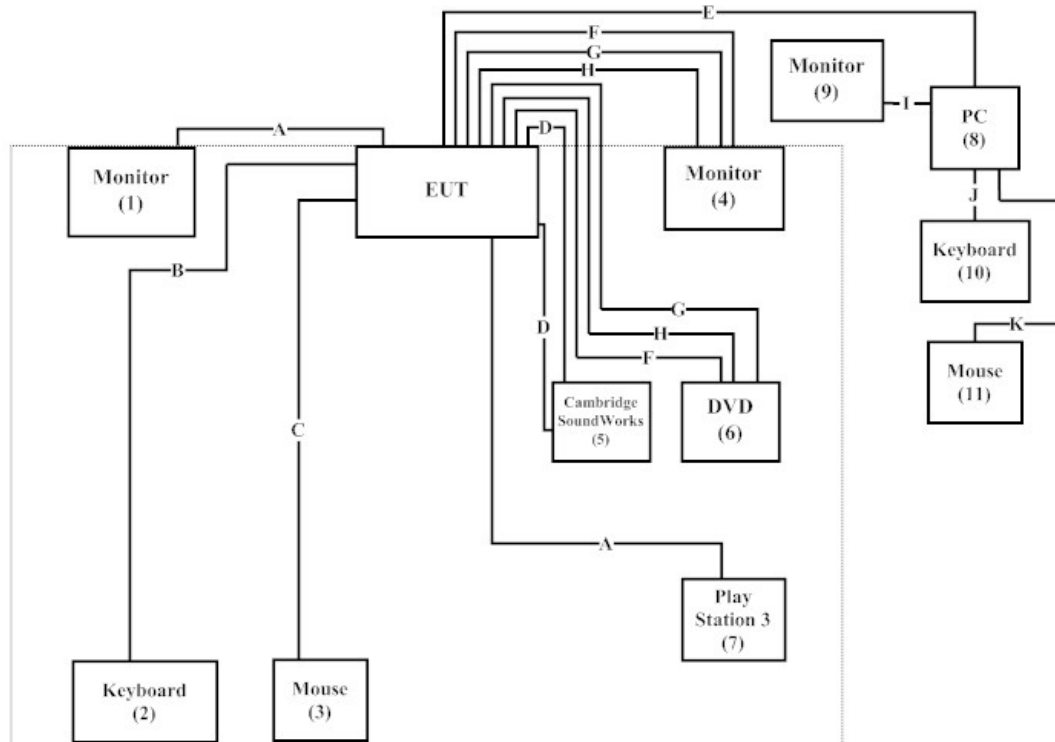
1.3. Tested System Details

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 Monitor	Dell	U2410f	CN-0J257M-72872-985-0JML	Non-Shielded, 1.8m
2 Keyboard	Logitech	Y-UR83	SY848UK	N/A
3 USB Mouse	Logitech	M-UAL-96	LZ923A40023	N/A
4 Monitor	Panasonic	TC-26VPK	N/A	Non-Shielded, 1.8m
5 Cambridge SoundWorks	Creative	S80130	AM01302400003563	Non-Shielded, 1.9m
6 DVD PLAYER	Panasonic	DVD-S97	VC6GG001063R	Non-Shielded, 1.9m
7 Play Station 3	SONY	CECHL07	03-27438581-4506054-CECHL07	Non-Shielded, 1.8m
8 PC	N/A	N/A	N/A	Non-Shielded, 1.8m
9 Monitor	Dell	2408WFPb	CN-0G293H-74261-95M-1H6S	N/A
10 Keyboard	COMPAQ	KB-0133	B55940MGAPK00K	N/A
11 Mouse	HP	M-S69	N/A	N/A

Signal Cable Type	Signal cable Description
A HDMI Cable	Shielded, 1.8m, two PCS.
B Keyboard Cable	Shielded, 1.8m
C Mouse Cable	Shielded, 1.8m
D Fiber Cable	Non-Shielded, 1.5m, two PCS.
E LAN Cable	Non-Shielded, 5.0m
F S-Video Cable	Shielded, 1.6m, two PCS.
G RCA Cable	Non-Shielded, 1.2m, two PCS.
H YPbPr Cable	Non-Shielded, 1.2m, two PCS.
I D-SUB Cable	Shielded, 1.8m, with two ferrite cores bonded.
J PS/ 2 Keyboard Cable	Shielded, 1.8m
K PS/ 2 Mouse Cable	Shielded, 1.8m

1.4. Configuration of tested System



1.5. EUT Exercise Software

- (1) Setup the EUT as shown in section 1.4
- (2) Execute the “DUT GUI” program (the continuous transmission program) on the EUT.
- (3) Setup the test mode, the test channel, and the data rate.
- (4) Press OK to start the transmission.
- (5) Verify that the EUT works correctly.

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://tw.quietek.com/tw/emc/accreditations/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
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FCC Engineering Laboratory
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Columbia, MD 21046
Registration Number: 92195



Accreditation on NVLAP
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FCC Accreditation Number: TW1014



2. Conducted Emission

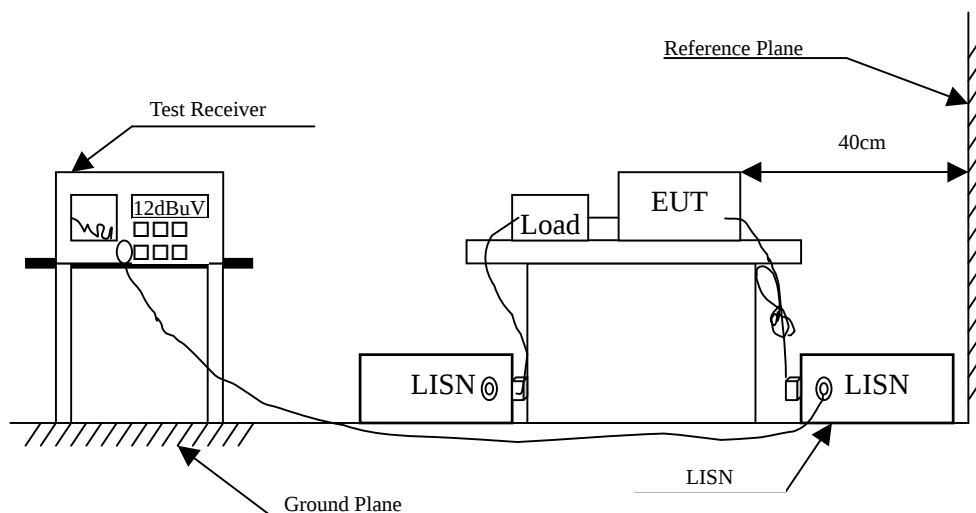
2.1. Test Equipment

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, 2010	
2	L.I.S.N.	R & S	ESH3-Z5/825016/6	May, 2010	EUT
3	L.I.S.N.	Kyoritsu	KNW-407/8-1420-3	May, 2010	Peripherals
4	Pulse Limiter	R & S	ESH3-Z2	May, 2010	
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 Video DMA
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.181	9.724	43.510	53.234	-11.880	65.114
0.240	9.680	37.390	47.070	-16.359	63.429
0.295	9.652	27.640	37.292	-24.565	61.857
0.365	9.650	26.000	35.650	-24.207	59.857
0.408	9.647	31.140	40.787	-17.842	58.629
0.478	9.640	29.190	38.830	-17.799	56.629
Average					
0.181	9.724	28.210	37.934	-17.180	55.114
0.240	9.680	25.950	35.630	-17.799	53.429
0.295	9.652	17.800	27.452	-24.405	51.857
0.365	9.650	17.250	26.900	-22.957	49.857
0.408	9.647	21.500	31.147	-17.482	48.629
0.478	9.640	23.190	32.830	-13.799	46.629

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 : ROS Video DMA
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5190MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.173	9.739	42.430	52.169	-13.174	65.343
0.240	9.690	34.670	44.360	-19.069	63.429
0.298	9.660	26.980	36.640	-25.131	61.771
0.408	9.650	27.940	37.590	-21.039	58.629
0.490	9.640	28.400	38.040	-18.246	56.286
1.712	9.680	22.580	32.260	-23.740	56.000
Average					
0.173	9.739	30.900	40.639	-14.704	55.343
0.240	9.690	32.910	42.600	-10.829	53.429
0.298	9.660	15.380	25.040	-26.731	51.771
0.408	9.650	15.510	25.160	-23.469	48.629
0.490	9.640	19.970	29.610	-16.676	46.286
1.712	9.680	13.100	22.780	-23.220	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

Product : ROS Video DMA
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5270MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.181	9.724	43.710	53.434	-11.680	65.114
0.244	9.679	36.200	45.879	-17.435	63.314
0.295	9.652	27.660	37.312	-24.545	61.857
0.369	9.650	23.840	33.490	-26.253	59.743
0.412	9.646	31.820	41.466	-17.048	58.514
0.486	9.640	29.530	39.170	-17.230	56.400
Average					
0.181	9.724	36.930	46.654	-8.460	55.114
0.244	9.679	20.590	30.269	-23.045	53.314
0.295	9.652	15.130	24.782	-27.075	51.857
0.369	9.650	7.180	16.830	-32.913	49.743
0.412	9.646	26.550	36.196	-12.318	48.514
0.486	9.640	25.450	35.090	-11.310	46.400

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 : ROS Video DMA
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5270MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.181	9.732	42.220	51.952	-13.162	65.114
0.244	9.689	34.050	43.739	-19.575	63.314
0.302	9.660	26.580	36.240	-25.417	61.657
0.357	9.654	25.450	35.104	-24.982	60.086
0.412	9.650	28.120	37.770	-20.744	58.514
0.478	9.640	28.660	38.300	-18.329	56.629
Average					
0.181	9.732	38.060	47.792	-7.322	55.114
0.244	9.689	24.960	34.649	-18.665	53.314
0.302	9.660	14.190	23.850	-27.807	51.657
0.357	9.654	14.970	24.624	-25.462	50.086
0.412	9.650	21.290	30.940	-17.574	48.514
0.478	9.640	23.340	32.980	-13.649	46.629

