5.3 6dB BANDWIDTH MEASUREMENT

5.3.1 LIMITS OF 6dB BANDWIDTH MEASUREMENT

The minimum of 6dB Bandwidth Measurement is 0.5 MHz.

5.3.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

NOTES: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

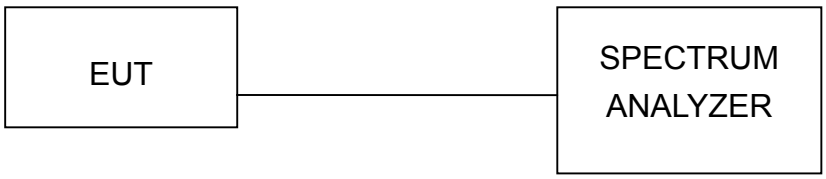
5.3.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator. The bandwidth of the fundamental frequency was measured by spectrum analyzer with 100kHz RBW and 100kHz VBW. The 6dB bandwidth is defined as the total spectrum the power of which is higher than peak power minus 6dB.

5.3.4 DEVIATION FROM TEST STANDARD

No deviation

5.3.5 TEST SETUP



5.3.6 EUT OPERATING CONDITIONS

The software provided by client to enable the EUT under transmission condition continuously at lowest, middle and highest channel frequencies individually.

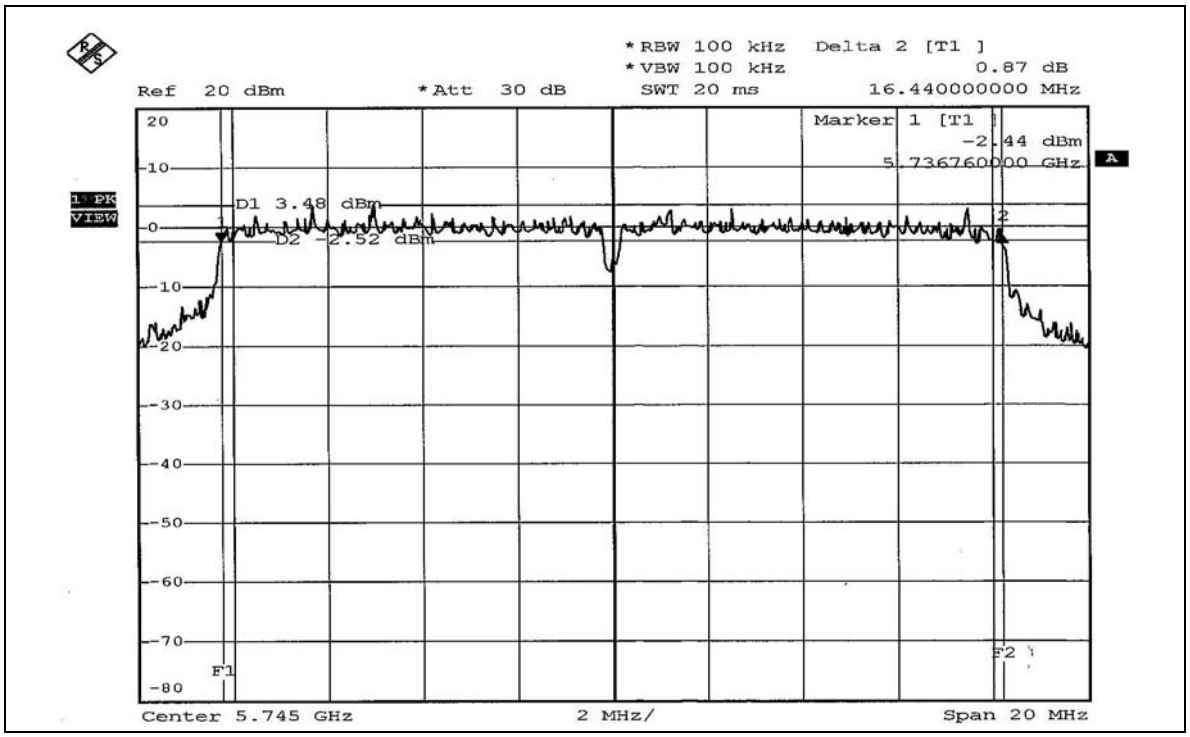
5.3.7 TEST RESULTS

802.11a OFDM modulation

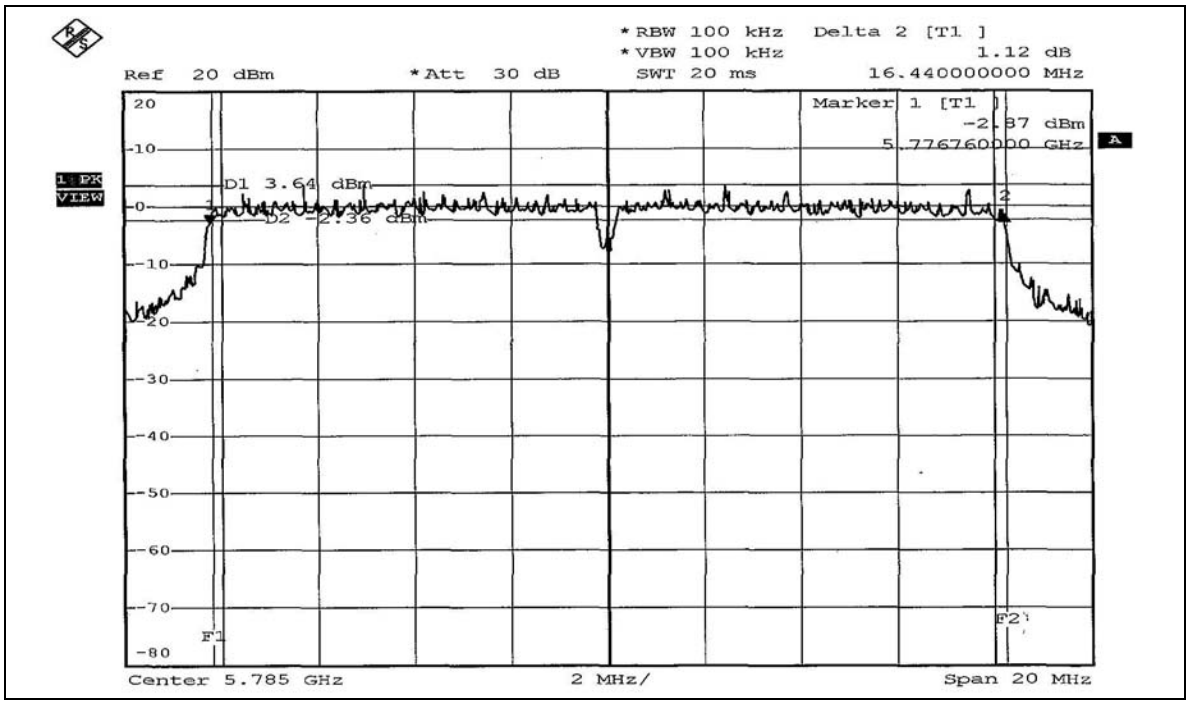
EUT	11a/b/g Wireless PCI Adapter	**MODEL**	SL-3055
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 57%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	5745	16.44	0.5	PASS
3	5785	16.44	0.5	PASS
4	5805	16.44	0.5	PASS

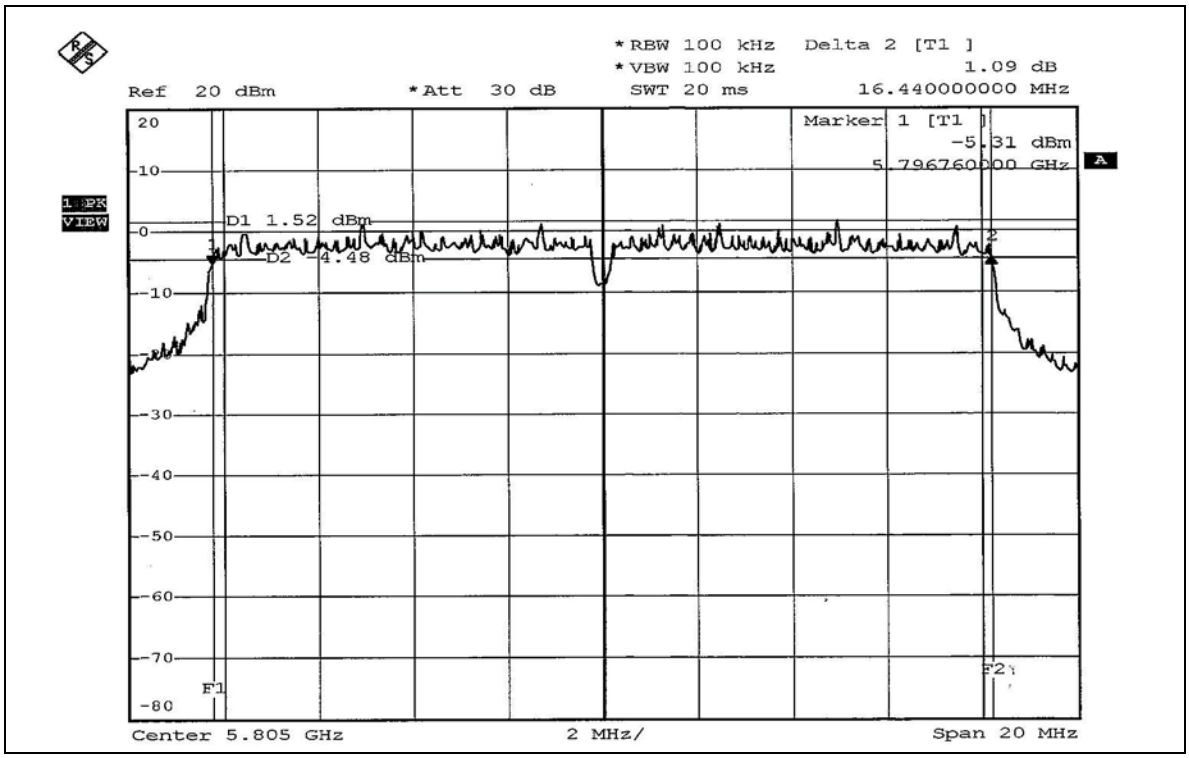
CH 1


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 2 [T1]
0.87 dB
16.440000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1
-2.44 dBm
5.736760000 GHz
1 PK VIEW
D1 3.48 dBm
D2 -2.52 dBm
F1
F2
Center 5.745 GHz
2 MHz/
Span 20 MHz

CH 3


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 2 [T1]
1.12 dB
16.440000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1
-2.87 dBm
5.776760000 GHz
1 PK VIEW
D1 3.64 dBm
D2 -2.36 dBm
F1
F2
Center 5.785 GHz
2 MHz/
Span 20 MHz

