

Product	:	Notebook
Test Item	:	6dB Occupied Bandwidth
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	16500	500	Pass
06	2437	16500	500	Pass
11	2462	16450	500	Pass

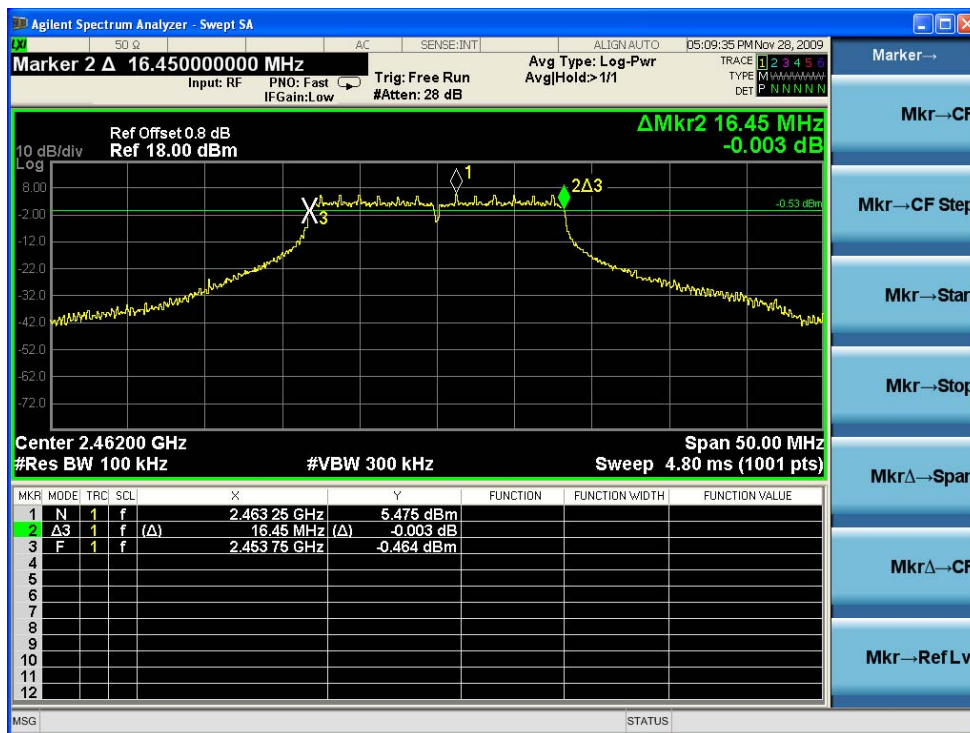
Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



Product	:	Notebook
Test Item	:	6dB Occupied Bandwidth
Test Mode	:	Mode 3: Transmit by 802.11n (20MHz)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
01	2412	17700	500	Pass
06	2437	17700	500	Pass
11	2462	17700	500	Pass

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



Product	:	Notebook
Test Item	:	6dB Occupied Bandwidth
Test Mode	:	Mode 4: Transmit by 802.11n (40MHz)

Channel No.	Frequency (MHz)	Occupied Bandwidth (kHz)	Limit (kHz)	Result
03	2422	36320	500	Pass
06	2437	36480	500	Pass
09	2452	36480	500	Pass

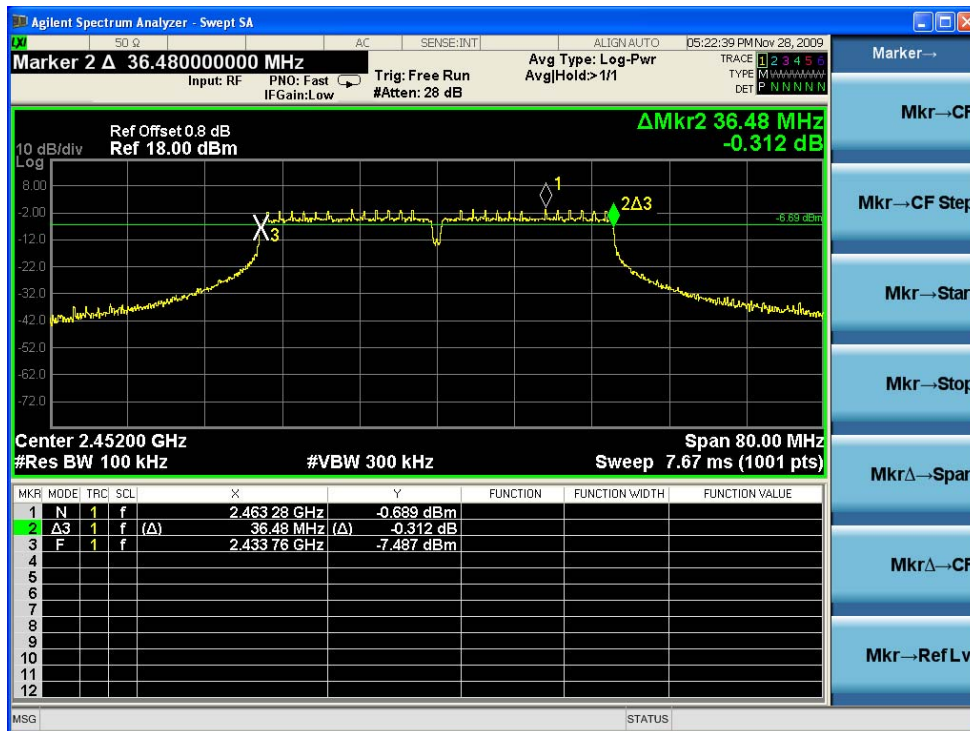
Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)