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 : ROS Video DMA
 Test Item : Conducted Emission Test
 Power Line : Line 1
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5590MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 1					
Quasi-Peak					
0.158	9.756	22.420	32.176	-33.595	65.771
0.181	9.724	43.790	53.514	-11.600	65.114
0.240	9.680	37.310	46.990	-16.439	63.429
0.295	9.652	27.660	37.312	-24.545	61.857
0.423	9.642	30.740	40.382	-17.818	58.200
20.267	9.910	16.670	26.580	-33.420	60.000
Average					
0.158	9.756	5.310	15.066	-40.705	55.771
0.181	9.724	35.000	44.724	-10.390	55.114
0.240	9.680	29.540	39.220	-14.209	53.429
0.295	9.652	18.540	28.192	-23.665	51.857
0.423	9.642	27.090	36.732	-11.468	48.200
20.267	9.910	12.120	22.030	-27.970	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 : ROS Video DMA
 Test Item : Conducted Emission Test
 Power Line : Line 2
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps) (5590MHz)

Frequency	Correct	Reading	Measurement	Margin	Limit
MHz	Factor	Level	Level		
	dB	dBuV	dBuV	dB	dBuV
LINE 2					
Quasi-Peak					
0.177	9.736	42.710	52.446	-12.783	65.229
0.232	9.695	34.530	44.225	-19.432	63.657
0.295	9.662	27.200	36.862	-24.995	61.857
0.357	9.654	25.350	35.004	-25.082	60.086
0.416	9.650	28.060	37.710	-20.690	58.400
0.486	9.640	28.970	38.610	-17.790	56.400
Average					
0.177	9.736	22.320	32.056	-23.173	55.229
0.232	9.695	29.770	39.465	-14.192	53.657
0.295	9.662	18.470	28.132	-23.725	51.857
0.357	9.654	16.020	25.674	-24.412	50.086
0.416	9.650	20.670	30.320	-18.080	48.400
0.486	9.640	22.870	32.510	-13.890	46.400

Note:

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

3. Peak Transmit Power

3.1. Test Equipment

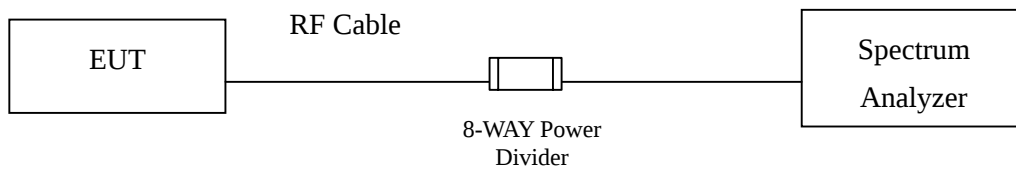
	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
X	Power Meter	Anritsu	ML2495A/6K00003357	May, 2010
X	Power Sensor	Anritsu	MA2411B/0738448	Jun, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2010
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2010

Note:

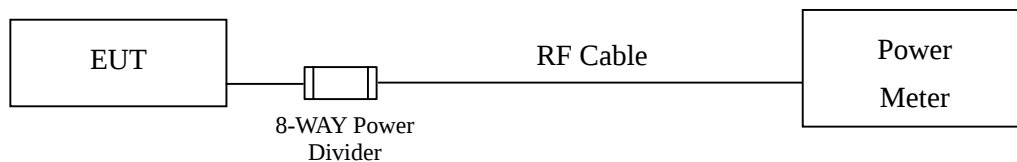
1. All equipments are calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.
2. The test instruments marked with “X” are used to measure the final test results.

3.2. Test Setup

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 Video DMA
Test Item : Peak Transmit Power
Test Site : No.3 OATS
Test Mode : Mode 1: Transmitter (802.11a-6Mbps)

Cable loss=1dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		6	9	12	18	24	36	48	54	
		Measurement Level (dBm)								
36	5180	15.68	--	--	--	--	--	--	--	<17dBm
44	5220	15.82	15.79	15.78	15.75	15.76	15.68	15.73	15.66	<17dBm
48	5240	15.85	--	--	--	--	--	--	--	<17dBm
52	5260	15.82	--	--	--	--	--	--	--	<24dBm
60	5300	15.87	15.85	15.83	15.82	15.8	15.78	15.75	15.73	<24dBm
64	5320	15.83	--	--	--	--	--	--	--	<24dBm
100	5500	15.93	--	--	--	--	--	--	--	<24dBm
120	5600	15.94	15.92	15.91	15.89	15.87	15.85	15.83	15.81	<24dBm
140	5700	15.89	--	--	--	--	--	--	--	<24dBm

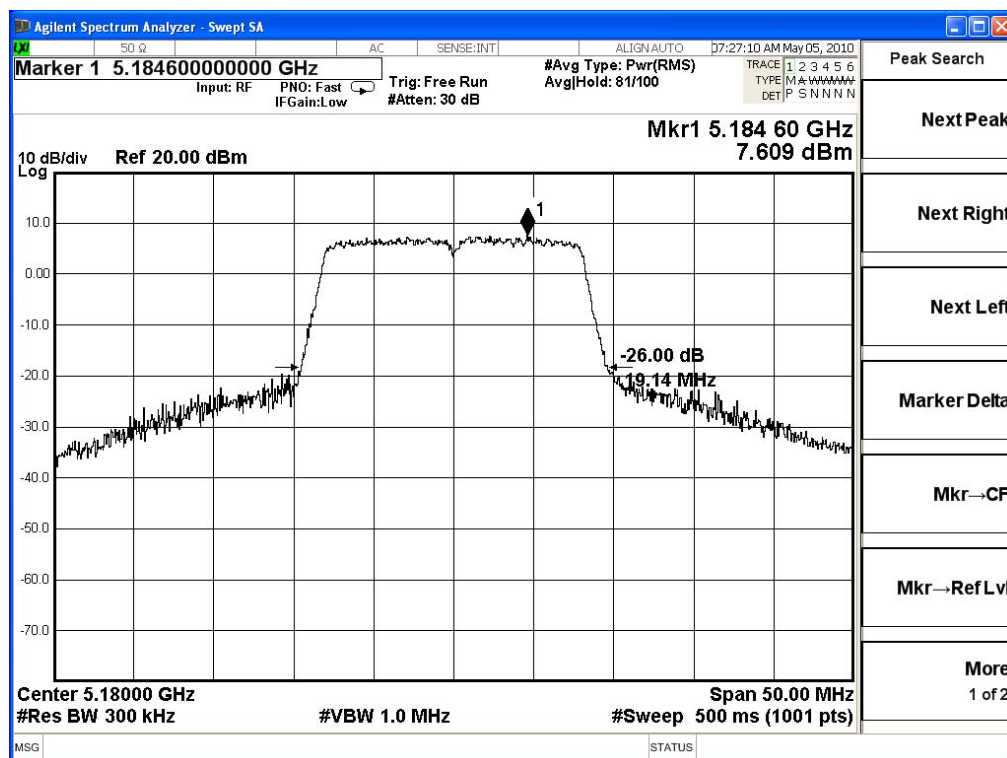
Note: 1. Peak Power Output Value =Reading value on peak power meter + cable loss
2. Using 8-Way Power Divider (factor =10dB), to compensate in the spectrum.

Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
36	5180	19.14	15.68	17	16.82	Pass

26dBc Occupied Bandwidth:

Channel 36

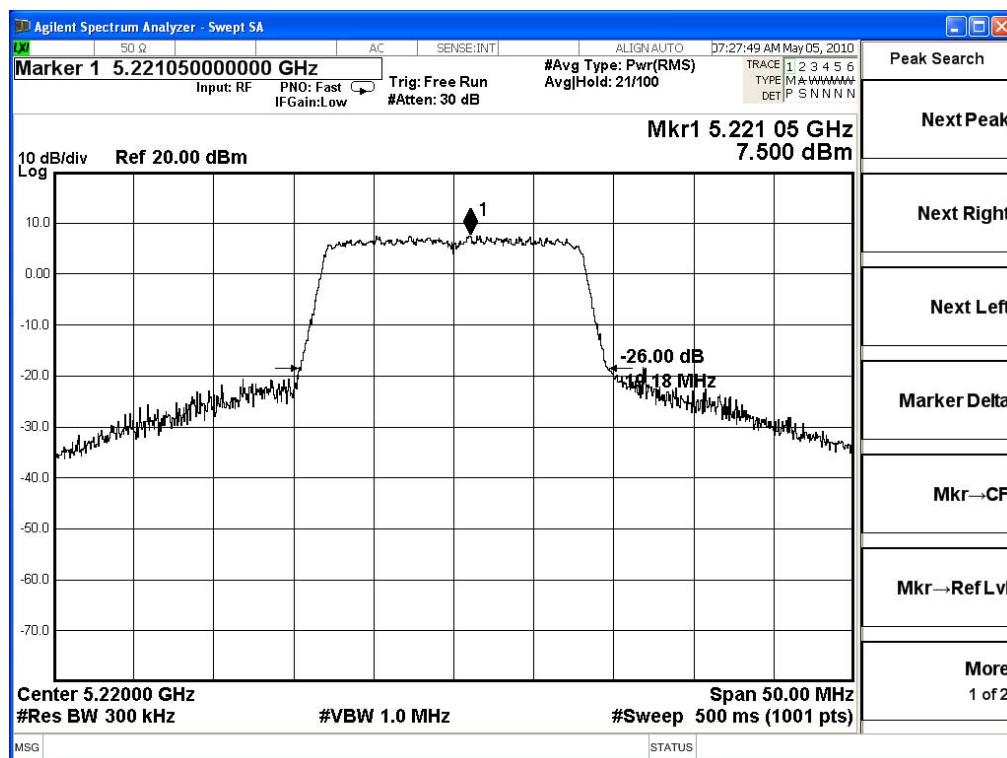


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
44	5220	19.18	15.82	17	16.83	Pass

26dBc Occupied Bandwidth:

Channel 40

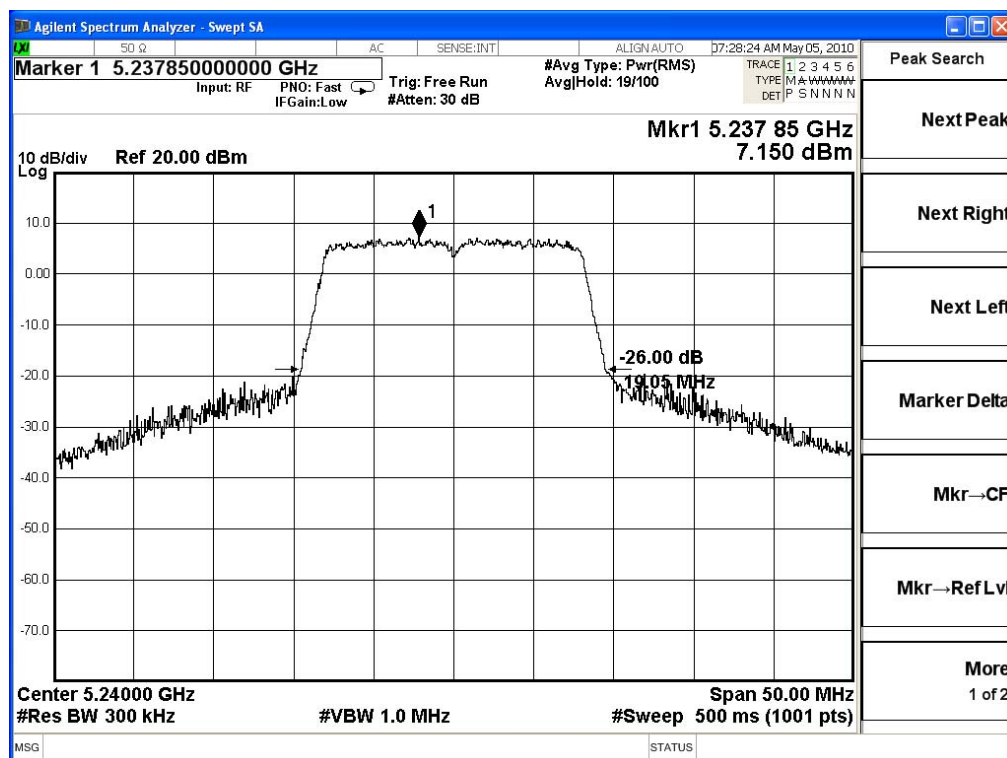


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
48	5240	19.05	15.85	17	16.80	Pass

26dBc Occupied Bandwidth:

Channel 48

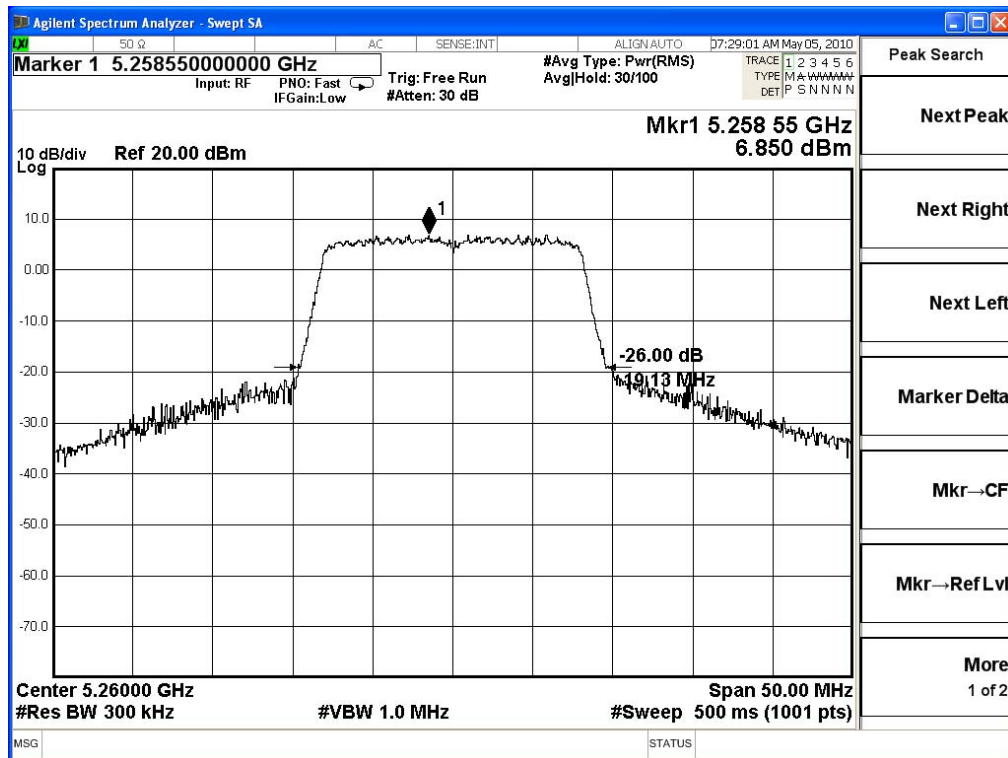


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
52	5260	19.13	15.82	24	23.82	Pass

26dBc Occupied Bandwidth:

Channel 52

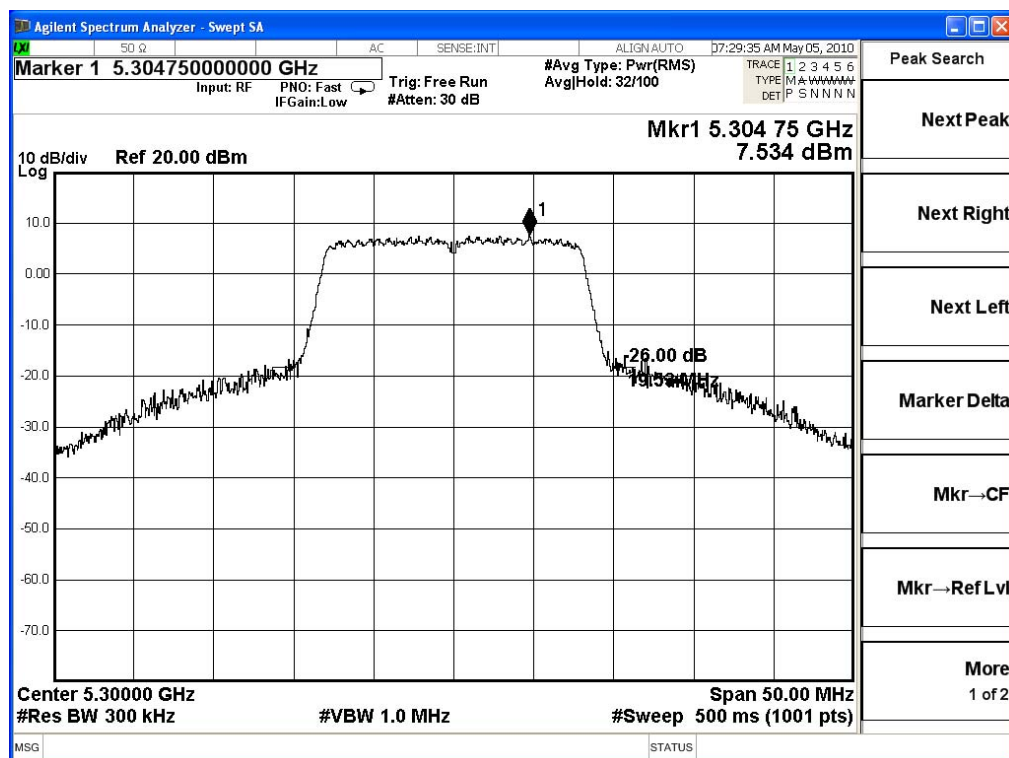


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
60	5300	19.53	15.87	24	23.96	Pass

26dBc Occupied Bandwidth:

Channel 60

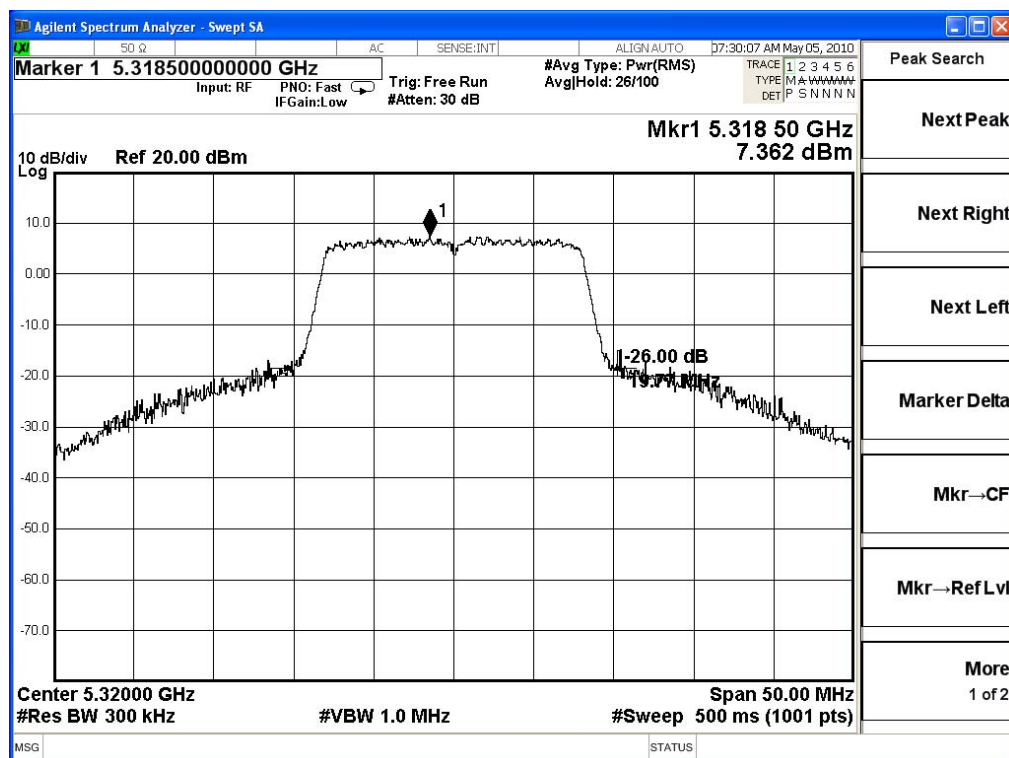


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
64	5320	19.77	15.83	24	23.96	Pass

26dBc Occupied Bandwidth:

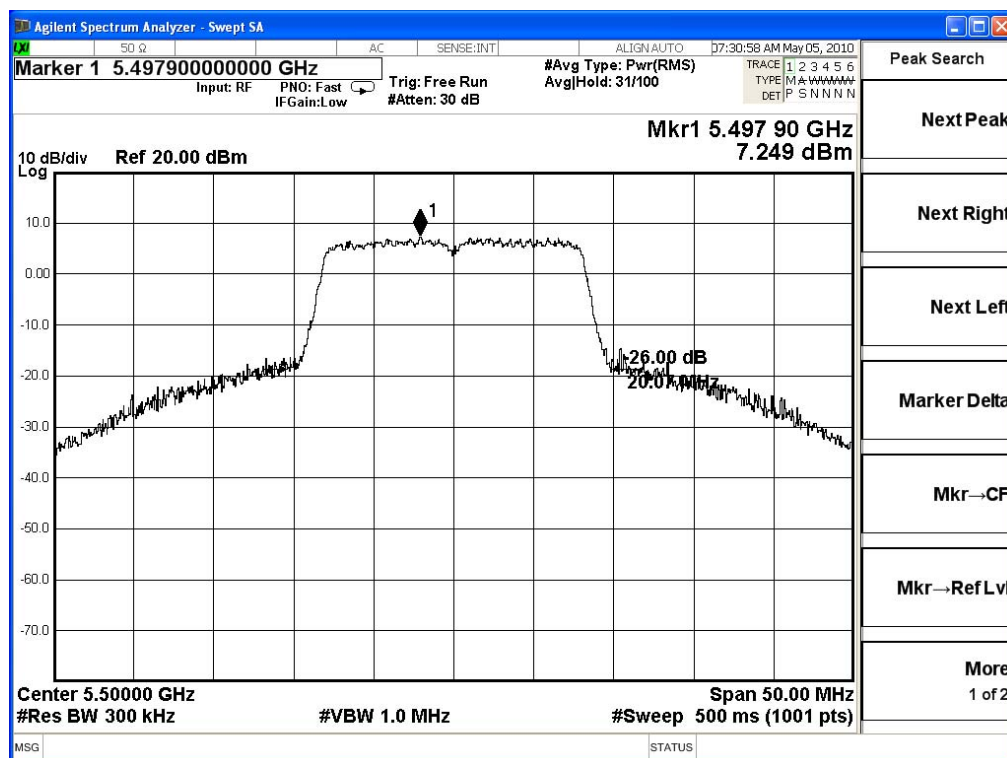
Channel 64



Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
100	5500	20.07	15.93	24	24.03	Pass

**26dBc Occupied Bandwidth:
Channel 100**

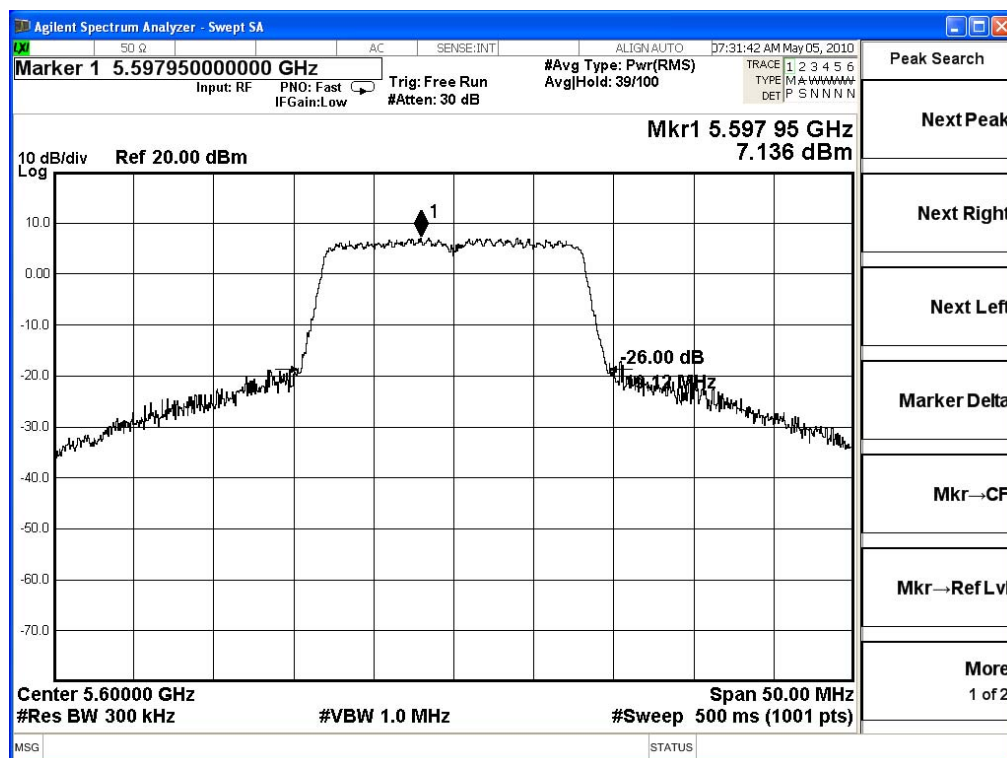


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
120	5600	19.12	15.94	24	23.81	Pass

26dBc Occupied Bandwidth:

Channel 120

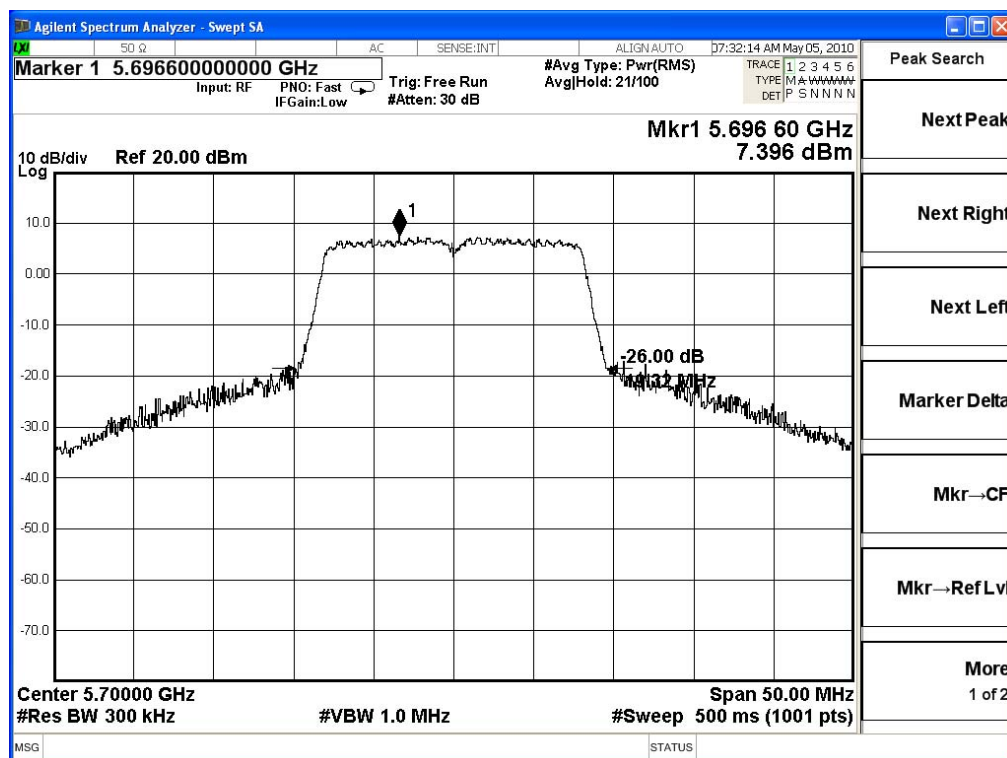


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
140	5700	19.32	15.89	24	23.86	Pass

26dBc Occupied Bandwidth:

Channel 140



Product : ROS Video DMA
 Test Item : Peak Transmit Power
 Test Site : No.3 OATS
 Test Mode : Mode 2: Transmitter (802.11n-20BW 13Mbps)

Cable loss=1dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		13	26	39	52	78	104	117	130	
		Measurement Level (dBm)								
36	5180	15.87	--	--	--	--	--	--	--	<17dBm
44	5220	15.83	15.81	15.77	15.74	15.73	15.68	15.69	15.65	<17dBm
48	5240	15.79	--	--	--	--	--	--	--	<17dBm
52	5260	15.81	--	--	--	--	--	--	--	<24dBm
60	5300	15.81	--	--	--	--	--	--	--	<24dBm
64	5320	15.92	15.89	15.87	15.83	15.81	15.78	15.77	15.75	<24dBm
100	5500	15.95	--	--	--	--	--	--	--	<24dBm
120	5600	15.96	15.93	15.91	15.88	15.85	15.83	15.81	15.79	<24dBm
140	5700	15.81	--	--	--	--	--	--	--	<24dBm

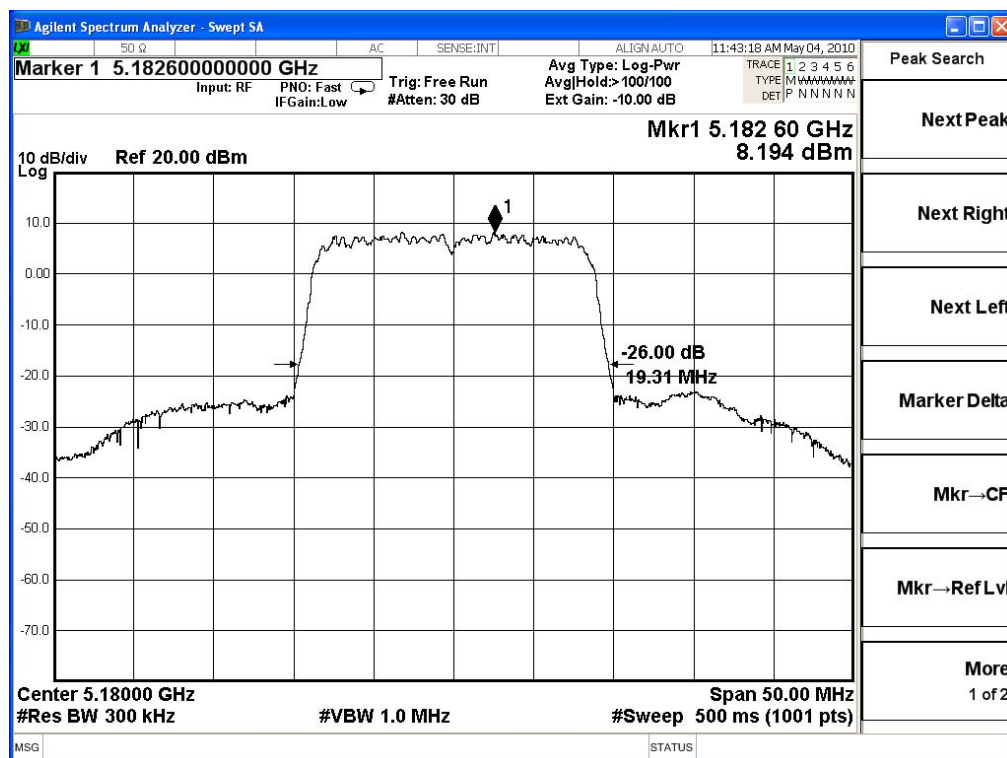
Note: 1. Peak Power Output Value =Reading value on peak power meter + cable loss
 2. Using 8-Way Power Divider (factor =10dB), to compensate in the spectrum.

Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
36	5180	19.31	15.87	17	16.86	Pass

26dBc Occupied Bandwidth:

Channel 36

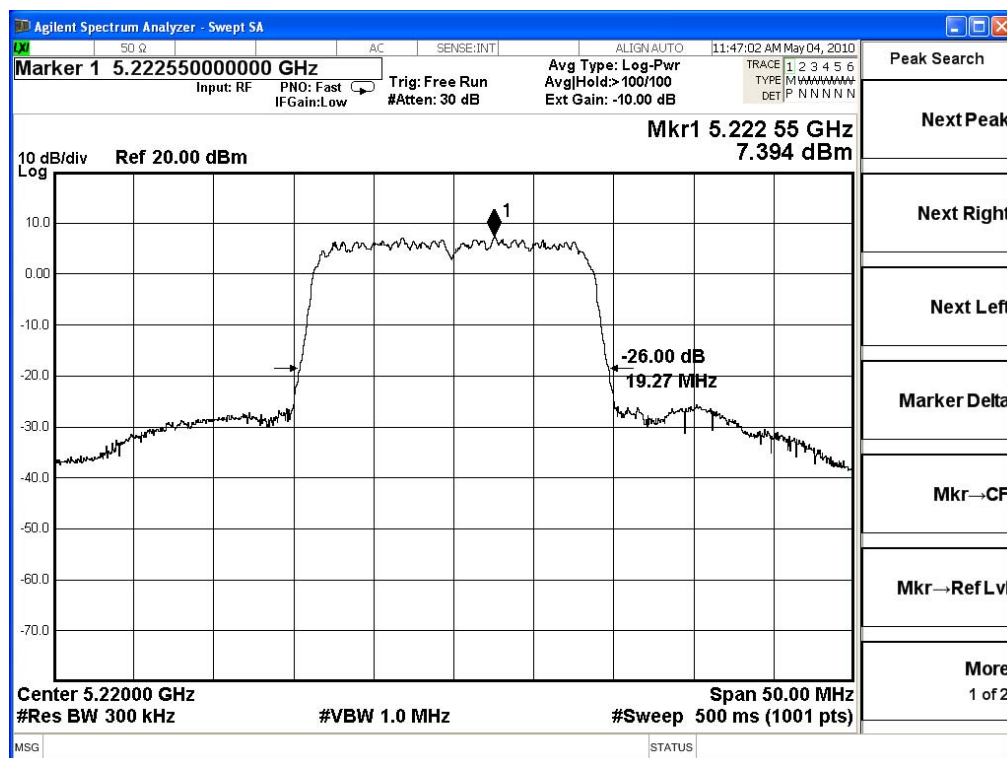


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
44	5220	19.27	15.83	17	16.85	Pass

26dBc Occupied Bandwidth:

Channel 44

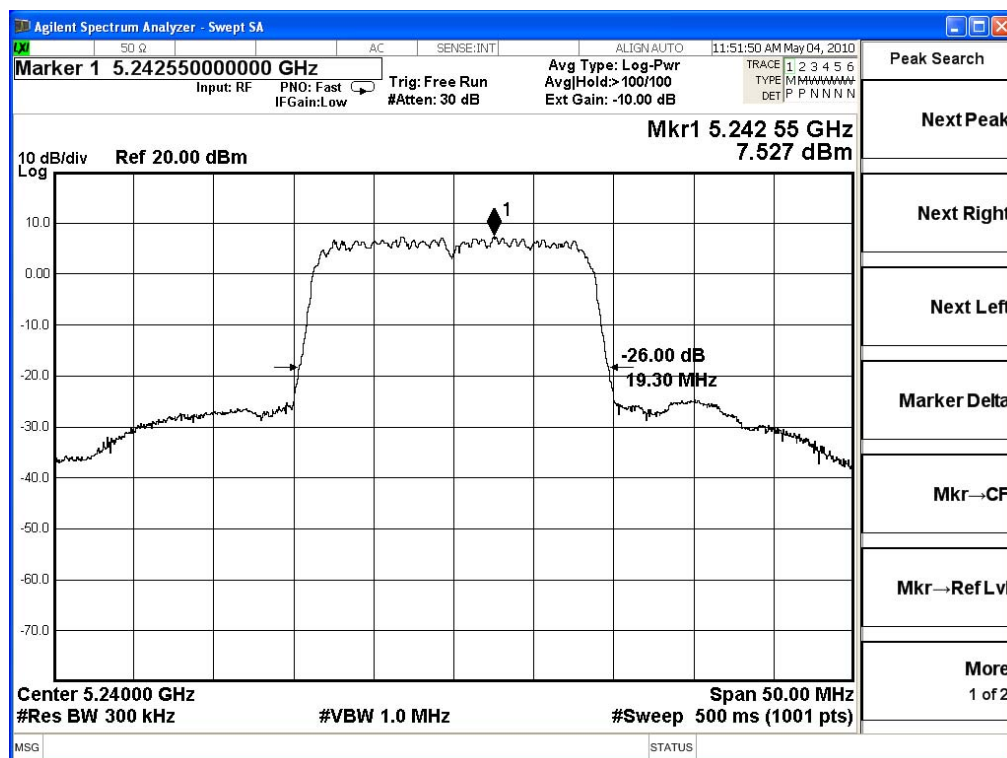


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
48	5240	19.3	15.79	17	16.86	Pass

26dBc Occupied Bandwidth:

Channel 48

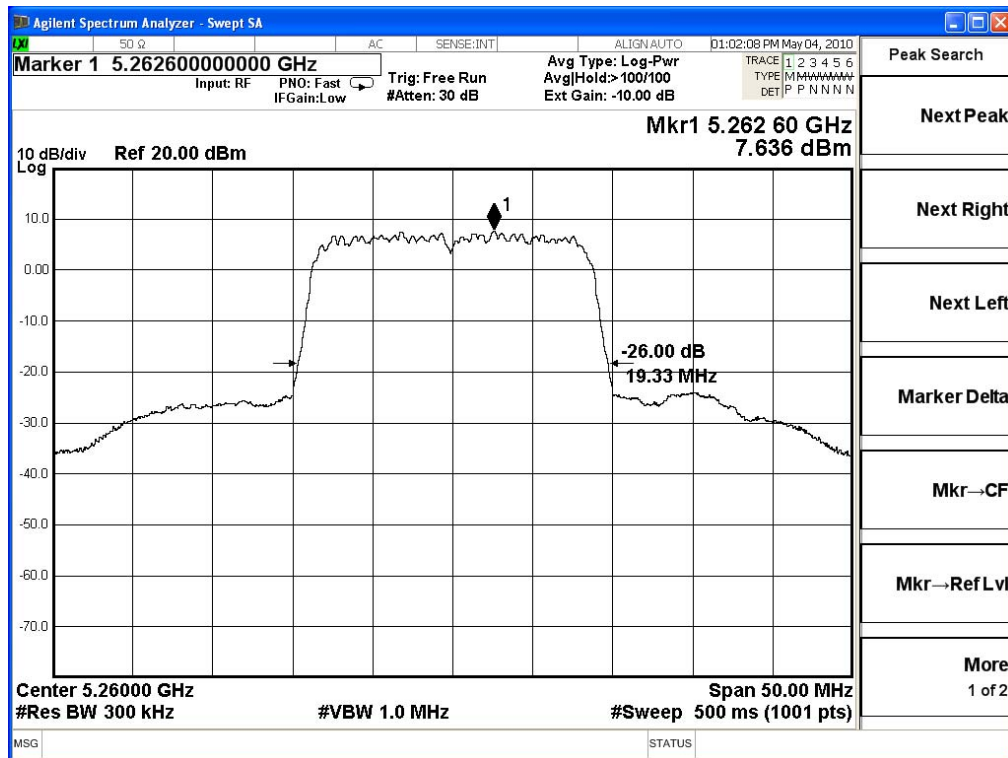


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
52	5260	19.33	15.81	24	23.86	Pass

26dBc Occupied Bandwidth:

Channel 52

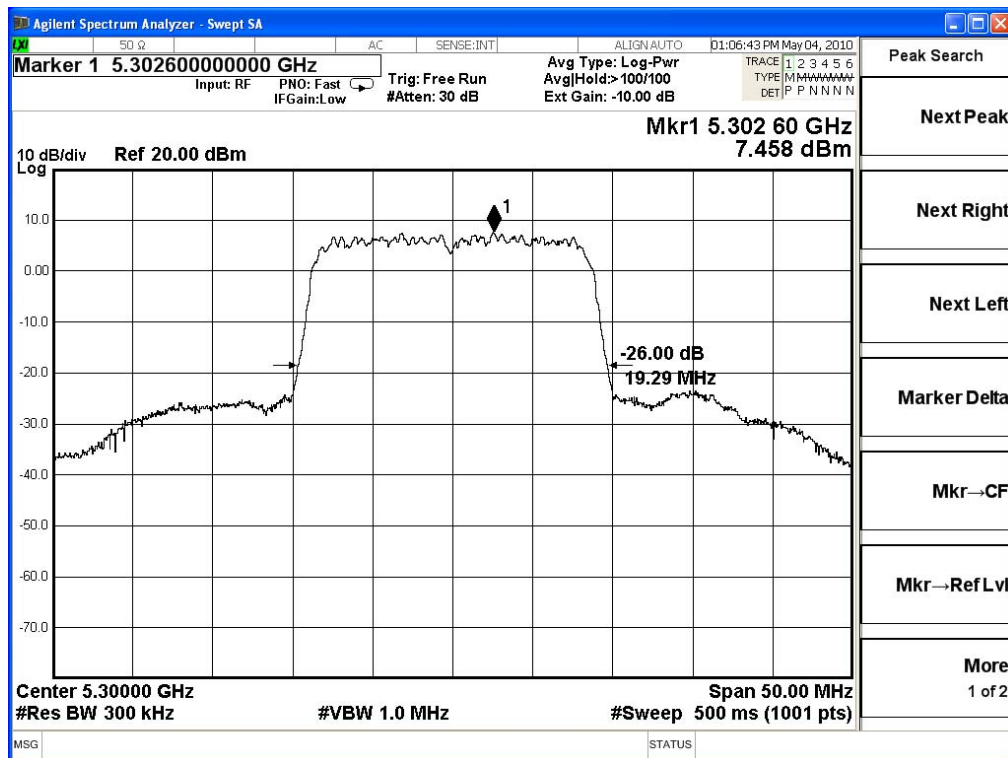


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
60	5300	19.29	15.81	24	23.85	Pass