CH 4

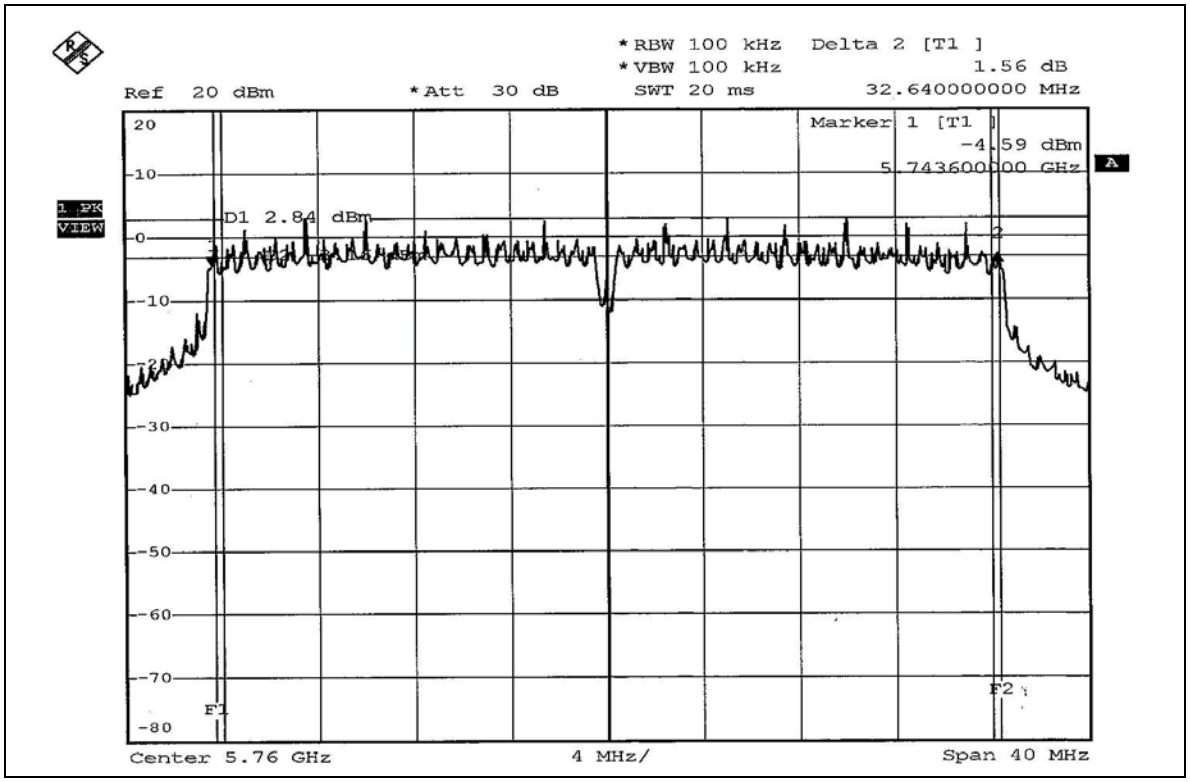

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 2 [T1]
1.09 dB
16.440000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-5.31 dBm
5.796760000 GHz
1 PK
VIEW
D1 1.52 dBm
D2 -4.48 dBm
F1
F2
Center 5.805 GHz
2 MHz/
Span 20 MHz

802.11a Turbo OFDM modulation

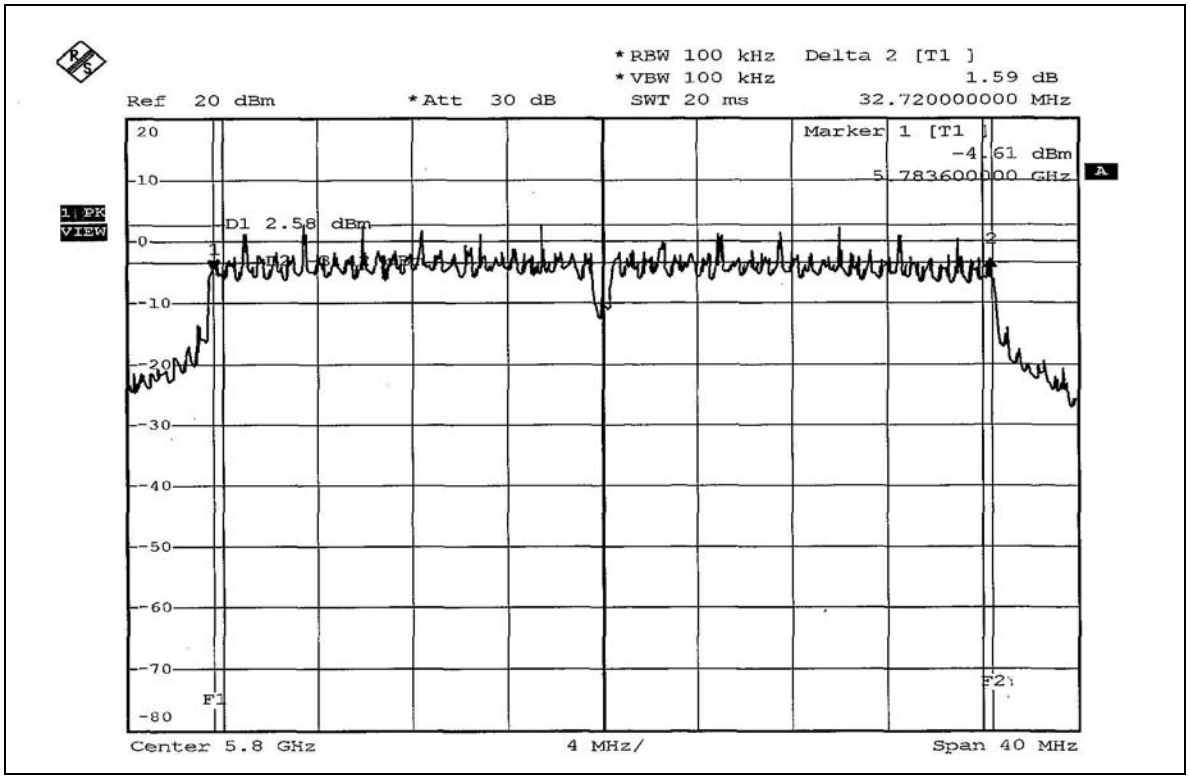
EUT	11a/b/g Wireless PCI Adapter	**MODEL**	SL-3055
MODULATION TYPE	BPSK	**TRANSFER RATE**	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 57%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	6dB BANDWIDTH (MHz)	MINIMUM LIMIT (MHz)	PASS/FAIL
1	5760	32.64	0.5	PASS
2	5800	32.72	0.5	PASS

CH 1


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 2 [T1]
1.56 dB
32.640000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-4.59 dBm
5.743600000 GHz
1 PK VIEW
D1 2.84 dBm
F1
F2
Center 5.76 GHz
4 MHz/
Span 40 MHz

CH 2


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Delta 2 [T1]
1.59 dB
32.720000000 MHz
Ref 20 dBm
*Att 30 dB
Marker 1 [T1]
-4.61 dBm
5.783600000 GHz
1 PK VIEW
D1 2.58 dBm
F1
F2
Center 5.8 GHz
4 MHz/
Span 40 MHz

5.4 MAXIMUM PEAK OUTPUT POWER

5.4.1 LIMITS OF MAXIMUM PEAK OUTPUT POWER MEASUREMENT

The Maximum Peak Output Power Measurement is 30dBm.

5.4.2 INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005
AGILENT SIGNAL GENERATOR	E8257C	MY43320668	Dec. 31, 2005
TEKTRONIX OSCILLOSCOPE	TDS 1012	C019167	Feb. 01, 2006
NARDA DETECTOR	4503A	FSCM99899	NA

NOTE:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA..

5.4.3 TEST PROCEDURES

1. A detector was used on the output port of the EUT. An oscilloscope was used to read the response of the detector.
2. Replaced the EUT by the signal generator . The center frequency of the S.G was adjusted to the center frequency of the measured channel.
3. Adjusted the power to have the same reading on oscilloscope. Record the power level.

5.4.4 DEVIATION FROM TEST STANDARD

No deviation

5.4.5 TEST SETUP

5.4.6 EUT OPERATING CONDITIONS

Same as Item 5.9.6

5.4.7 TEST RESULTS

802.11a OFDM modulation

EUT	11a/b/g Wireless PCI Adapter	**MODEL**	SL-3055
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 57%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	5745	101.158	20.05	30	PASS
3	5785	101.158	20.05	30	PASS
4	5805	63.680	18.04	30	PASS

802.11a Turbo OFDM modulation

EUT	11a/b/g Wireless PCI Adapter	**MODEL**	SL-3055
MODULATION TYPE	BPSK	**TRANSFER RATE**	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 57%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	PEAK POWER OUTPUT (mW)	PEAK POWER OUTPUT (dBm)	PEAK POWER LIMIT (dBm)	PASS/FAIL
1	5760	80.168	19.04	30	PASS
2	5800	80.910	19.08	30	PASS

5.5 POWER SPECTRAL DENSITY MEASUREMENT

5.5.1 LIMITS OF POWER SPECTRAL DENSITY MEASUREMENT

The Maximum of Power Spectral Density Measurement is 8dBm.

5.5.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

NOTES:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

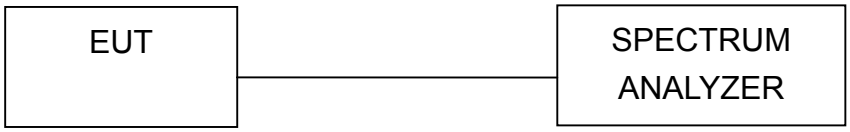
5.5.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer through an attenuator, the bandwidth of the fundamental frequency was measured with the spectrum analyzer using 3 kHz RBW and 30 kHz VBW, set sweep time = span/3 kHz. The power spectral density was measured and recorded.
The sweep time is allowed to be longer than span/3 kHz for a full response of the mixer in the spectrum analyzer.