9. Power Output

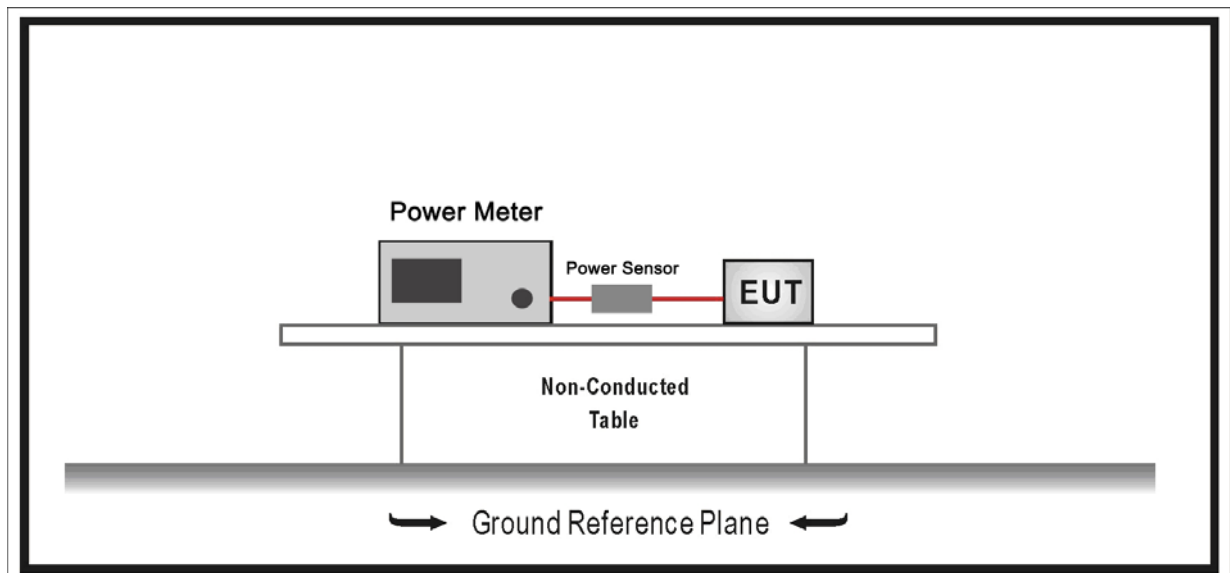
9.1. Test Equipment

Power Output / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Wideband Peak Power Meter	Anritsu	ML2495A	0905006	2009/02/12
Power Sensor	Anritsu	MA2411B	0846014	2009/01/12
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/09

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

9.2. Test Setup



9.3. Limit

The maximum peak power shall be less 1 Watt (30dBm).

Note: the conducted output power limit specified above is based on the use the antennas with directional gains that do not exceed 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values above, as appropriate, by the amount in dB that the directional gain of antenna exceeds 6 dBi.

9.4. Test Procedure

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Use the wideband power meter to test peak power and record the result.

9.5. Uncertainty

The measurement uncertainty is defined as ± 1.27 dB

9.6. Test Result

Power output test was verified over all data rates of each mode shown as below, and then choose the maximum power output (blue marker) for final test of each channel.

