The Measurement of Conducted Spurious Emissions

CONDUCTED SPURIOUS EMISSIONS MEASUREMENT

1. LIMITS OF CONDUCTED SPURIOUS EMISSIONS EASUREMENT

Below 20dB of the highest emission level of operating band (in 100KHz Resolution Bandwidth, see Section 15.247(c)). Emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the limits specified in Section 15.209(a) (see Section 15.205(c)).

2. TEST INSTRUMENTS

Description & Manufacturer	Model No.	Serial No.	Calibrated Until
R&S SPECTRUM ANALYZER	FSP	1093.4495.30	Dec. 19, 2003
HIGH PASS FILTER	WHK3.1/18G-10SS	SN4	Jun. 12, 2004

NOTE:

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

3. TEST PROCEDURE

2.5GHz~13GHz:

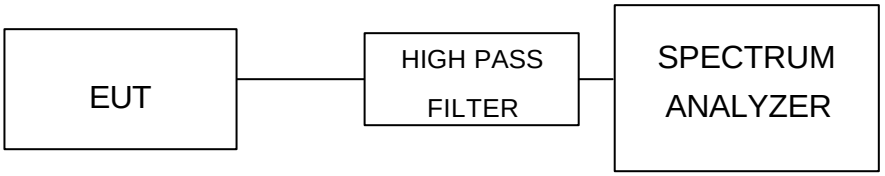
The transmitter output was connected to the spectrum analyzer via a low lose cable and a high pass filter. Set both RBW and VBW of spectrum analyzer to 100 kHz with suitable frequency span including 100 kHz bandwidth from band edge. The band edges was measured and recorded.

13GHz~25GHz:

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 kHz bandwidth from band edge. The band edges was measured and recorded.

4. TEST SETUP

2.5GHz~13GHz:



13GHz~25GHz:

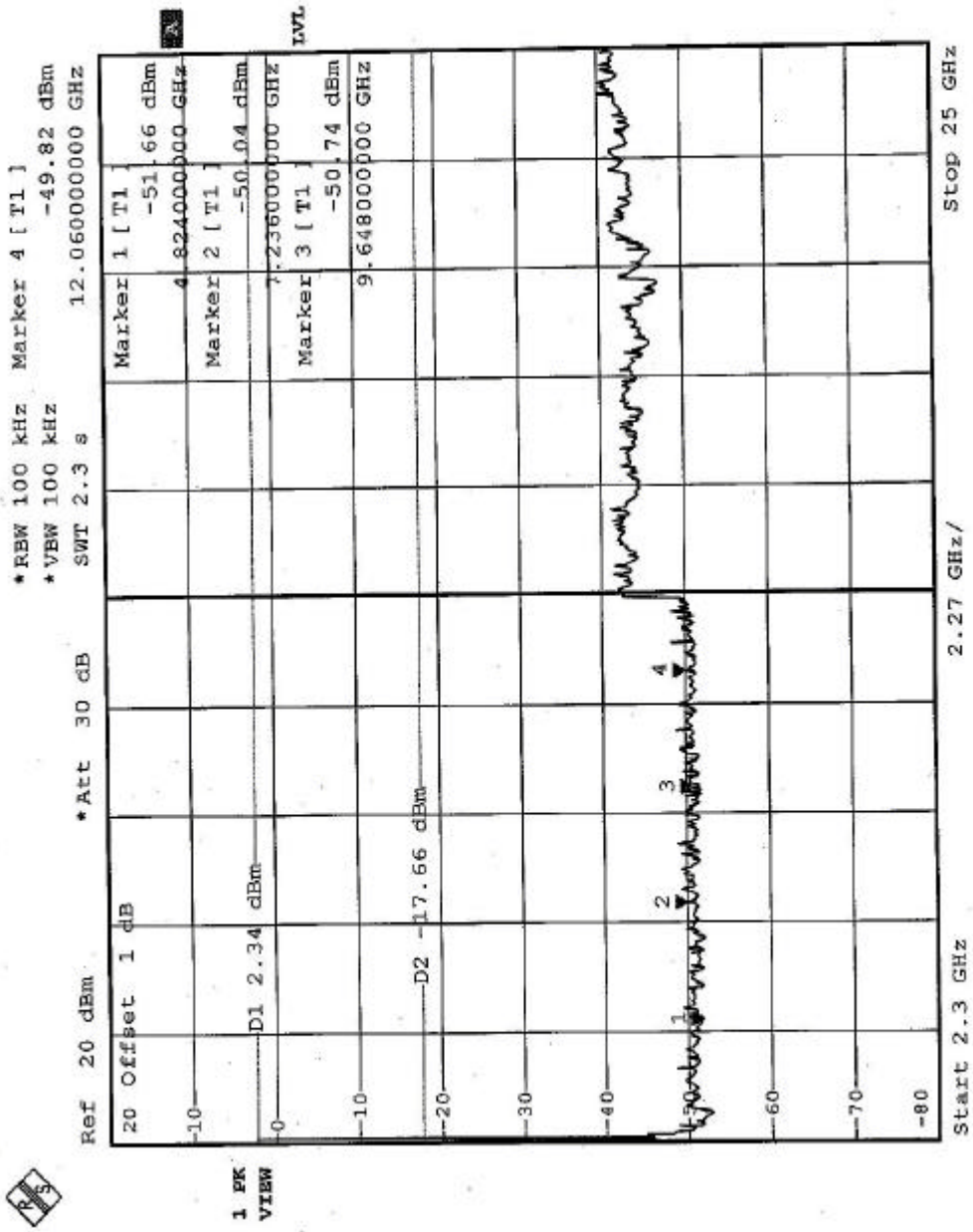
5. EUT OPERATING CONDITIONS

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

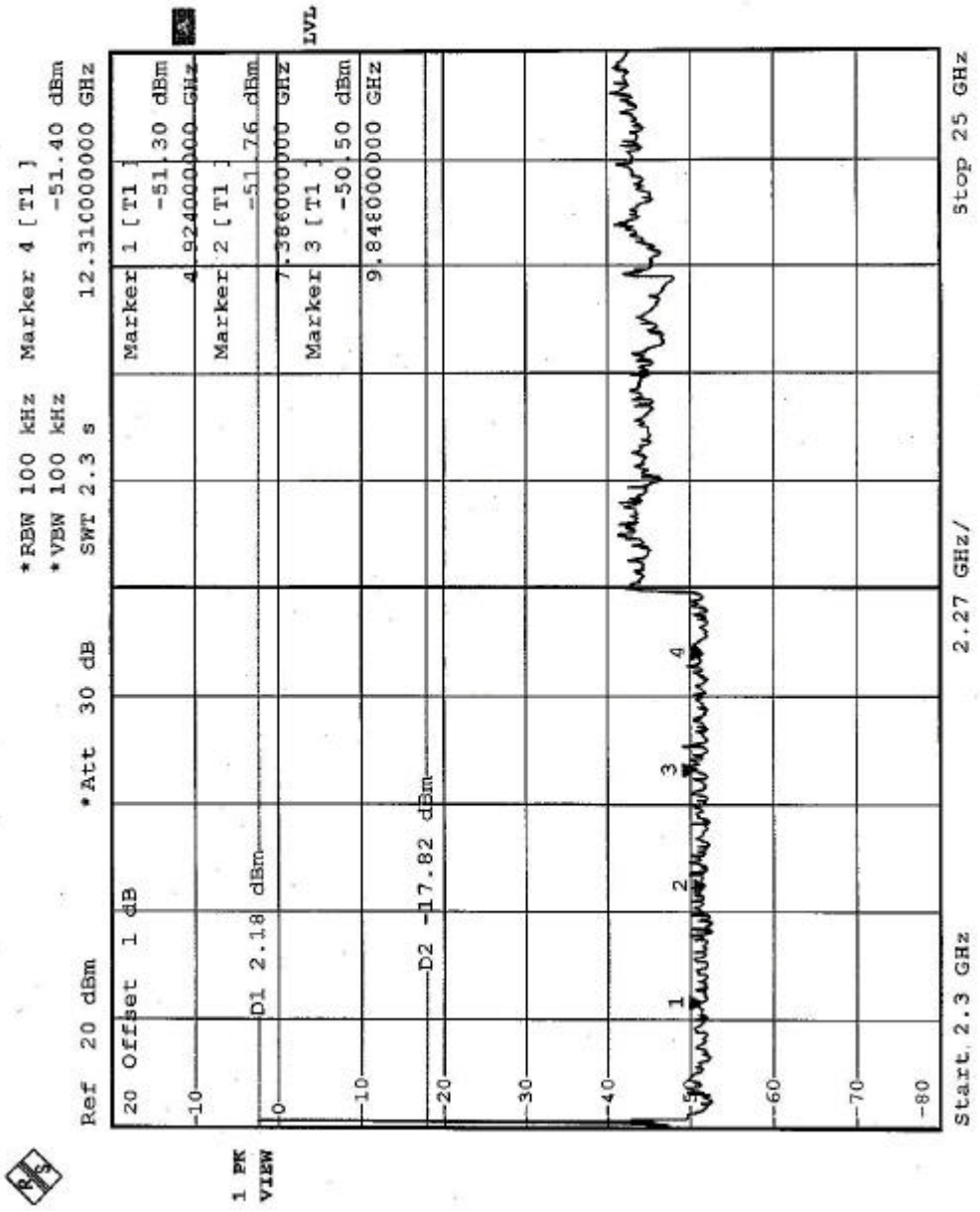
TEST RESULTS (A) – For 802.11b

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

Ch1


Ref 20 dBm
20 Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-49.82 dBm
12.060000000 GHz
Marker 1 [T1]
-51.66 dBm
4.824000000 GHz
Marker 2 [T1]
-50.04 dBm
7.236000000 GHz
Marker 3 [T1]
-50.74 dBm
9.648000000 GHz
1 PK
VIEW
D1 2.34 dBm
D2 -17.66 dBm
Start 2.3 GHz
2.27 GHz/
Stop 25 GHz