5.5.4 DEVIATION FROM TEST STANDARD

No deviation

5.5.5 TEST SETUP



5.5.6 EUT OPERATING CONDITION

Same as Item 5.9.6

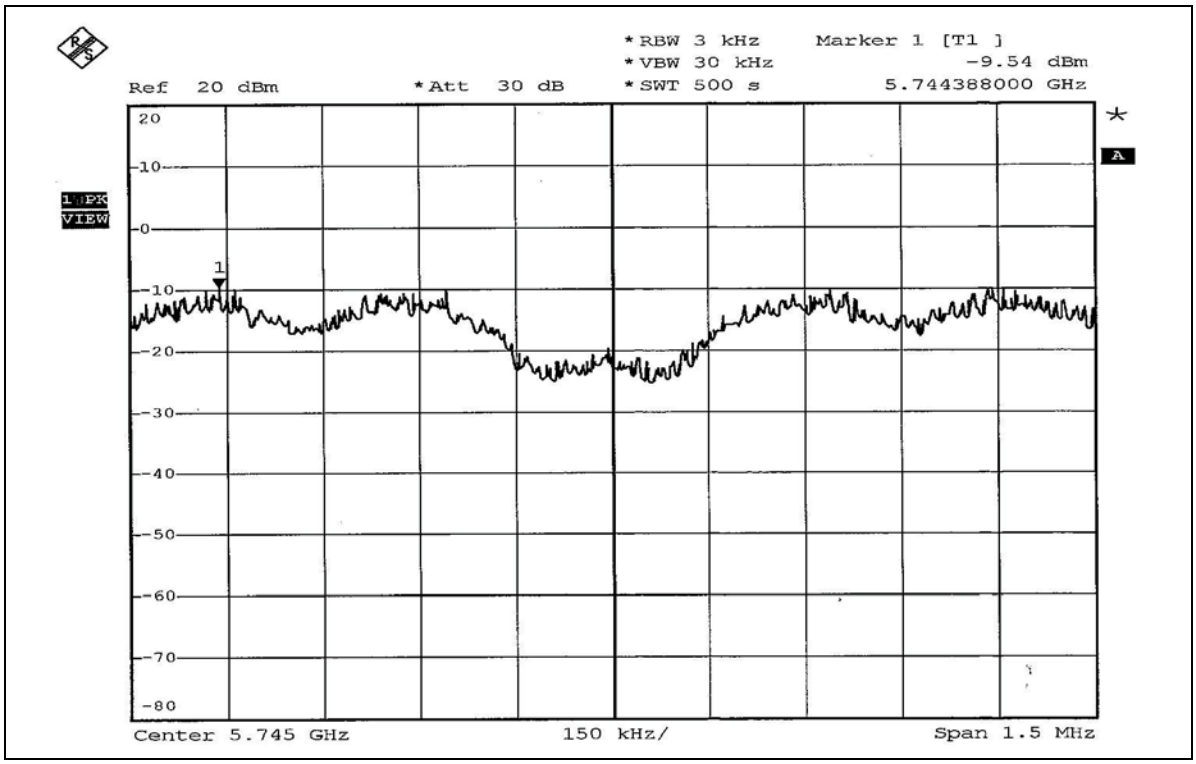
5.5.7 TEST RESULTS

802.11a OFDM modulation

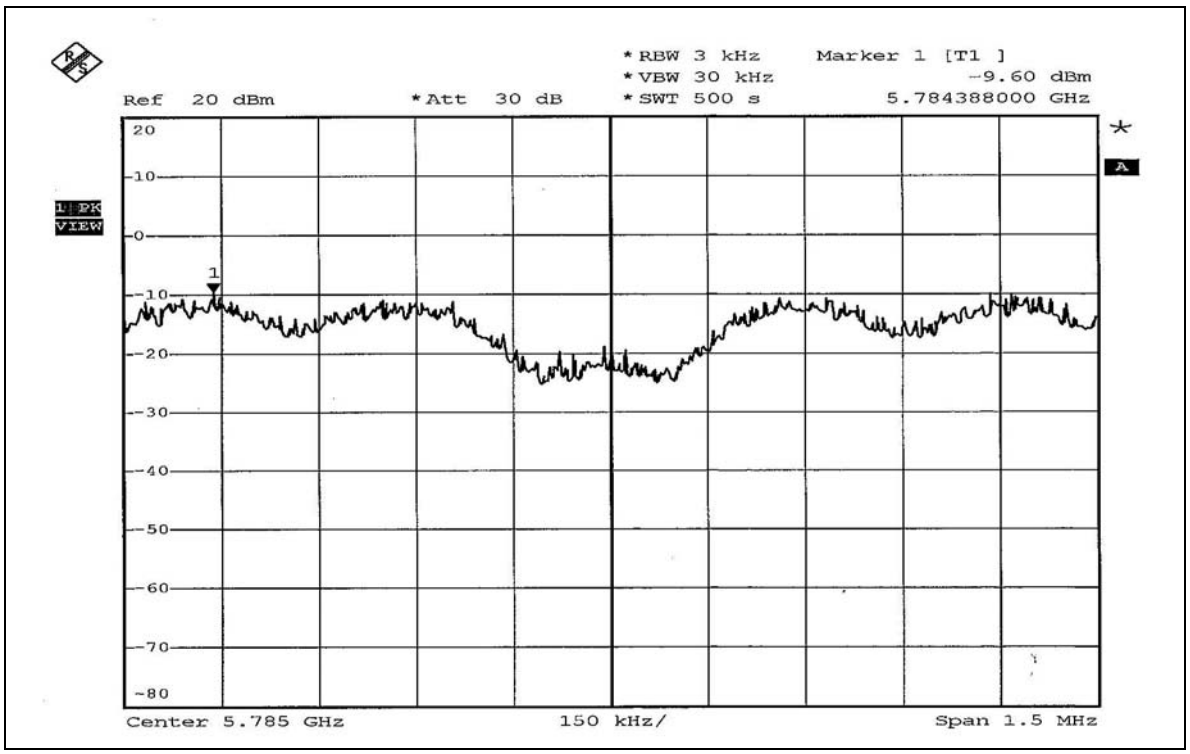
EUT	11a/b/g Wireless PCI Adapter	**MODEL**	SL-3055
MODULATION TYPE	BPSK	**TRANSFER RATE**	6Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 57%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5745	-9.54	8	PASS
3	5785	-9.60	8	PASS
4	5805	-12.01	8	PASS

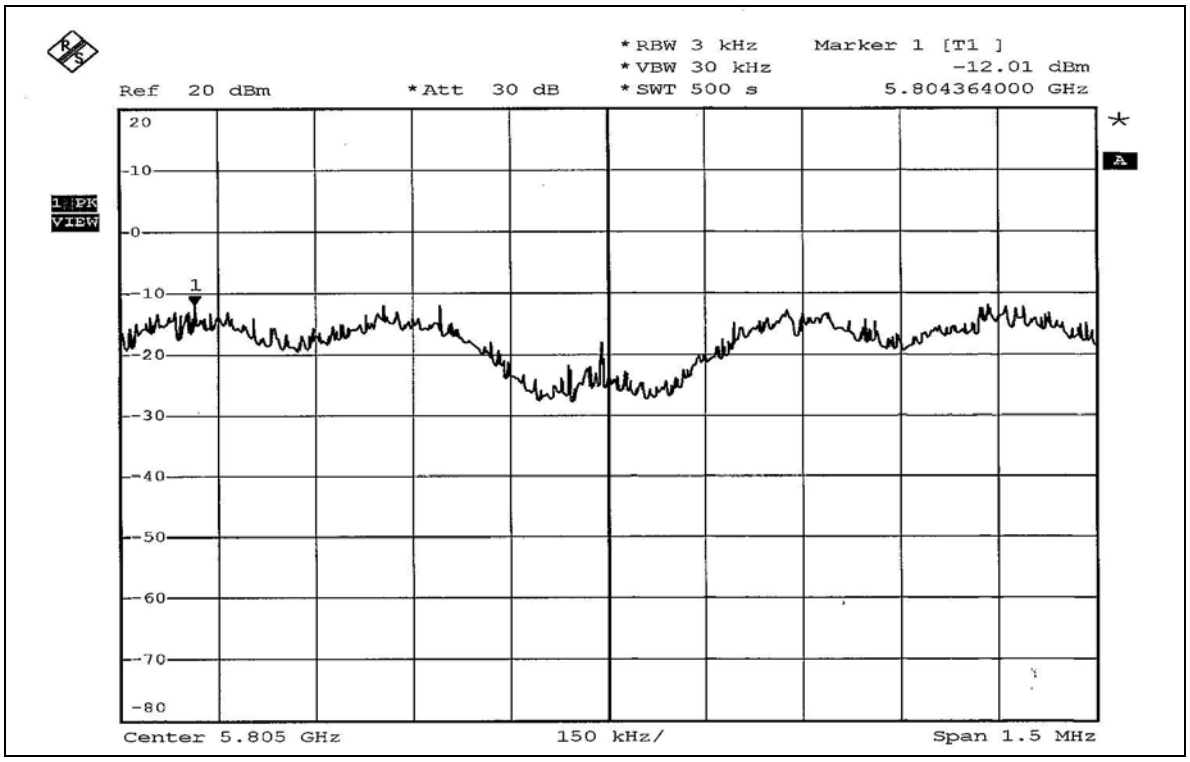
CH 1


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.54 dBm
5.744388000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.745 GHz
150 kHz/
Span 1.5 MHz

CH 3


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-9.60 dBm
5.784388000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.785 GHz
150 kHz/
Span 1.5 MHz

CH 4

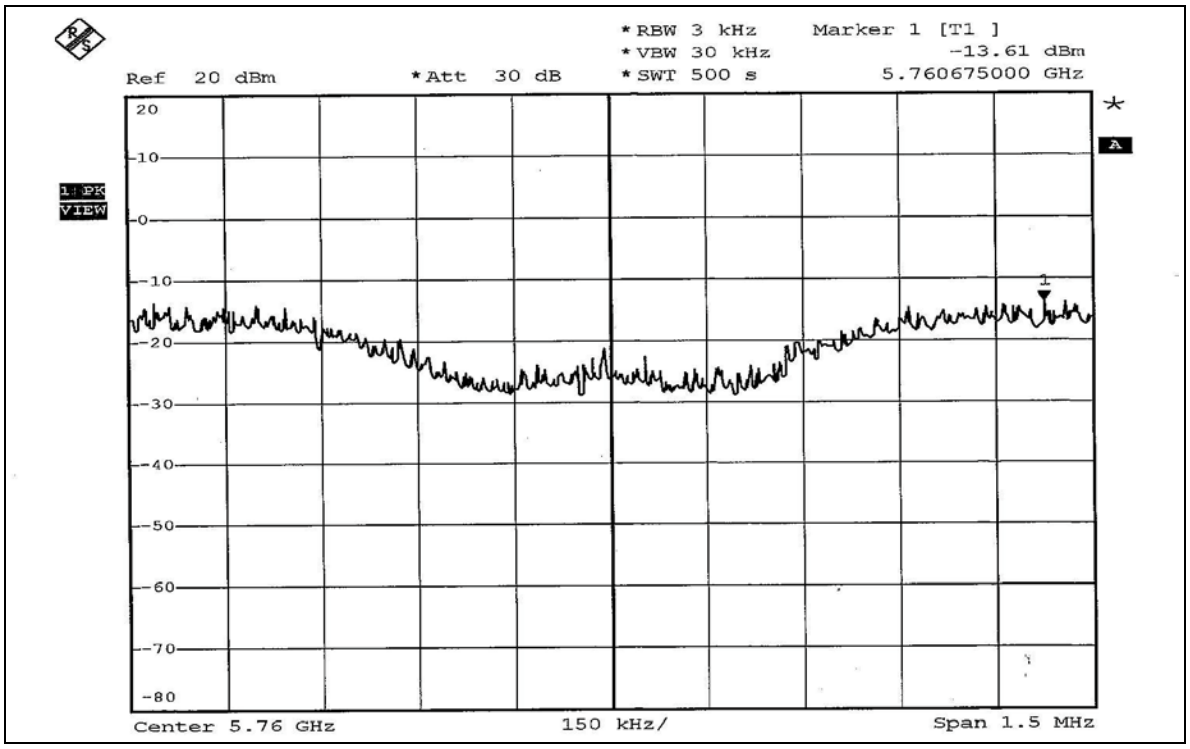

*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-12.01 dBm
5.804364000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
-10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.805 GHz
150 kHz/
Span 1.5 MHz