26dBc Occupied Bandwidth:

Channel 60

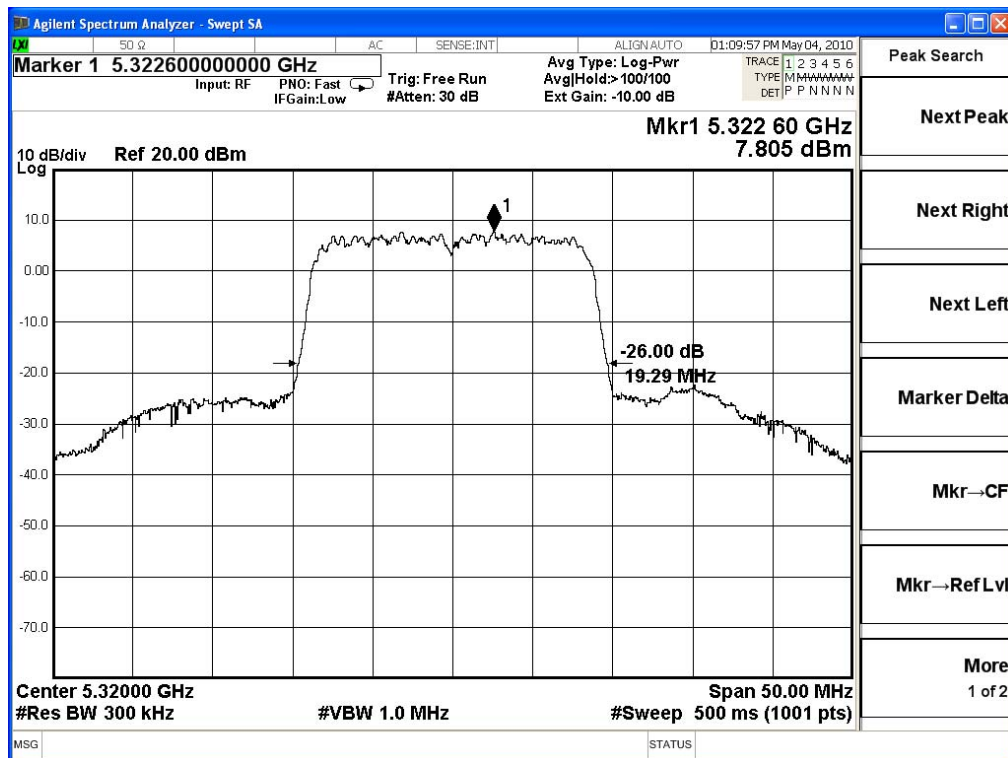


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
64	5320	19.29	15.92	24	23.85	Pass

26dBc Occupied Bandwidth:

Channel 64

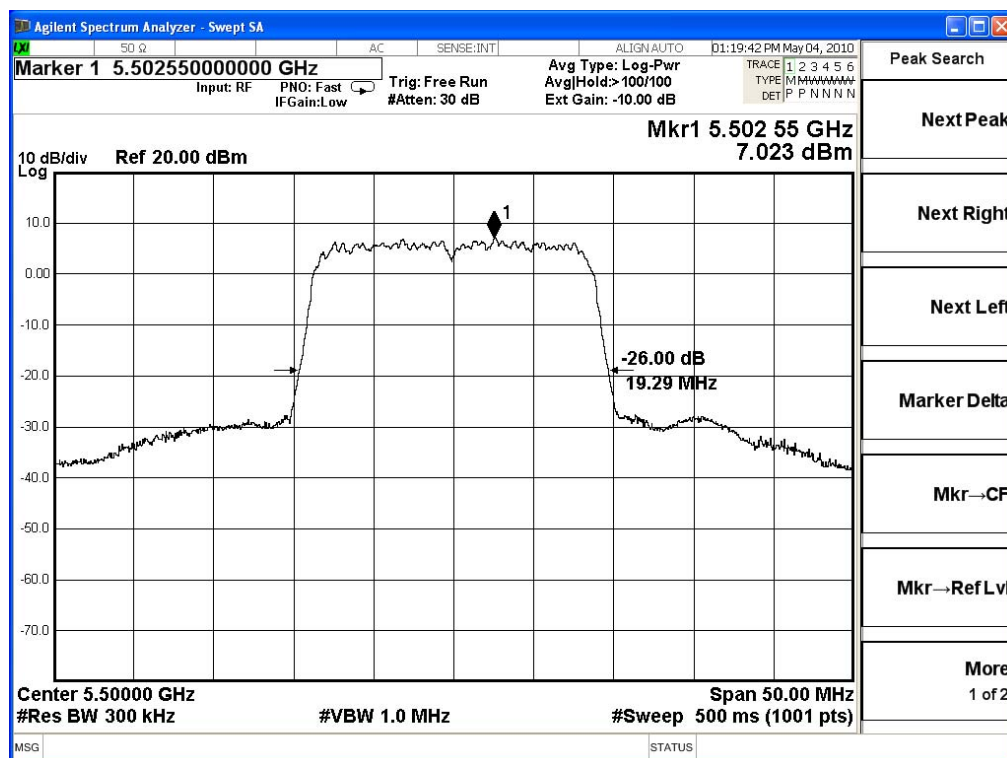


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
100	5500	19.29	15.95	24	23.85	Pass

26dBc Occupied Bandwidth:

Channel 100

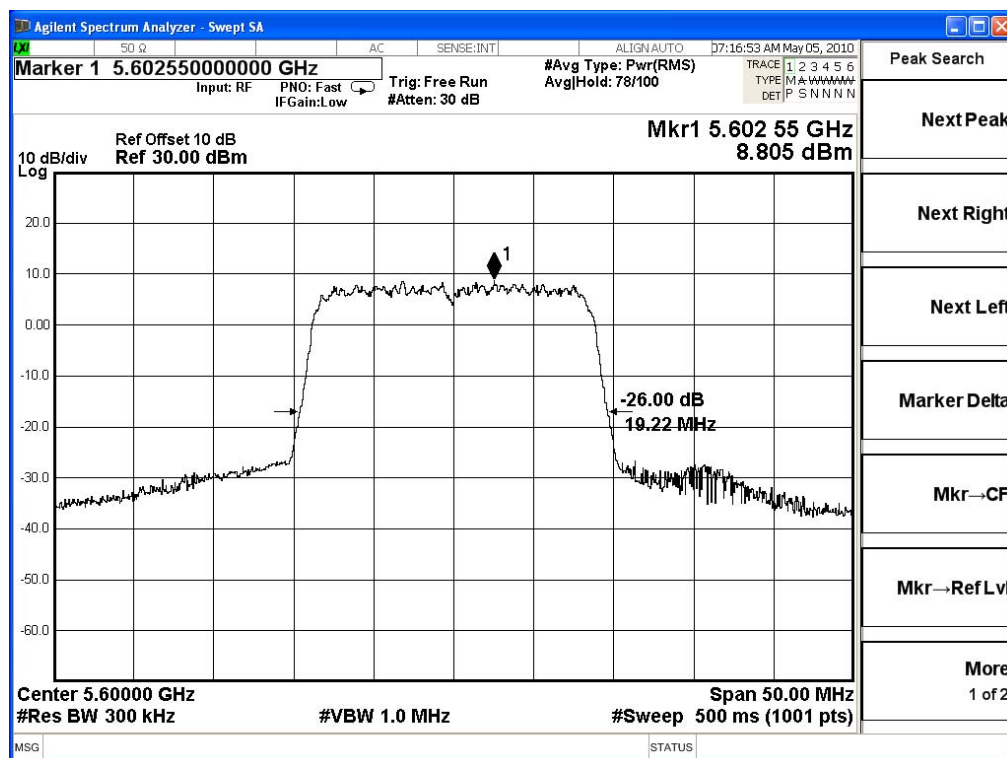


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
120	5600	19.22	15.96	24	23.84	Pass

26dBc Occupied Bandwidth:

Channel 120

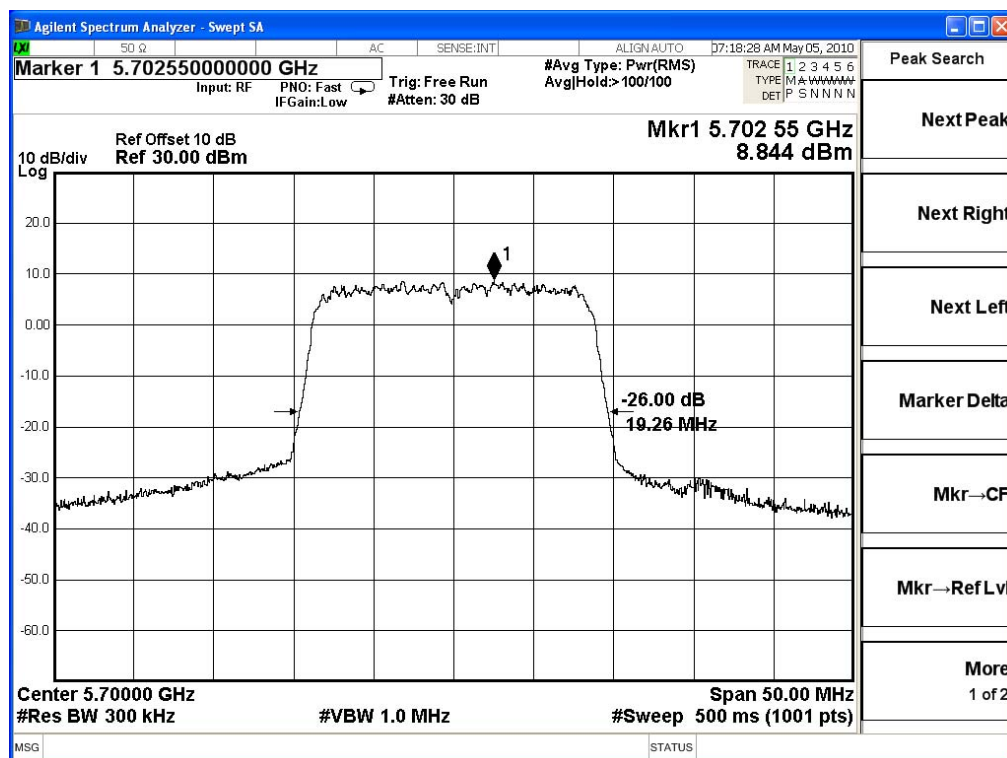


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
140	5700	19.26	15.81	24	23.85	Pass

26dBc Occupied Bandwidth:

Channel 140



Product : ROS Video DMA
 Test Item : Peak Transmit Power
 Test Site : No.3 OATS
 Test Mode : Mode 3: Transmitter (802.11n-40BW 27Mbps)

Cable loss=1dB		Peak Power Output								
Channel No.	Frequency (MHz)	Data Rate (Mbps)								Required Limit
		27	54	81	108	162	216	243	270	
		Measurement Level (dBm)								
38	5190	15.89	15.87	15.85	15.83	15.81	15.79	15.77	15.75	<17dBm
46	5230	15.83	--	--	--	--	--	--	--	<17dBm
54	5270	15.82	15.80	15.77	15.76	15.72	15.73	15.69	15.65	<24dBm
62	5310	15.82	--	--	--	--	--	--	--	<24dBm
102	5510	15.98	--	--	--	--	--	--	--	<24dBm
118	5590	15.97	15.96	15.95	15.93	15.91	15.89	15.83	15.81	<24dBm
134	5670	15.93	--	--	--	--	--	--	--	<24dBm

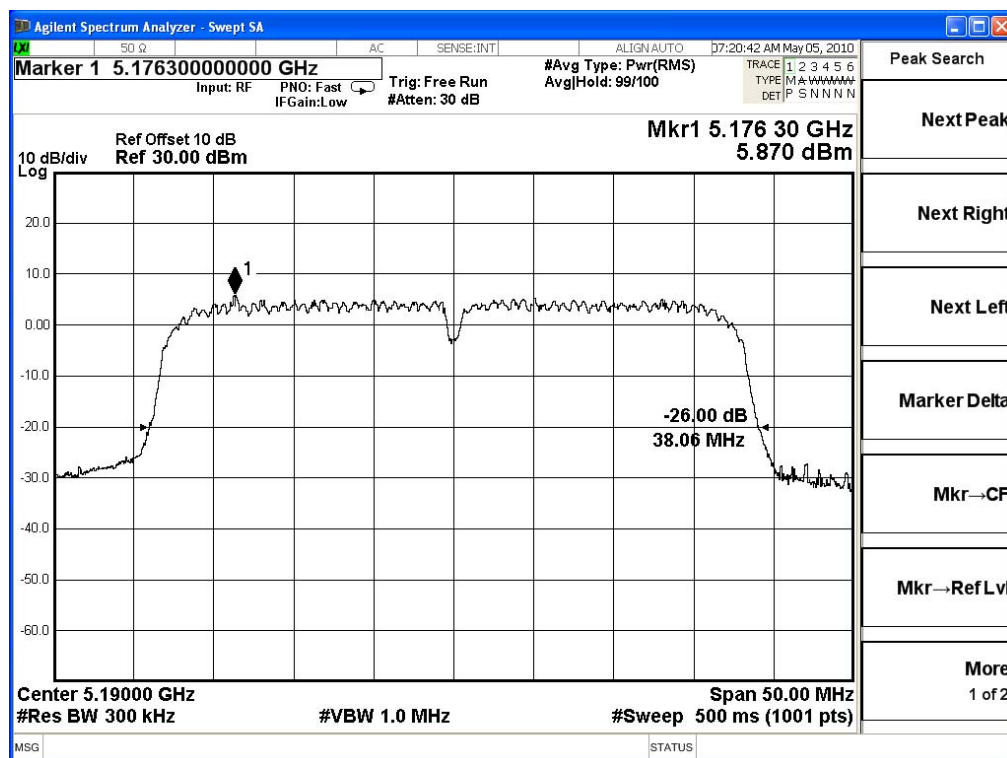
Note: 1. Peak Power Output Value =Reading value on peak power meter + cable loss
 2. Using 8-Way Power Divider (factor =10dB), to compensate in the spectrum.

Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
38	5190	38.06	15.89	17	19.80	Pass

26dBc Occupied Bandwidth:

Channel 38

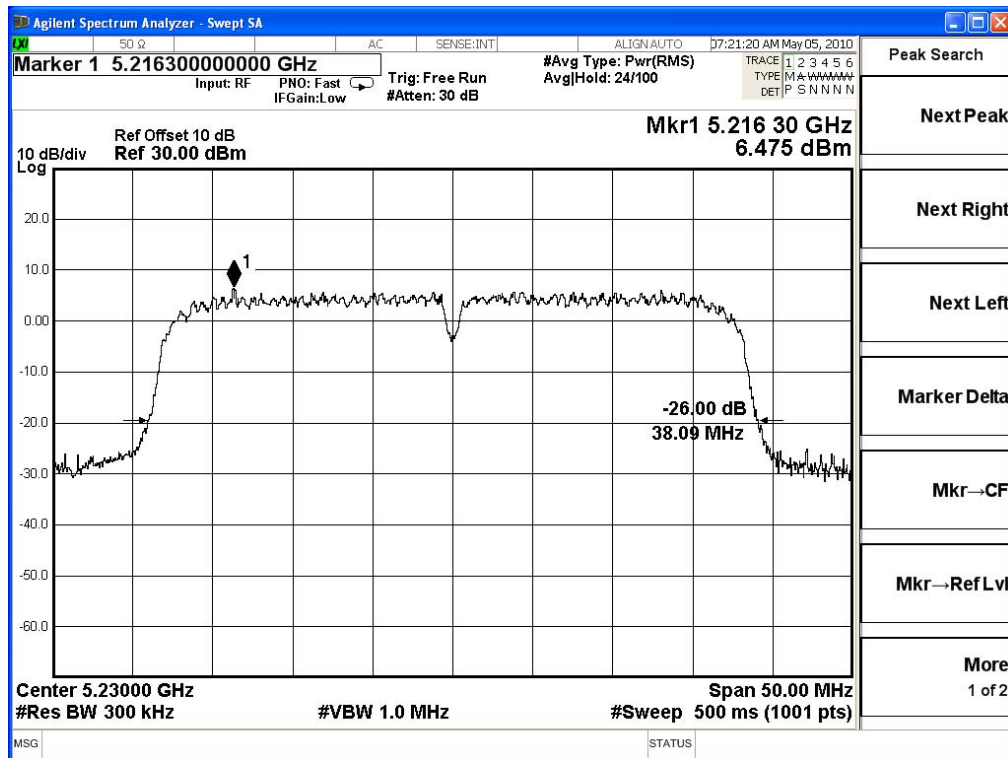


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
46	5230	38.09	15.83	17	19.81	Pass

26dBc Occupied Bandwidth:

Channel 46

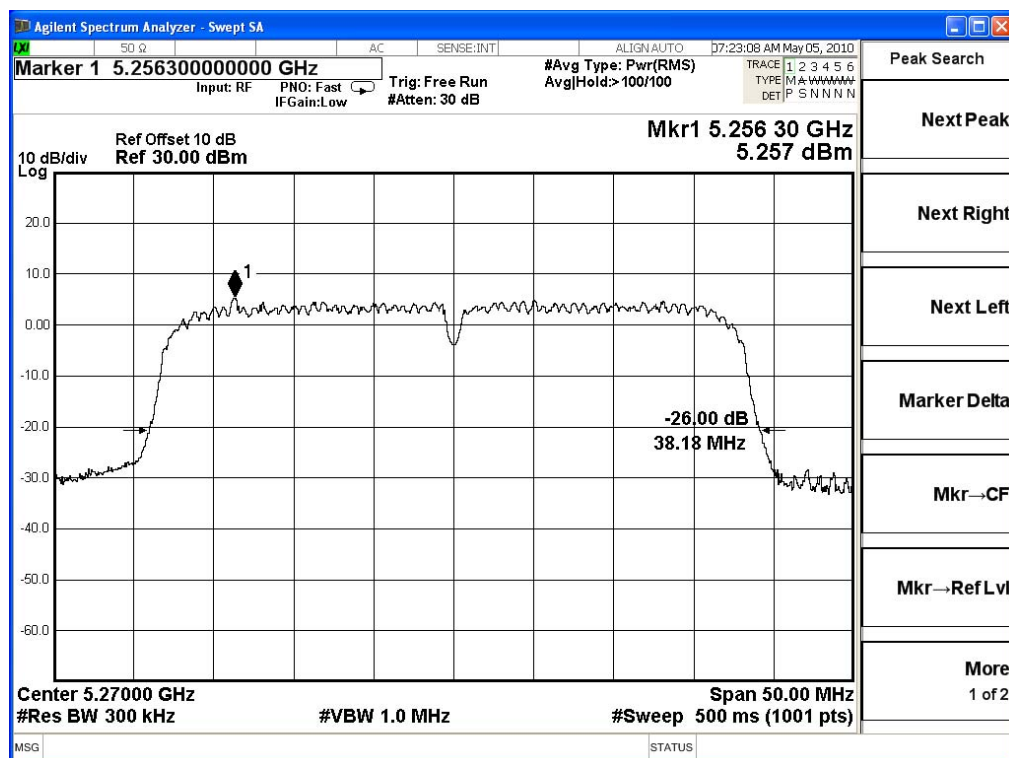


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
54	5270	38.18	15.82	24	26.82	Pass

26dBc Occupied Bandwidth:

Channel 54

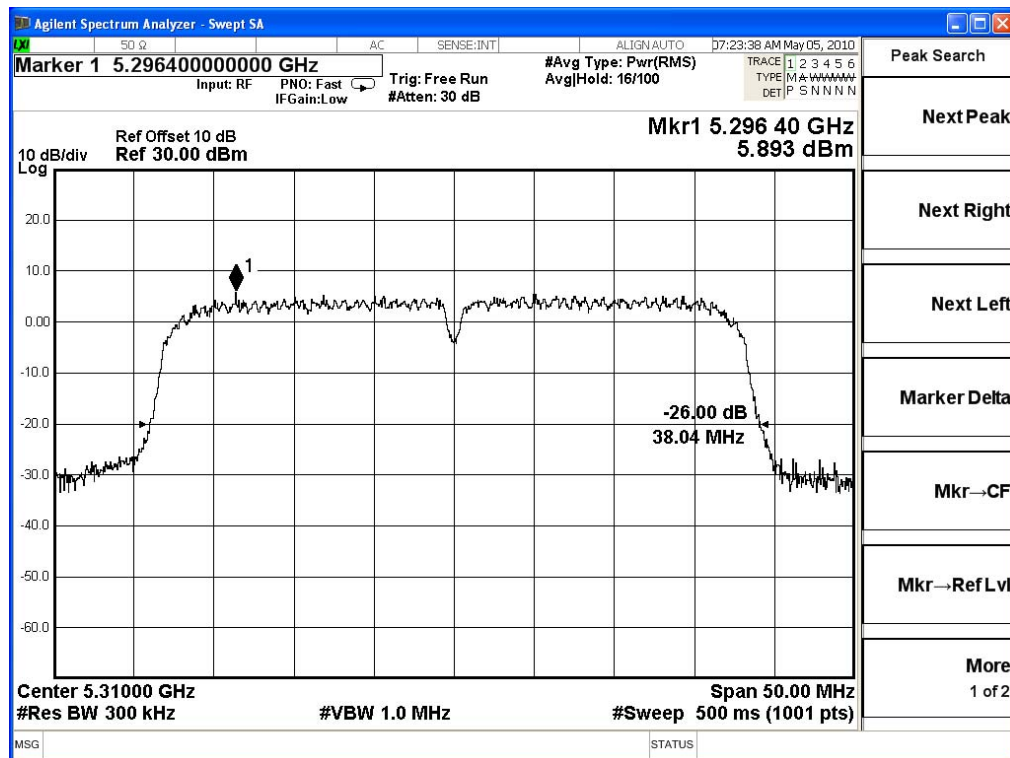


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
62	5310	38.04	15.82	24	26.80	Pass