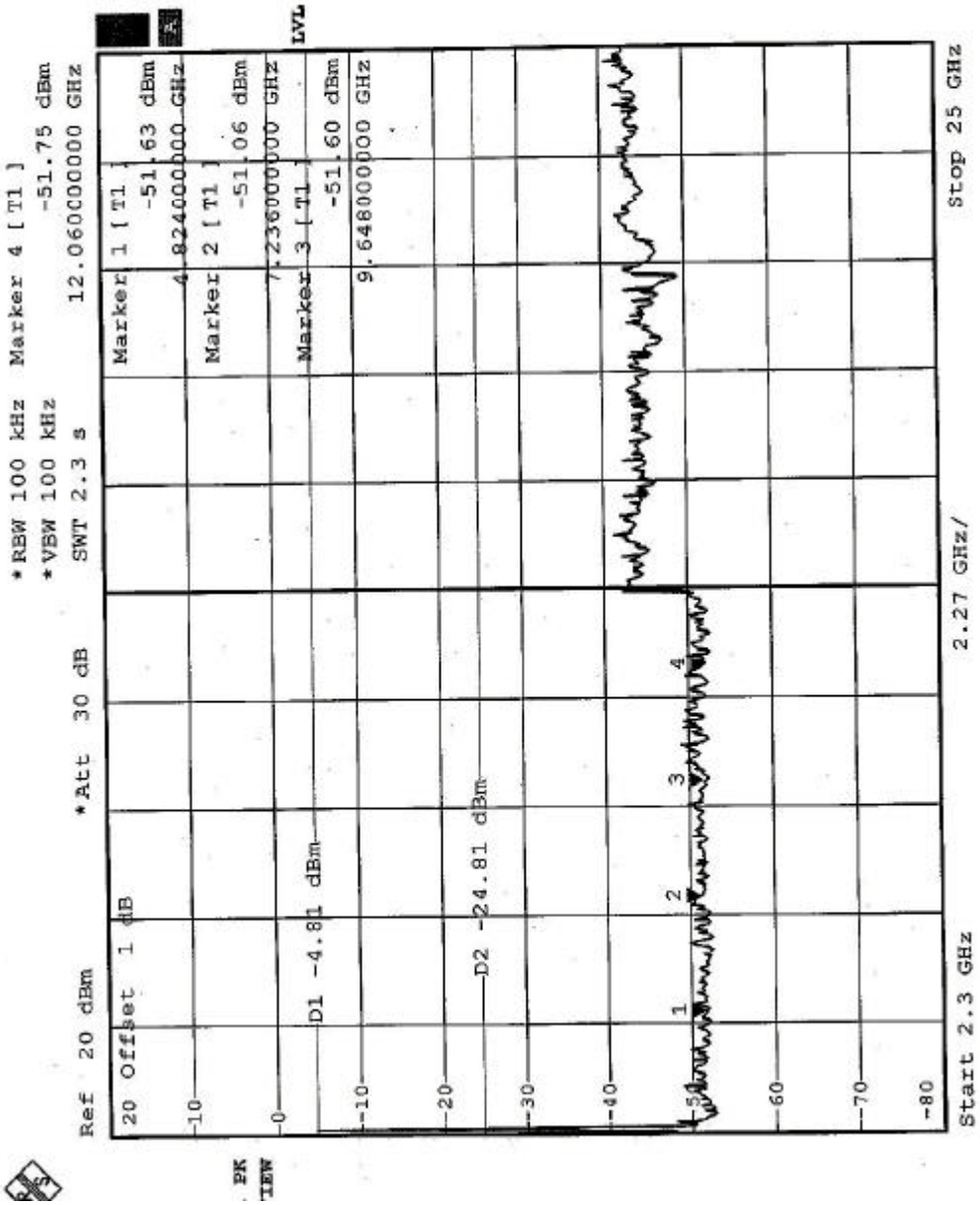
Ch11


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-51.40 dBm
12.310000000 GHz
20 Offset 1 dB
D1 2.18 dBm
D2 -17.82 dBm
Marker 1 [T1]
-51.30 dBm
4.924000000 GHz
Marker 2 [T1]
-51.76 dBm
7.386000000 GHz
Marker 3 [T1]
-50.50 dBm
9.846000000 GHz
1 PK
VIEW
Start 2.3 GHz
2.27 GHz/
Stop 25 GHz

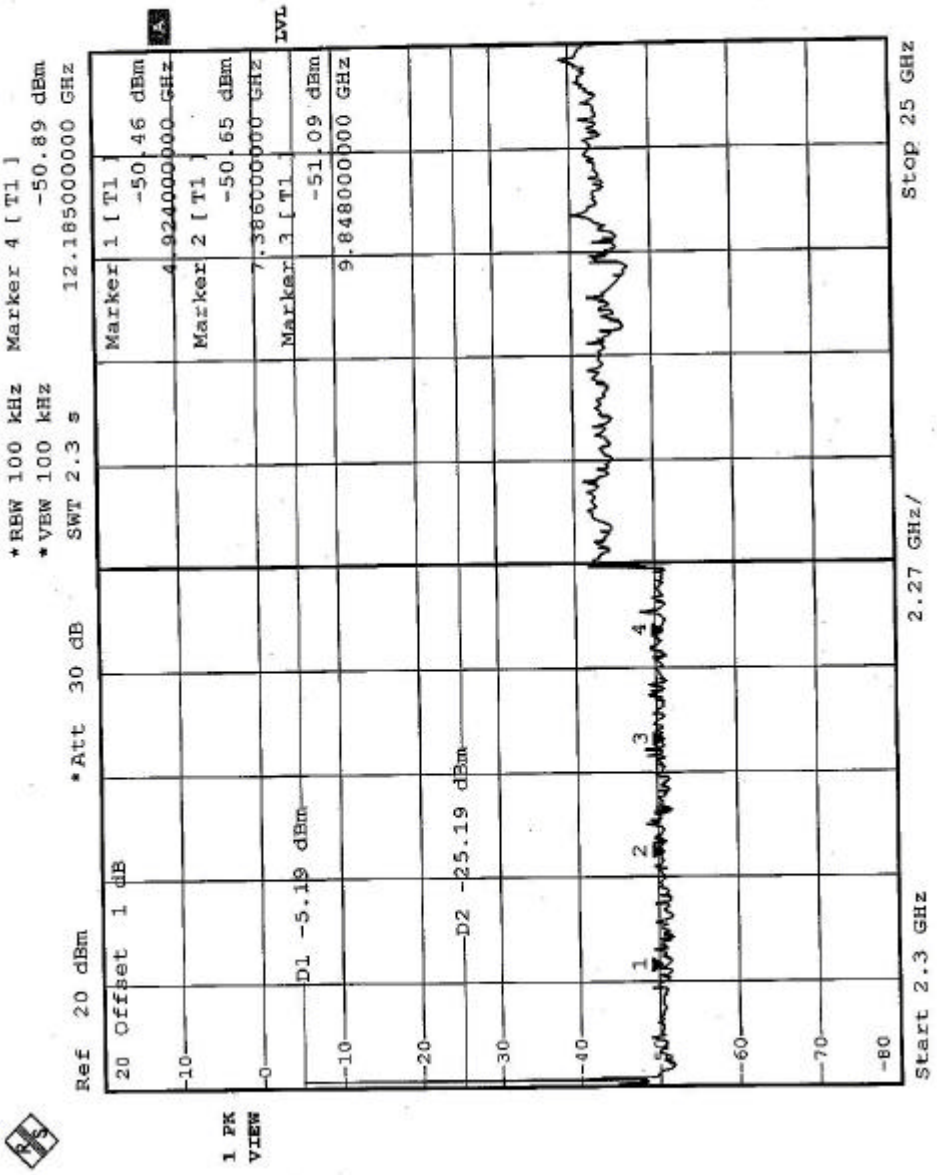
TEST RESULTS (A) – For 802.11g

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

Ch1


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-51.75 dBm
12.060000000 GHz
20 Offset 1 dB
D1 -4.81 dBm
D2 -24.81 dBm
Marker 1 [T1]
-51.63 dBm
4.824000000 GHz
Marker 2 [T1]
-51.06 dBm
7.236000000 GHz
Marker 3 [T1]
-51.60 dBm
9.648000000 GHz
Start 2.3 GHz
2.27 GHz/
Stop 25 GHz