802.11a Turbo OFDM modulation

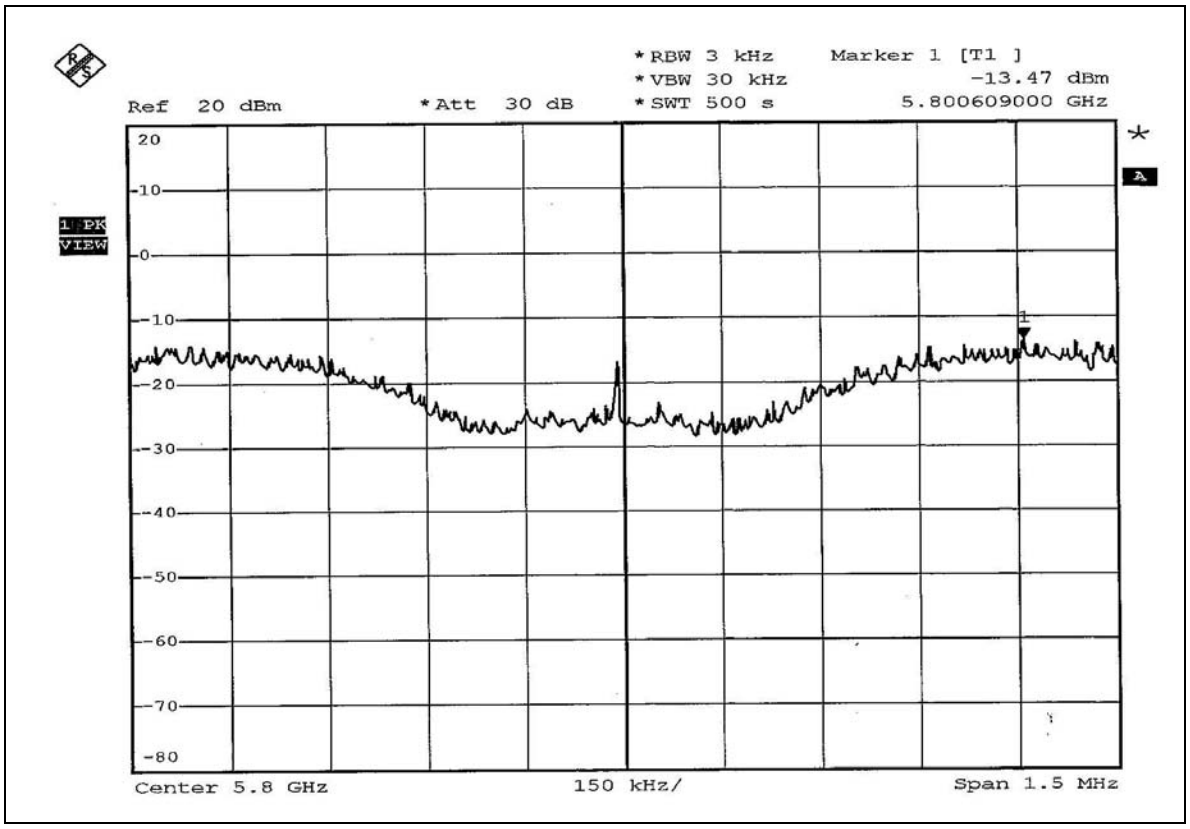
EUT	11a/b/g Wireless PCI Adapter	**MODEL**	SL-3055
MODULATION TYPE	BPSK	**TRANSFER RATE**	12Mbps
INPUT POWER (SYSTEM)	120Vac, 60 Hz	**ENVIRONMENTAL CONDITIONS**	24deg.C, 57%RH, 991hPa
TESTED BY	Gary Chang		

CHANNEL	CHANNEL FREQUENCY (MHz)	RF POWER LEVEL IN 3 kHz BW (dBm)	MAXIMUM LIMIT (dBm)	PASS/FAIL
1	5760	-13.61	8	PASS
2	5800	-13.47	8	PASS

CH 1


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.61 dBm
5.760675000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.76 GHz
150 kHz/
Span 1.5 MHz

CH 2


*RBW 3 kHz
*VBW 30 kHz
*SWT 500 s
Marker 1 [T1]
-13.47 dBm
5.800609000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
A
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
Center 5.8 GHz
150 kHz/
Span 1.5 MHz

5.6 BAND EDGES MEASUREMENT

5.6.1 LIMITS OF BAND EDGES MEASUREMENT

Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).

5.6.2 TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSEK30	100049	Aug. 12, 2005

NOTES:
The calibration interval of the above test instruments is 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

5.6.3 TEST PROCEDURE

The transmitter output was connected to the spectrum analyzer via a low lose cable. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 MHz bandwidth from band edge. The band edges was measured and recorded.