MCS Index for 802.11n	Spatial Streams	Data Rate (Mbps)					
		802.11b	802.11g	20MHz Bandwidth		40MHz Bandwidth	
				800ns GI	400ns GI	800ns GI	400ns GI
0	1	1	6	6.5	7.2	13.5	15.0
1	1	2	9	13.0	14.4	27.0	30.0
2	1	5.5	12	19.5	21.7	40.5	45.0
3	1	11	18	26.0	28.9	54.0	60.0
4	1	---	24	39.0	43.3	81.0	90.0
5	1	---	36	52.0	57.8	108.0	120.0
6	1	---	48	58.5	65.0	121.5	135.0
7	1	---	54	65.0	72.2	135.0	150.0

Power output at various data rates:

Test Mode	Frequency (MHz)	Channel	Data Rate	Peak Power (dBm)			
802.11b	2437	6	1	18.61			
			2	18.42			
			5.5	18.34			
			11	18.15			
802.11g	2437	6	6	24.77			
			9	24.56			
			12	24.32			
			18	24.18			
			24	24.05			
			36	24.02			
			48	23.78			
			54	23.64			
			802.11n (20M)	2437	6	6.5	25.13
						13.0	25.02
19.5	24.58						
26.0	24.51						
39.0	24.37						
52.0	24.31						
58.5	24.22						
65.0	23.86						
802.11n (40M)	2437	6	13.5	24.12			
			27.0	24.02			
			40.5	23.76			
			54.0	23.54			
			81.0	23.28			
			108.0	23.12			
			121.5	23.05			
			135.0	22.86			

Product	:	Notebook
Test Item	:	Power Output

Test Mode	Channel No.	Frequency (MHz)	Conducted Power (dBm)	Limit (dBm)	Result
802.11b	01	2412	19.01	30	Pass
	06	2437	18.61	30	Pass
	11	2462	18.86	30	Pass
802.11g	01	2412	24.45	30	Pass
	06	2437	24.77	30	Pass
	11	2462	24.50	30	Pass
802.11n(20M)	01	2412	23.60	30	Pass
	06	2437	25.13	30	Pass
	11	2462	23.92	30	Pass
802.11n(40M)	03	2422	19.74	30	Pass
	06	2437	24.12	30	Pass
	09	2452	23.04	30	Pass

10. Power Spectral Density

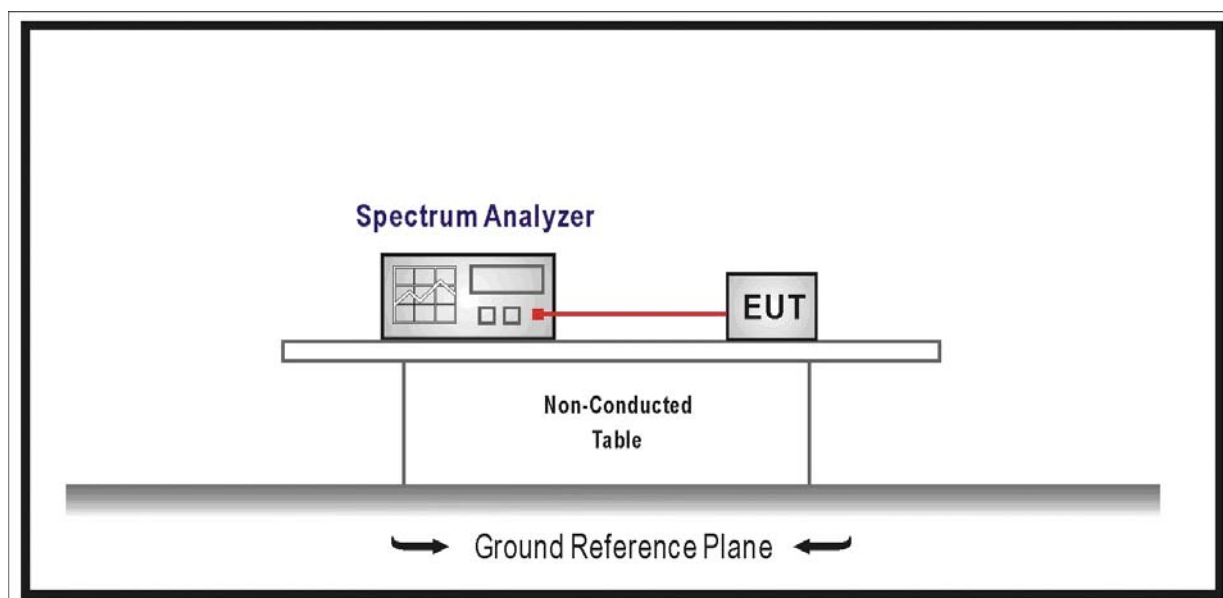
10.1. Test Equipment

Power Spectral Density / AC-6

Instrument	Manufacturer	Type No.	Serial No.	Cal. Date
Spectrum Analyzer	Agilent	N9020A	MY49100159	2009/05/06
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH007	2009/03/30

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

10.2. Test Setup



10.3. Limit

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

10.4. Test Procedure

The EUT was tested according to DTS test procedure of Oct 2002 KDB558074 for compliance to FCC 47CFR 15.247 requirements.