26dBc Occupied Bandwidth:

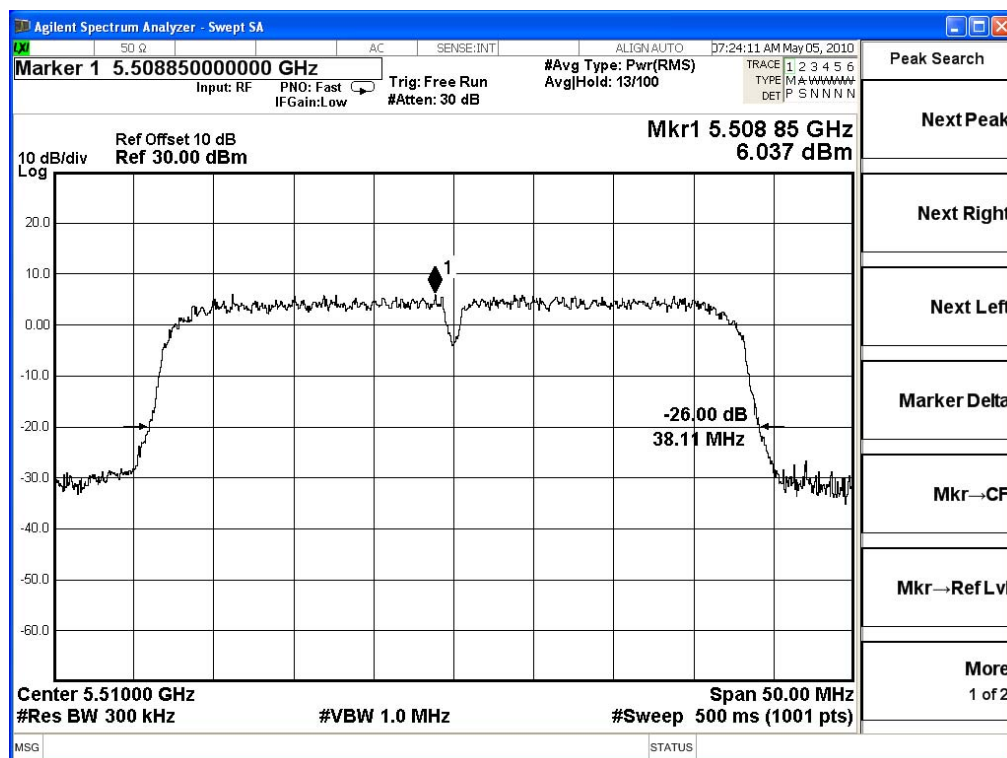
Channel 62



Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
102	5510	38.11	15.98	24	26.81	Pass

**26dBc Occupied Bandwidth:
Channel 102**

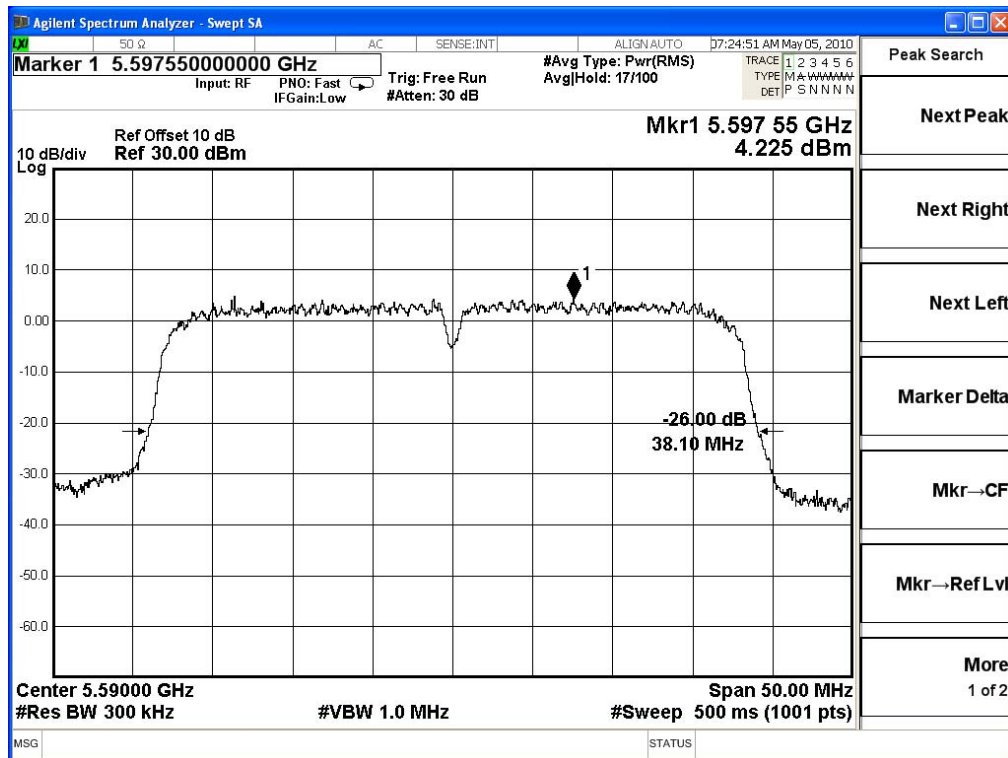


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
118	5590	38.1	15.97	24	26.81	Pass

26dBc Occupied Bandwidth:

Channel 118

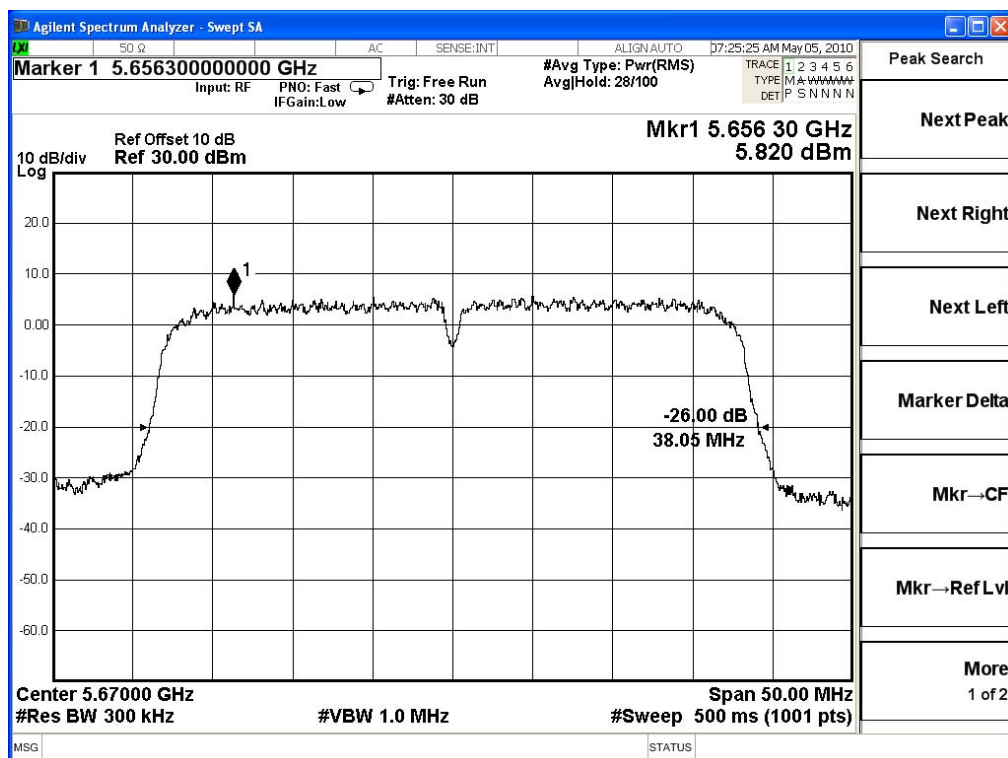


Peak Transmit Power Measurement:

Channel No	Frequency Range (MHz)	26dB Bandwidth (MHz)	Output Power (dBm)	Output Power Limit		Result
				(dBm)	dBm+10log(BW)	
134	5670	38.05	15.93	24	26.80	Pass

26dBc Occupied Bandwidth:

Channel 134



4. Peak Power Spectral Density

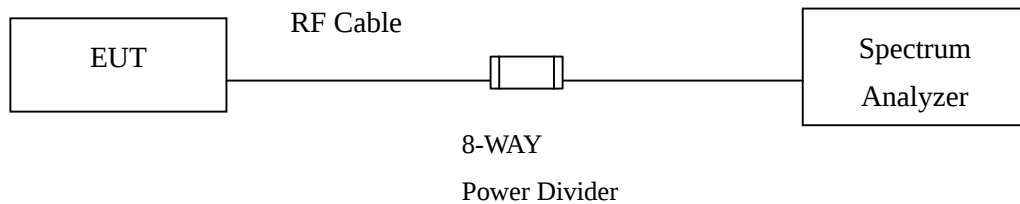
4.1. Test Equipment

	Equipment	Manufacturer	Model No./Serial No.	Last Cal.
	Spectrum Analyzer	R&S	FSP40 / 100170	Jun, 2009
	Spectrum Analyzer	Agilent	E4407B / US39440758	Jun, 2009
X	Spectrum Analyzer	Agilent	N9010A / MY48030495	Apr., 2010
X	8-WAY Power Divider	JFW	50PD-647 / 526770 0916	Apr., 2010

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. The power combiner is used for measure 11n mode.

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