5.6.4 DEVIATION FROM TEST STANDARD

No deviation

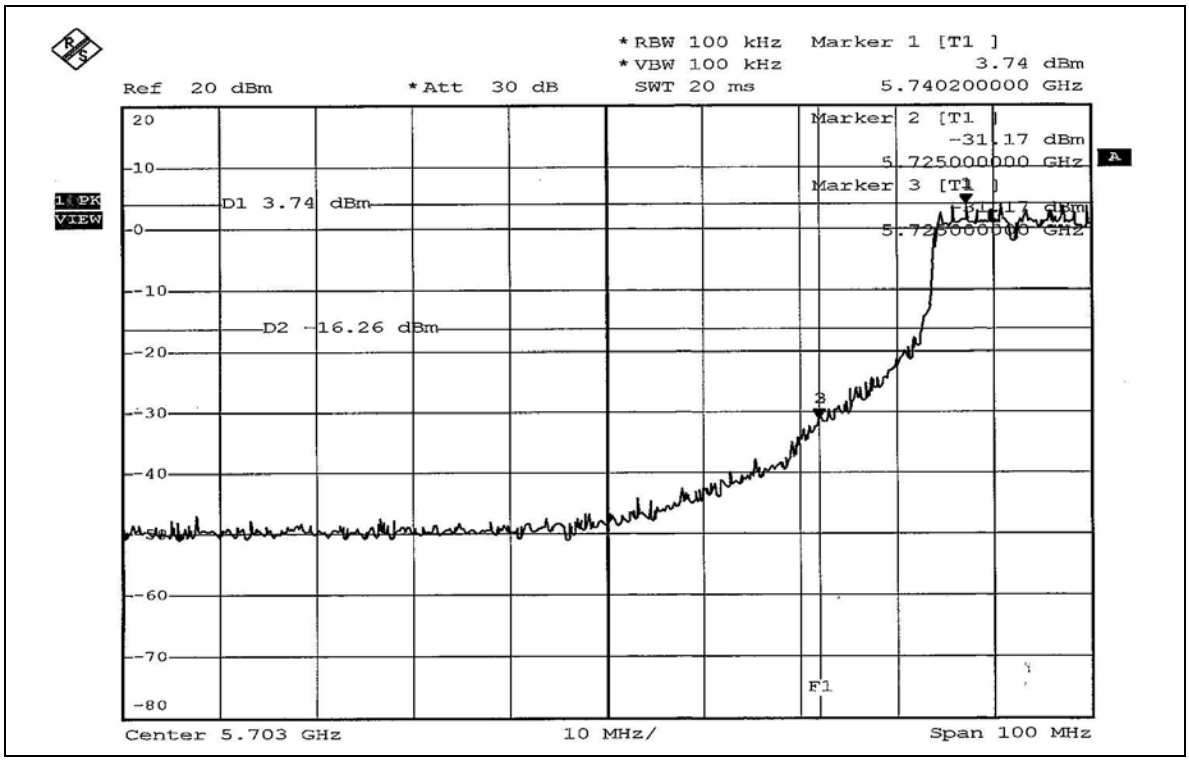
5.6.5 EUT OPERATING CONDITION

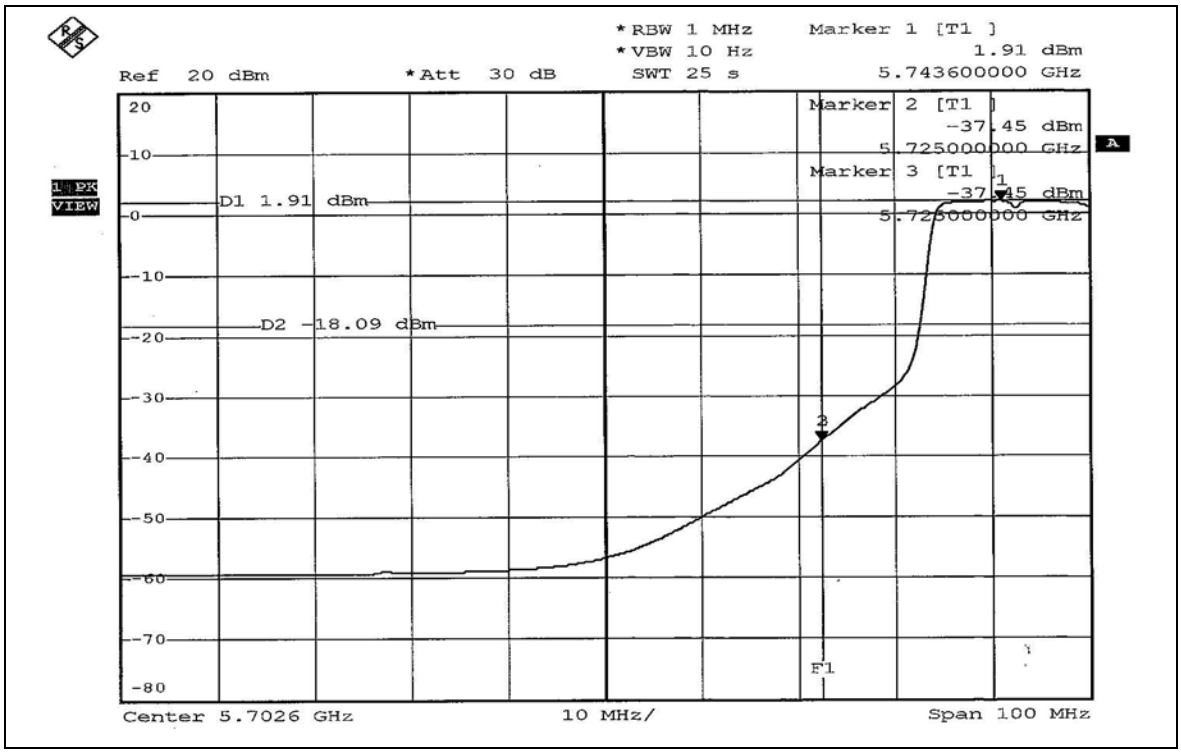
Same as Item 5.9.6

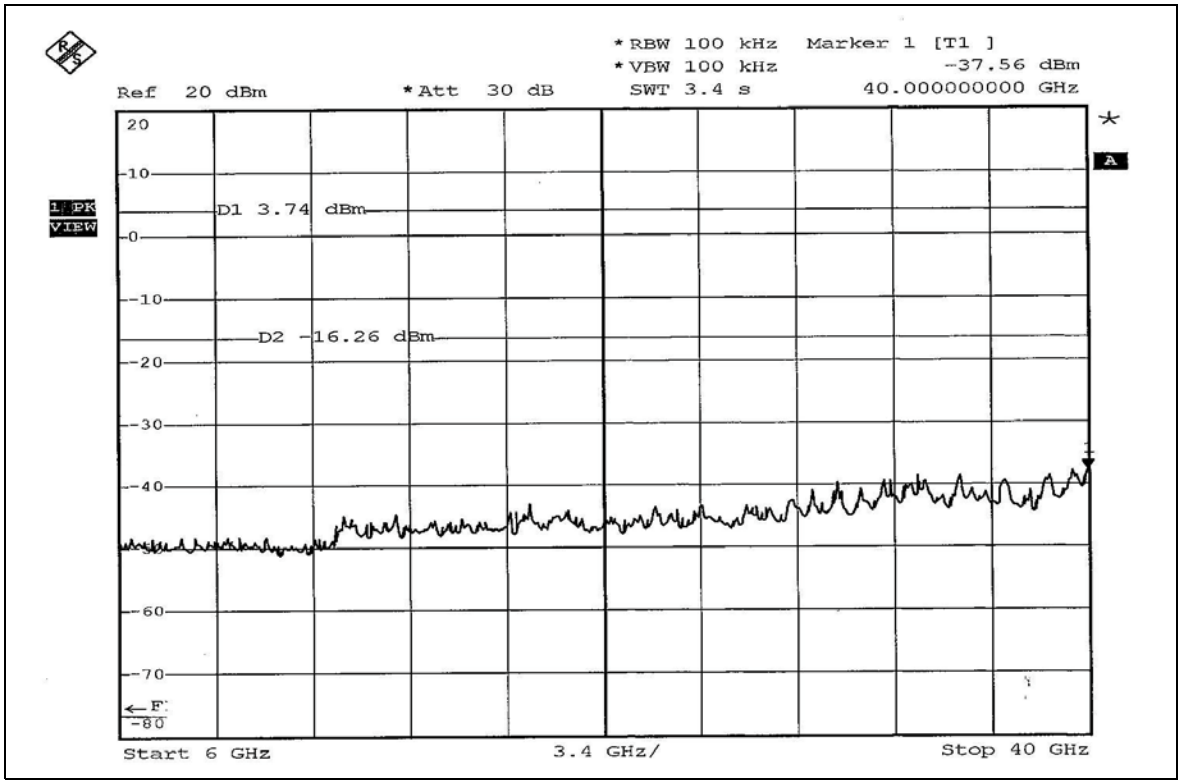
5.6.6 TEST RESULTS

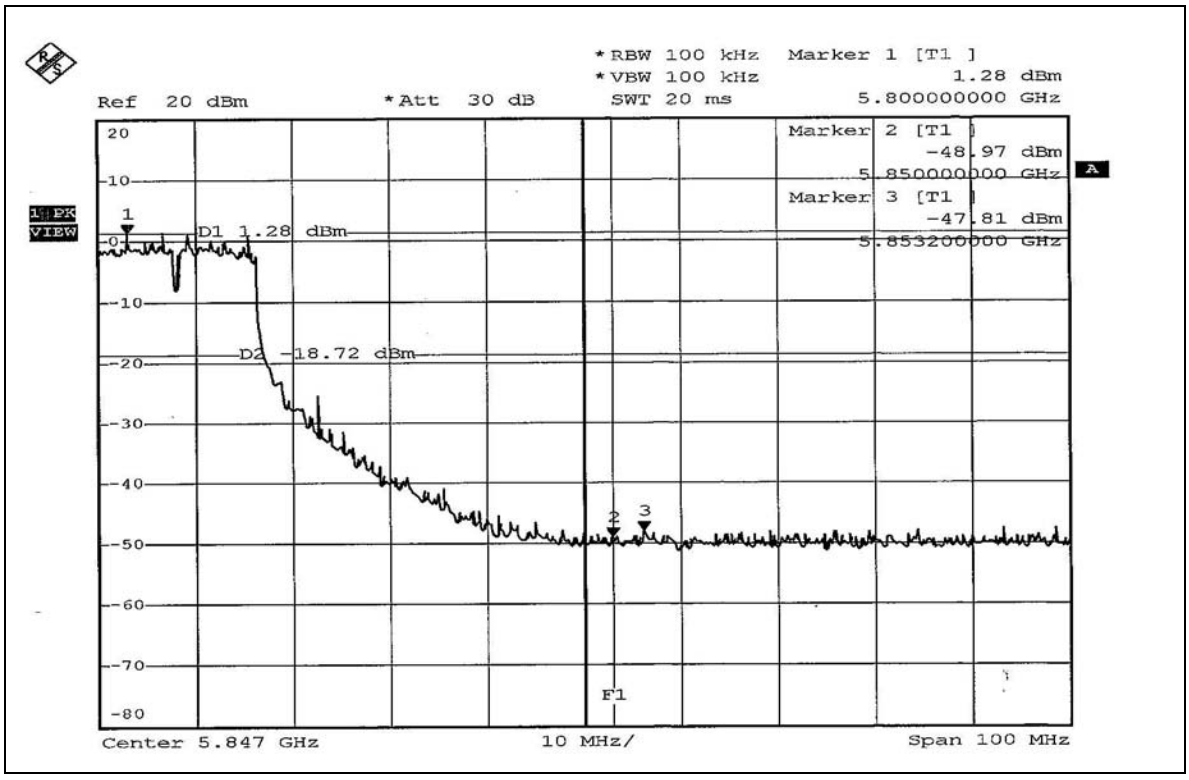
The spectrum plots are attached on the following pages. D2 line indicates the highest level, D1 line indicates the 20dB offset below D2. It shows compliance with the requirement in part 15.247(d).