Set RBW= 3 kHz, Set VBW \geq 10 kHz, Sweep time=100s, Set detector=Peak detector.

10.5. Uncertainty

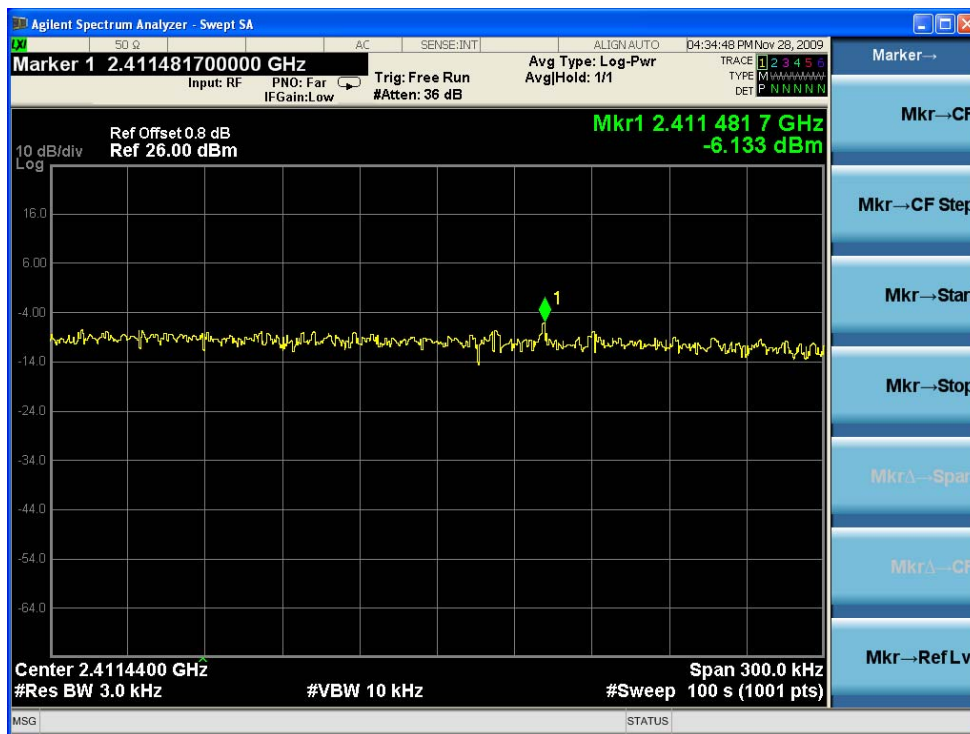
The measurement uncertainty is defined as ± 1.27 dB

10.6. Test Result

Product	:	Notebook
Test Item	:	Power Spectral Density
Test Mode	:	Mode 1: Transmit by 802.11b

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm)	Result
01	2412	-6.133	8	Pass
06	2437	-6.482	8	Pass
11	2462	-6.687	8	Pass

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



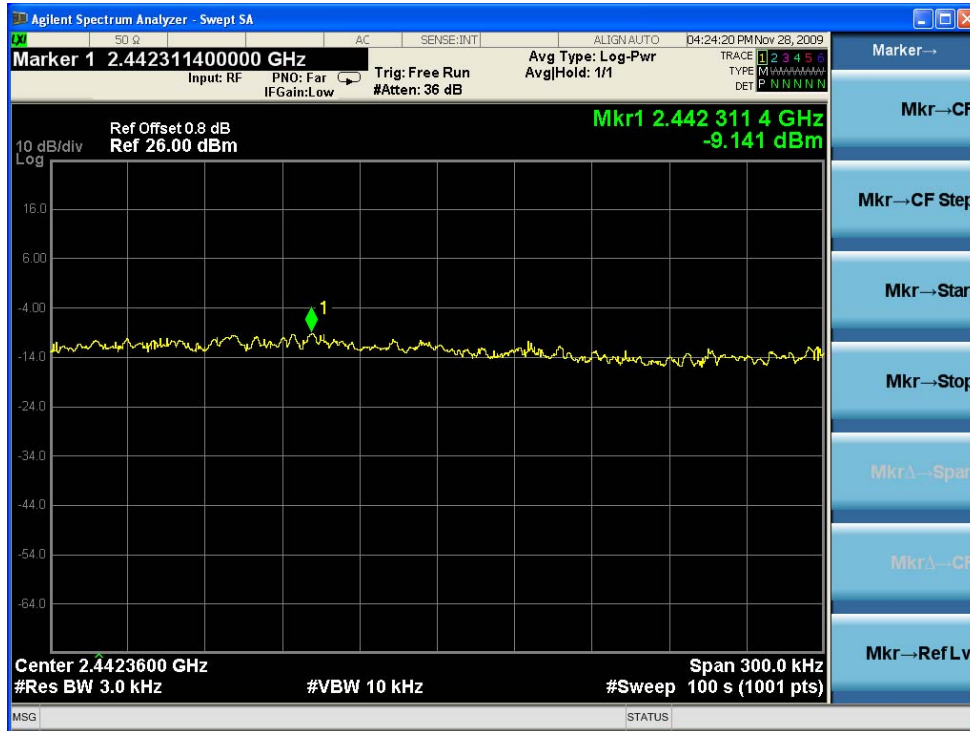
Product	:	Notebook
Test Item	:	Power Spectral Density
Test Mode	:	Mode 2: Transmit by 802.11g