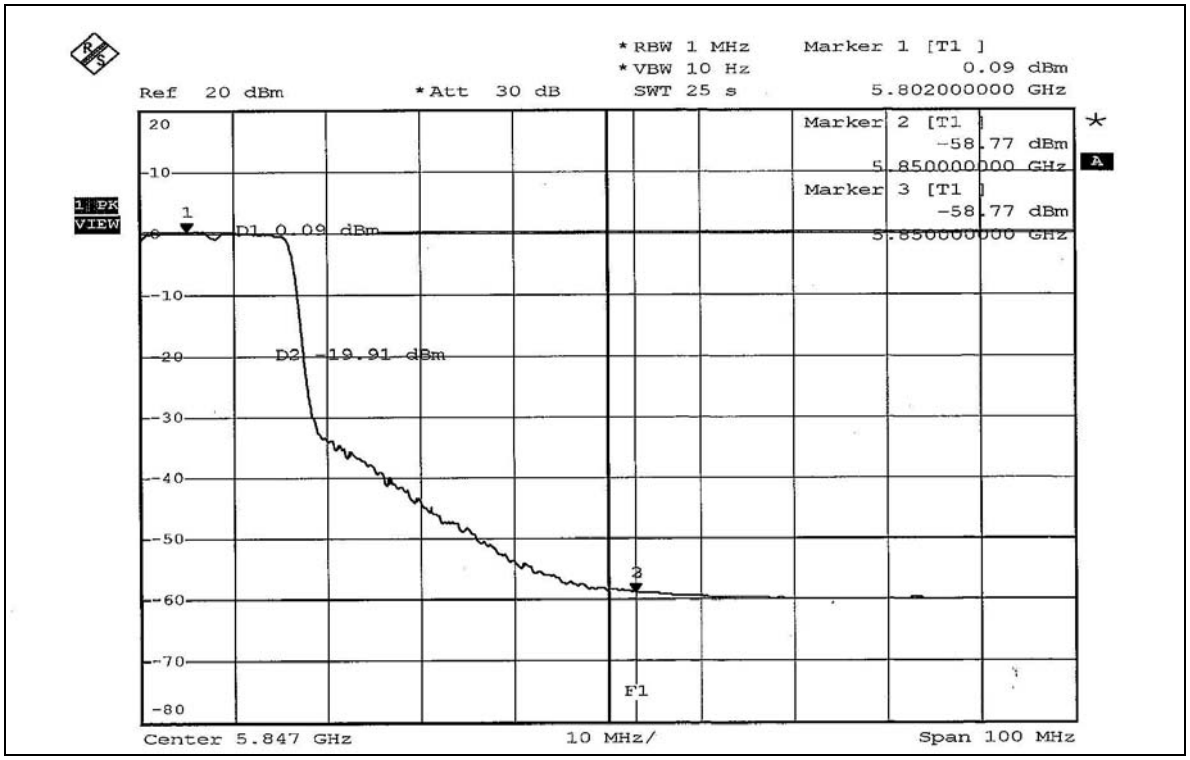
802.11a OFDM modulation

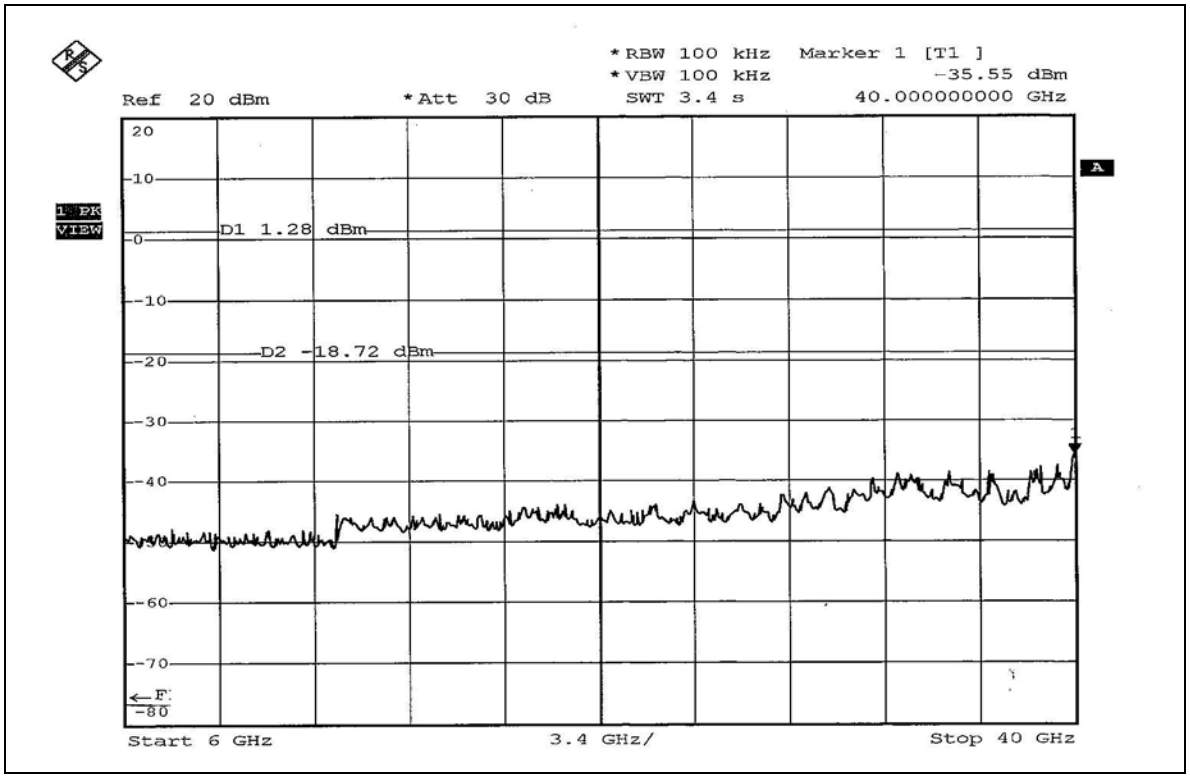




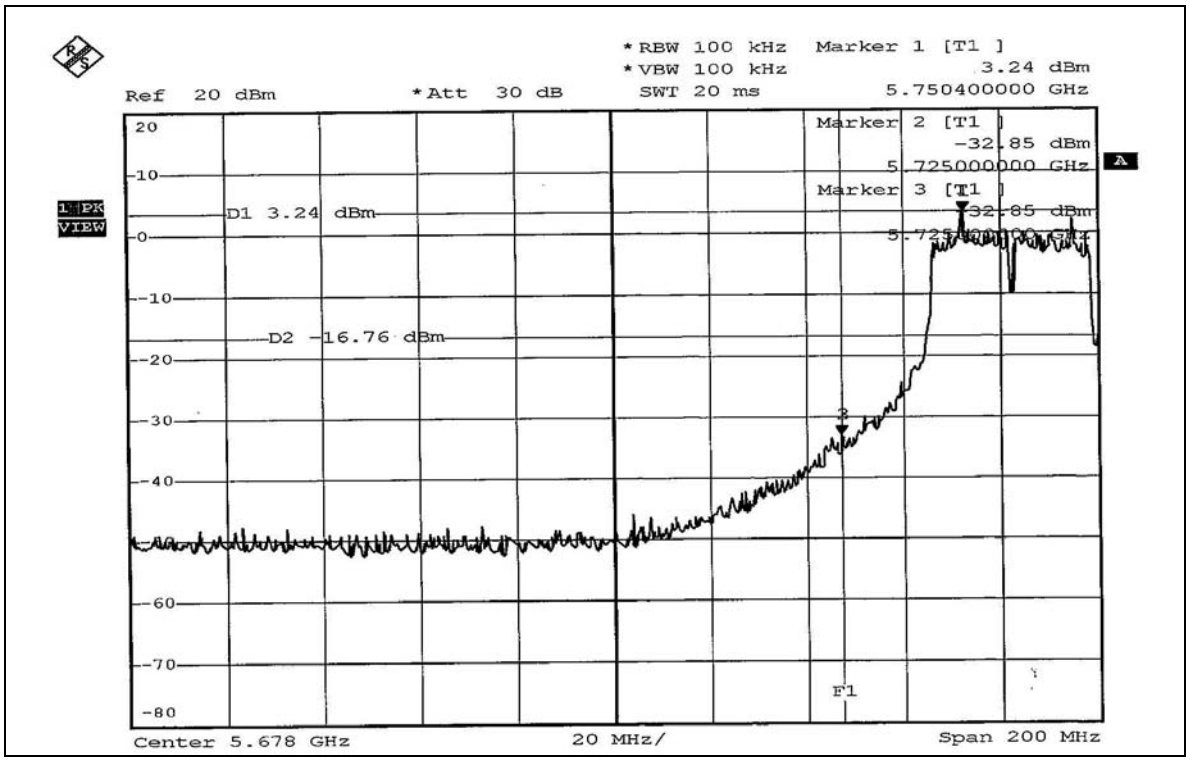

*RBW 100 kHz
*VBW 100 kHz
SWT 3.4 s
Marker 1 [T1]
-37.56 dBm
40.000000000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
D1 3.74 dBm
D2 -16.26 dBm
A
Start 6 GHz
3.4 GHz/
Stop 40 GHz

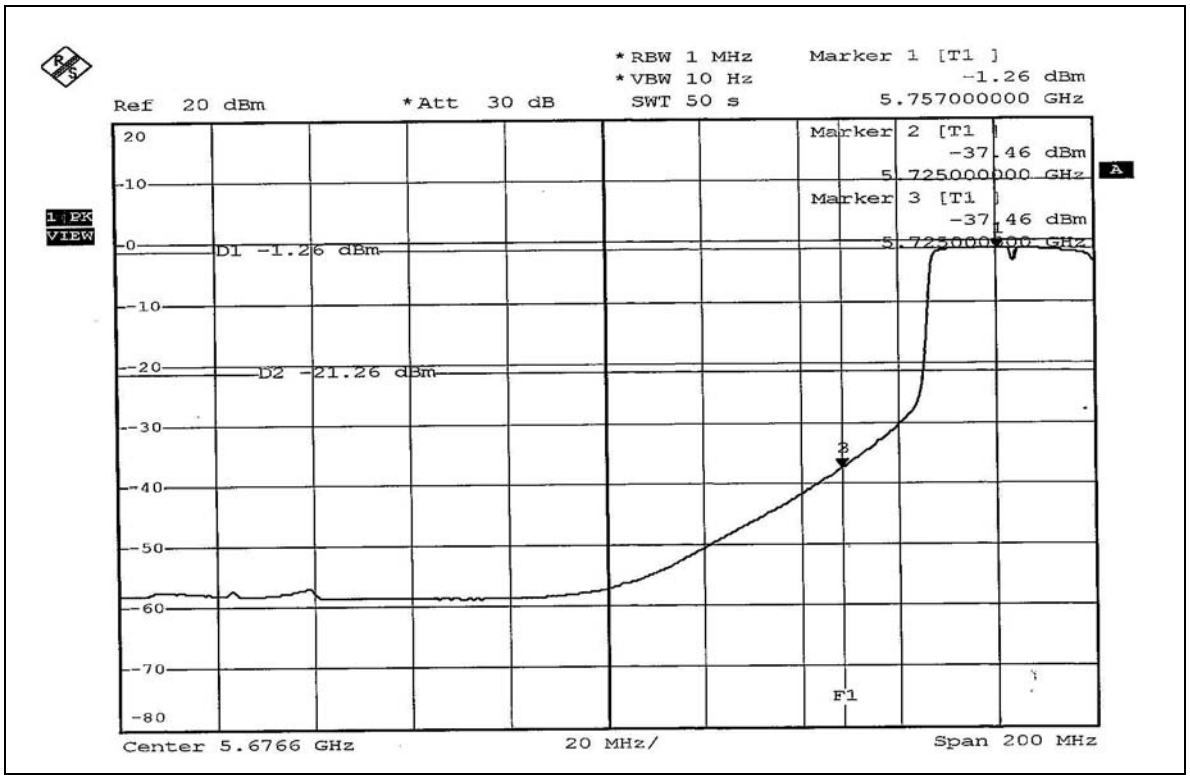

*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
1.28 dBm
5.800000000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-48.97 dBm
5.850000000 GHz
Marker 3 [T1]
-47.81 dBm
5.853200000 GHz
1 PK VIEW
D1 1.28 dBm
D2 -18.72 dBm
A
F1
Center 5.847 GHz
10 MHz/
Span 100 MHz

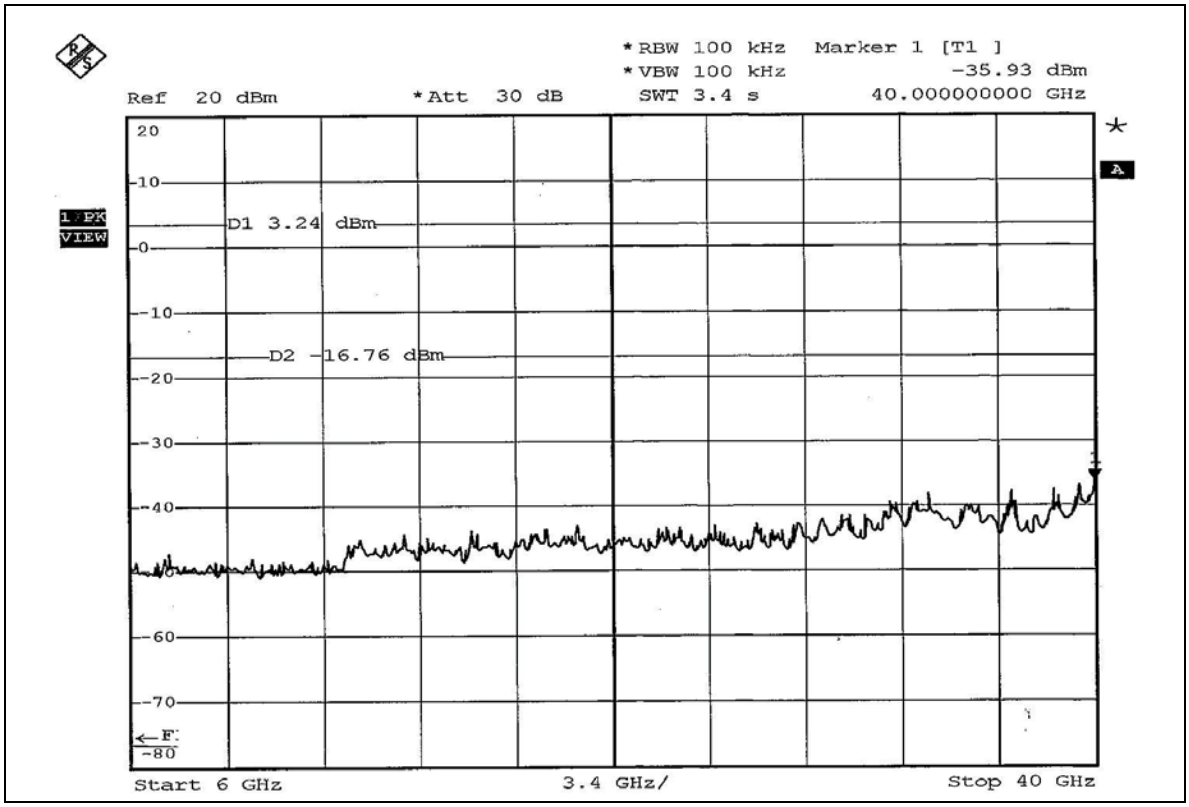

*RBW 1 MHz
*VBW 10 Hz
SWT 25 s
Marker 1 [T1]
0.09 dBm
5.802000000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-58.77 dBm
5.850000000 GHz
Marker 3 [T1]
-58.77 dBm
5.850000000 GHz
1 PK VIEW
D1 0.09 dBm
D2 -19.91 dBm
F1
Center 5.847 GHz
10 MHz/
Span 100 MHz

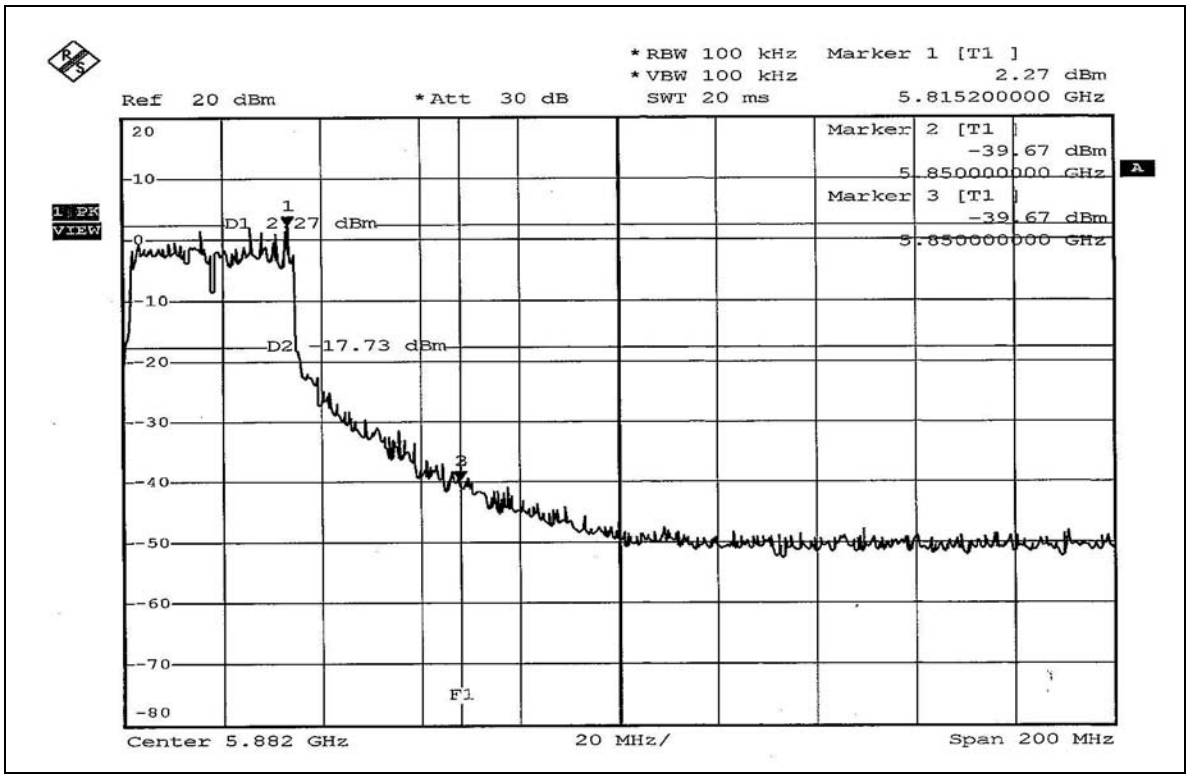

*RBW 100 kHz
*VBW 100 kHz
SWT 3.4 s
Marker 1 [T1]
-35.55 dBm
40.000000000 GHz
Ref 20 dBm
*Att 30 dB
1 PK VIEW
D1 1.28 dBm
D2 -18.72 dBm
Start 6 GHz
3.4 GHz/
Stop 40 GHz

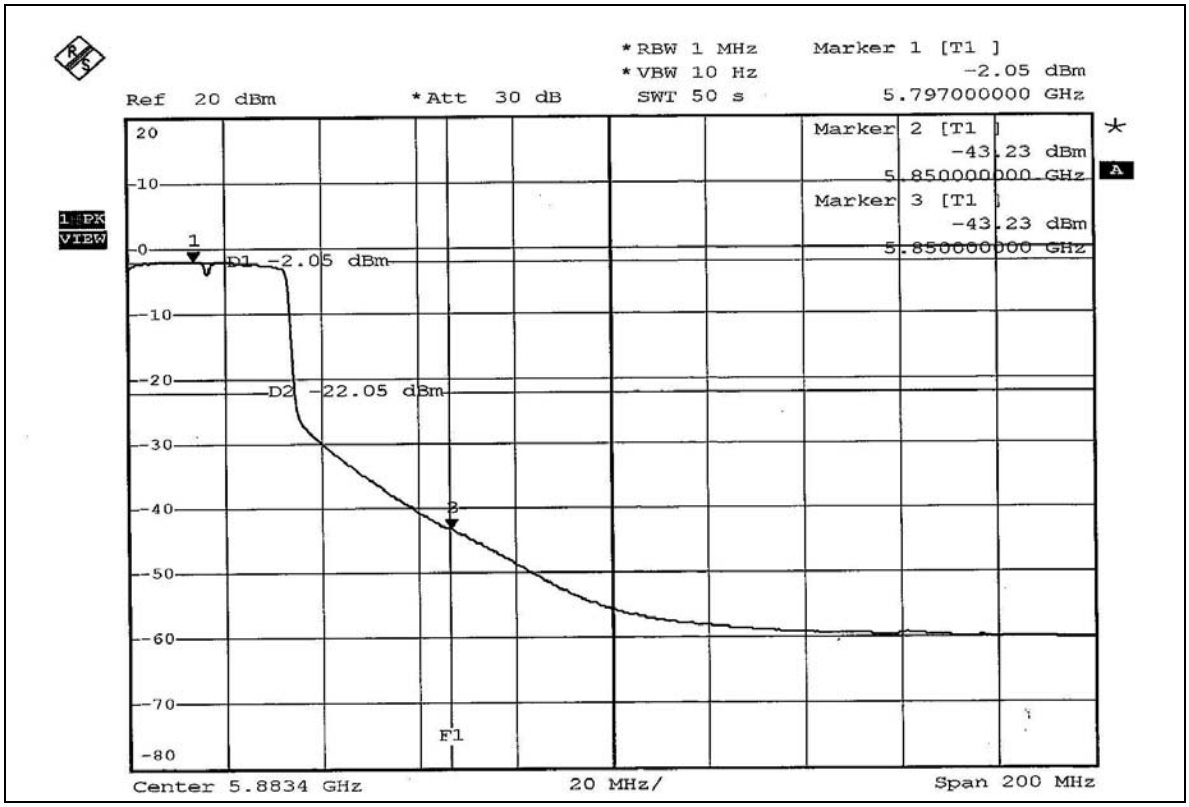
802.11a Turbo OFDM modulation

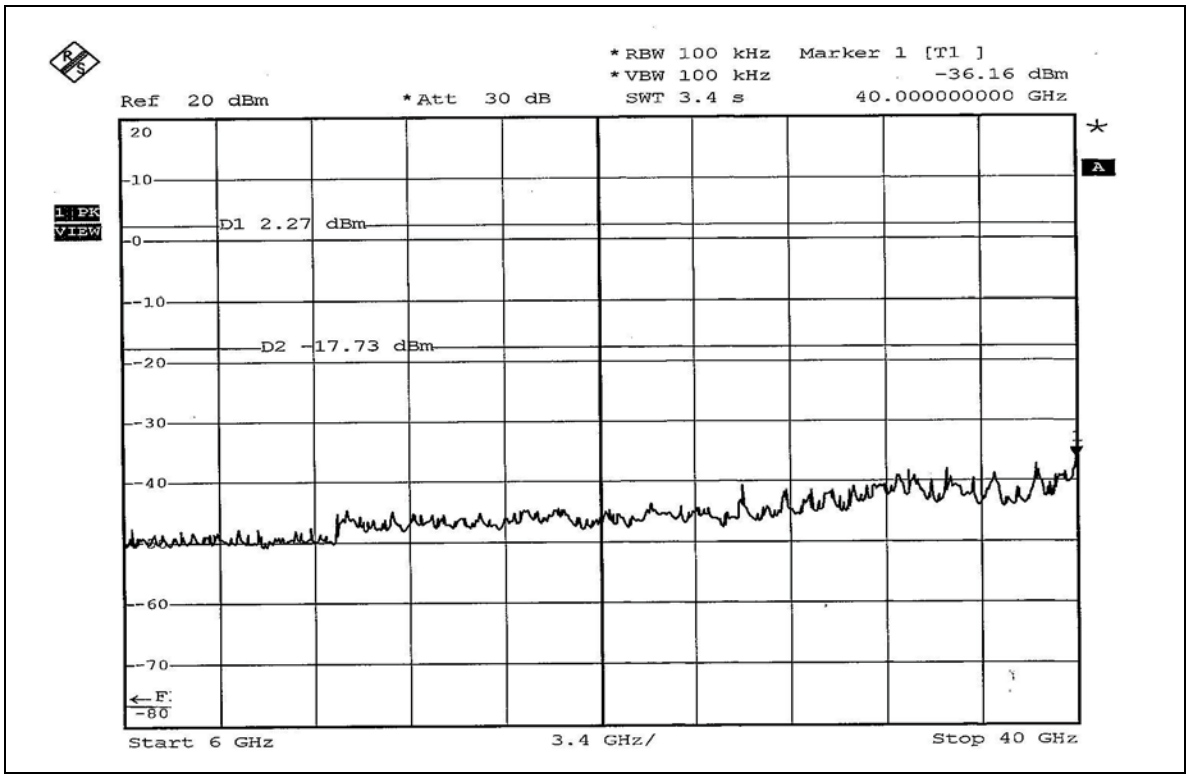





*RBW 100 kHz
*VBW 100 kHz
SWT 3.4 s
Marker 1 [T1]
-35.93 dBm
40.000000000 GHz
Ref 20 dBm
*Att 30 dB
1 PK
VIEW
D1 3.24 dBm
D2 -16.76 dBm
Start 6 GHz
3.4 GHz/
Stop 40 GHz


*RBW 100 kHz
*VBW 100 kHz
SWT 20 ms
Marker 1 [T1]
2.27 dBm
5.815200000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-39.67 dBm
5.850000000 GHz
Marker 3 [T1]
-39.67 dBm
5.850000000 GHz
1 PK
VIEW
D1 2.27 dBm
D2 -17.73 dBm
F1
Center 5.882 GHz
20 MHz/
Span 200 MHz


*RBW 1 MHz
*VBW 10 Hz
SWT 50 s
Marker 1 [T1]
-2.05 dBm
5.797000000 GHz
Ref 20 dBm
*Att 30 dB
Marker 2 [T1]
-43.23 dBm
5.850000000 GHz
Marker 3 [T1]
-43.23 dBm
5.850000000 GHz
1 PK
VIEW
D1 -2.05 dBm
D2 -22.05 dBm
F1
Center 5.8834 GHz
20 MHz/
Span 200 MHz


*RBW 100 kHz
*VBW 100 kHz
SWT 3.4 s
Marker 1 [T1]
-36.16 dBm
40.000000000 GHz
Ref 20 dBm
*Att 30 dB
1 PK
VIEW
D1 2.27 dBm
D2 -17.73 dBm
Start 6 GHz
3.4 GHz/
Stop 40 GHz

5.7 ANTENNA REQUIREMENT

5.7.1 STANDARD APPLICABLE

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.
And according to FCC 47 CFR Section 15.247(a), if transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

5.7.2 ANTENNA CONNECTED CONSTRUCTION

The antenna used in this product is Dipole antenna with Reverse SMA connector.
The maximum Gain of the antenna is 2.5dBi.