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm)	Result
01	2412	-12.621	8	Pass
06	2437	-9.141	8	Pass
11	2462	-9.955	8	Pass

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



Product	:	Notebook
Test Item	:	Power Spectral Density
Test Mode	:	Mode 4: Transmit by 802.11n (20MHz)

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm)	Result
01	2412	-13.658	8	Pass
06	2437	-8.717	8	Pass
11	2462	-9.322	8	Pass

Channel 01 (2412MHz)



Channel 06 (2437MHz)



Channel 11 (2462MHz)



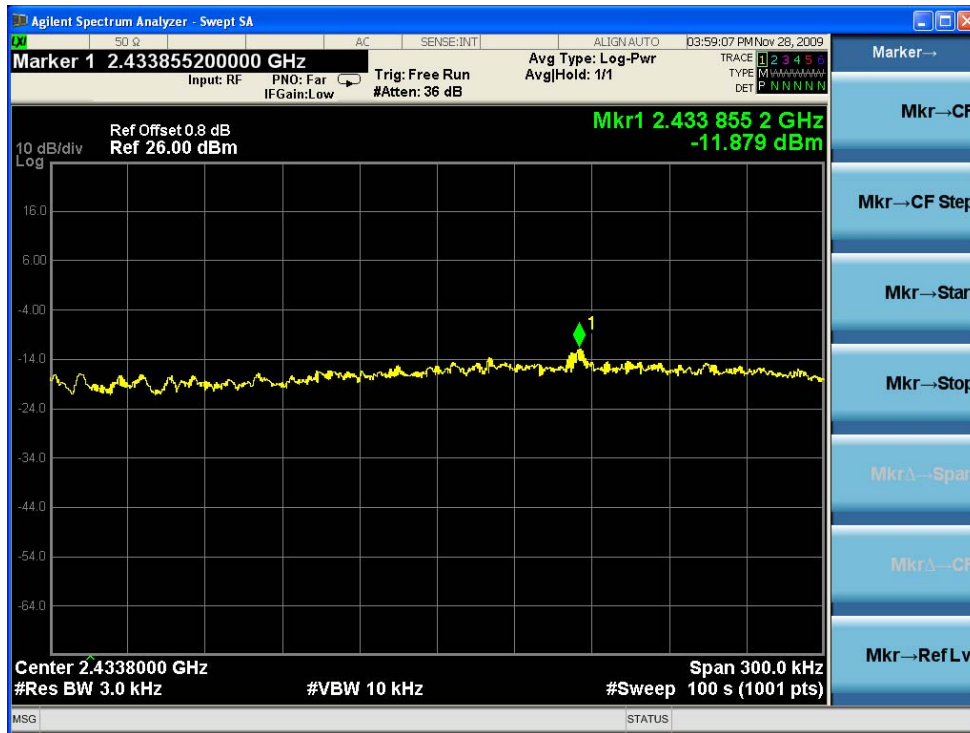
Product	:	Notebook
Test Item	:	Power Spectral Density
Test Mode	:	Mode 5: Transmit by 802.11n (40MHz)

Channel No.	Frequency (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm)	Result
03	2422	-18.350	8	Pass
06	2437	-11.879	8	Pass
09	2452	-13.457	8	Pass

Channel 03 (2422MHz)



Channel 06 (2437MHz)



Channel 09 (2452MHz)