6. PHOTOGRAPHS OF THE TEST CONFIGURATION

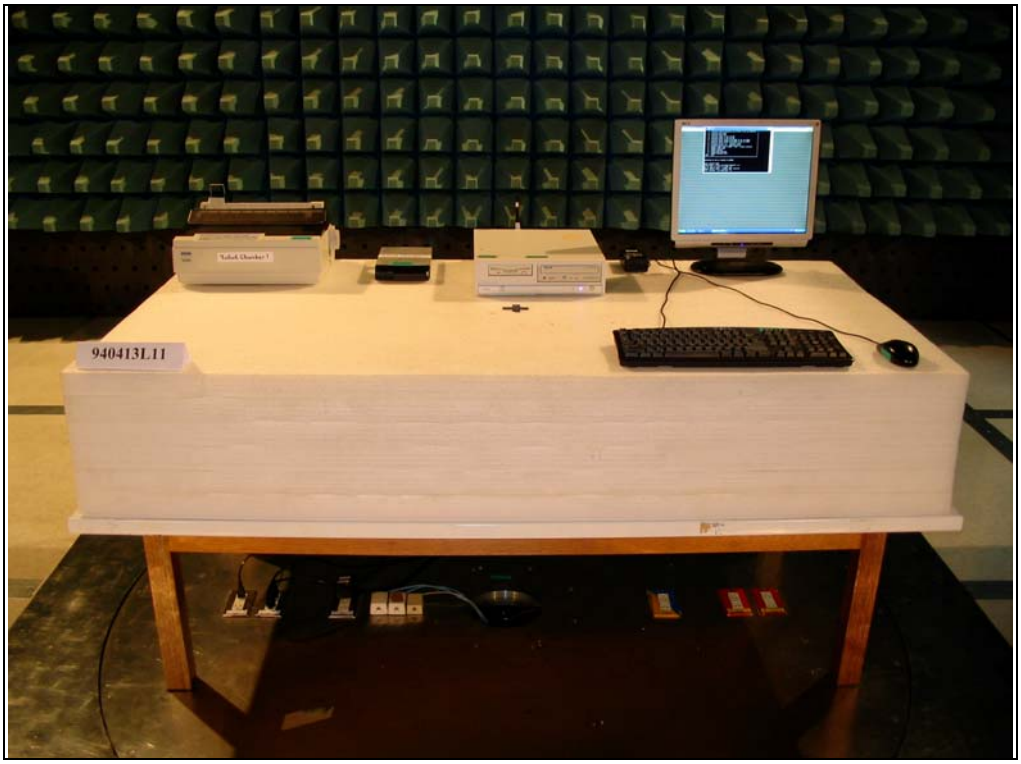
CONDUCTED EMISSION TEST

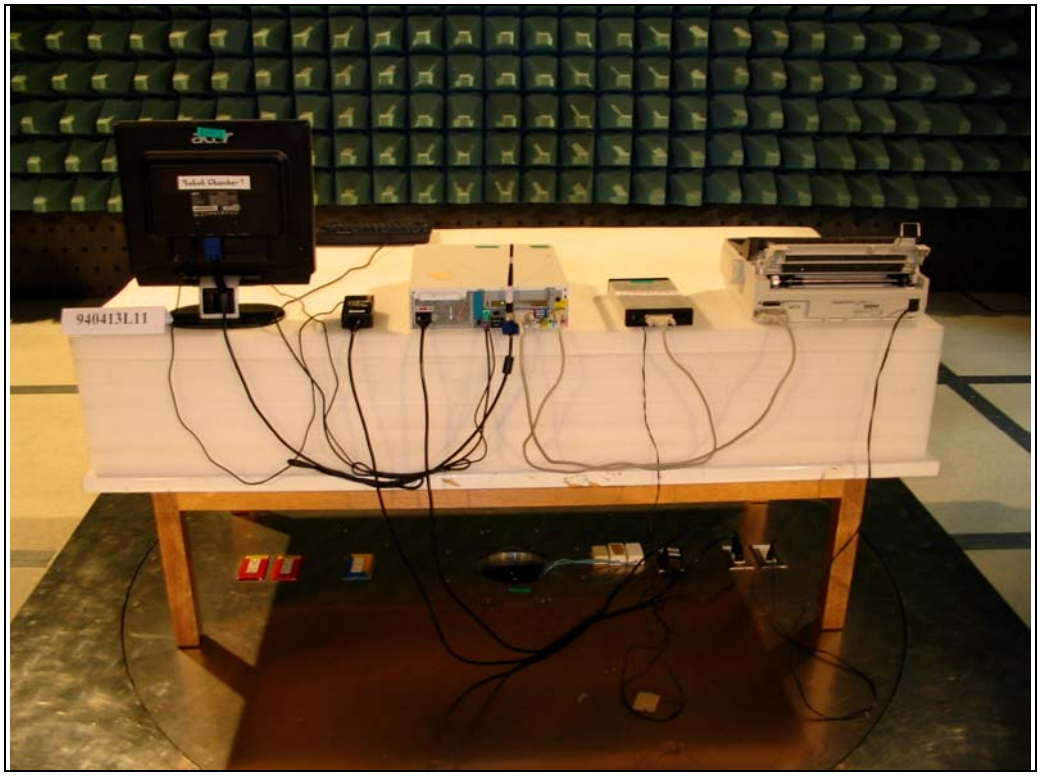
Test Mode A

Test Mode B

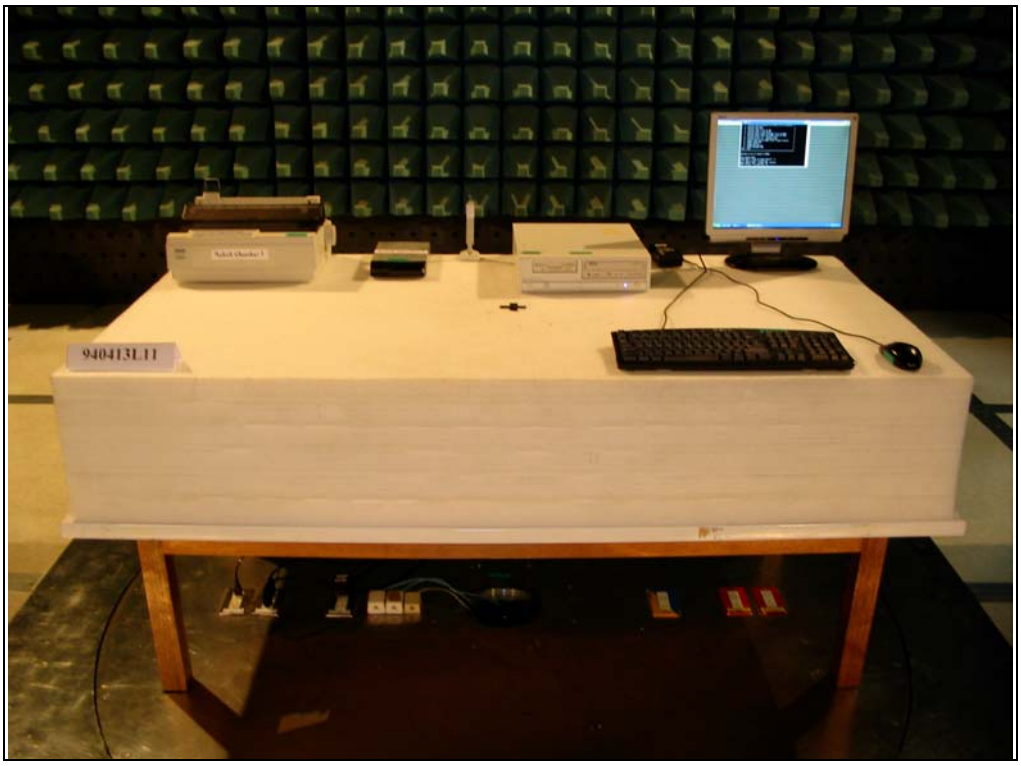
RADIATED EMISSION TEST

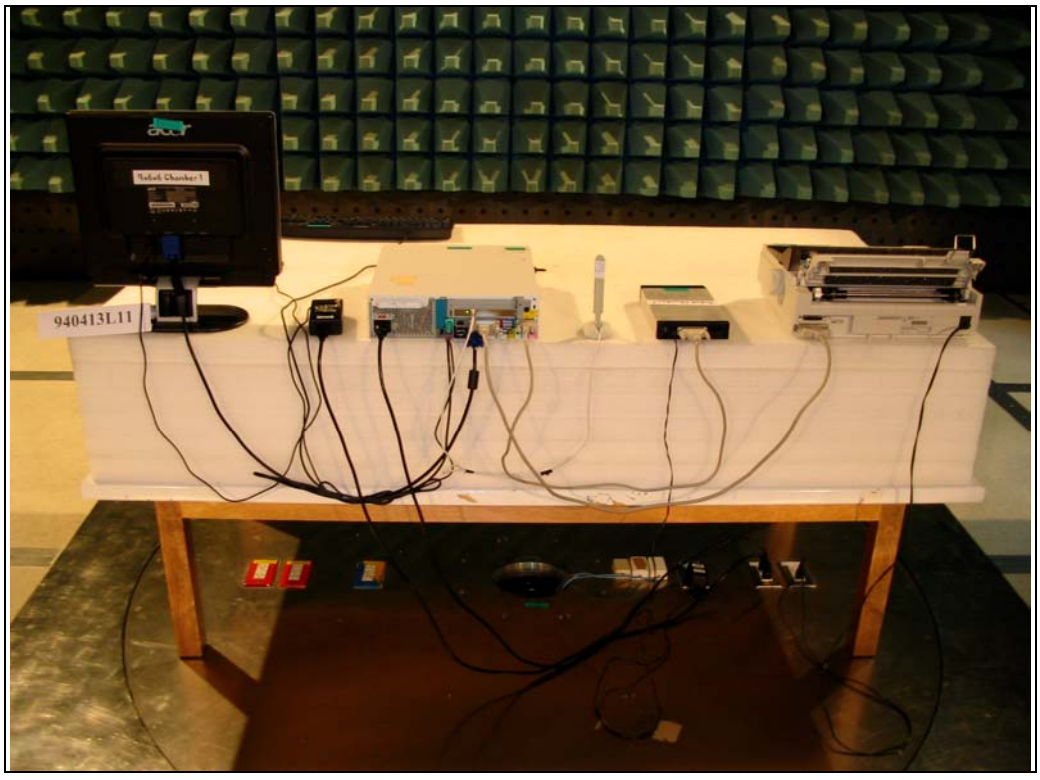
Test Mode A





Test Mode B





7. INFORMATION ON THE TESTING LABORATORIES

We, ADT Corp., were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are accredited and approved by the following approval agencies according to ISO/IEC 17025.

USA	FCC, NVLAP, UL, A2LA
Germany	TUV Rheinland
Japan	VCCI
Norway	NEMKO
Canada	INDUSTRY CANADA , CSA
R.O.C.	CNLA, BSMI, DGT
Netherlands	Telefication
Singapore	PSB , GOST-ASIA(MOU)
Russia	CERTIS(MOU)

Copies of accreditation certificates of our laboratories obtained from approval agencies can be downloaded from our web site: www.adt.com.tw/index.5/phtml. If you have any comments, please feel free to contact us at the following:

Linko EMC/RF Lab:
Tel: 886-2-26052180
Fax: 886-2-26052943

Hsin Chu EMC/RF Lab:
Tel: 886-3-5935343
Fax: 886-3-5935342

Hwa Ya EMC/RF/Safety Telecom Lab:
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Web Site: www.adt.com.tw

The address and road map of all our labs can be found in our web site also