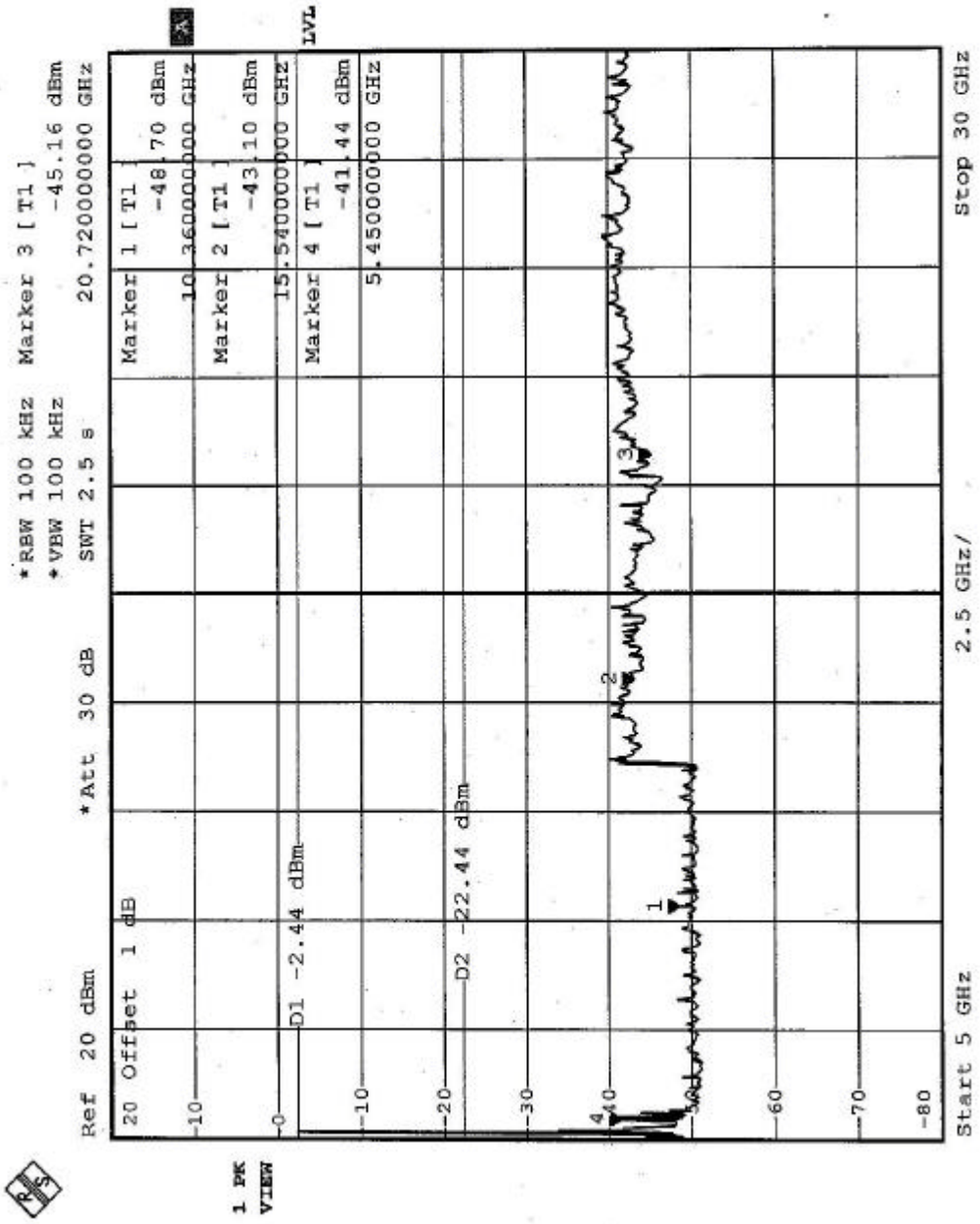
Ch11


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-50.89 dBm
12.185000000 GHz
20 Offset 1 dB
1 PK
VIEW
D1 -5.19 dBm
D2 -25.19 dBm
Marker 1 [T1]
-50.46 dBm
4.924000000 GHz
Marker 2 [T1]
-50.65 dBm
7.386000000 GHz
Marker 3 [T1]
-51.09 dBm
9.848000000 GHz
Start 2.3 GHz
2.27 GHz/
Stop 2.5 GHz

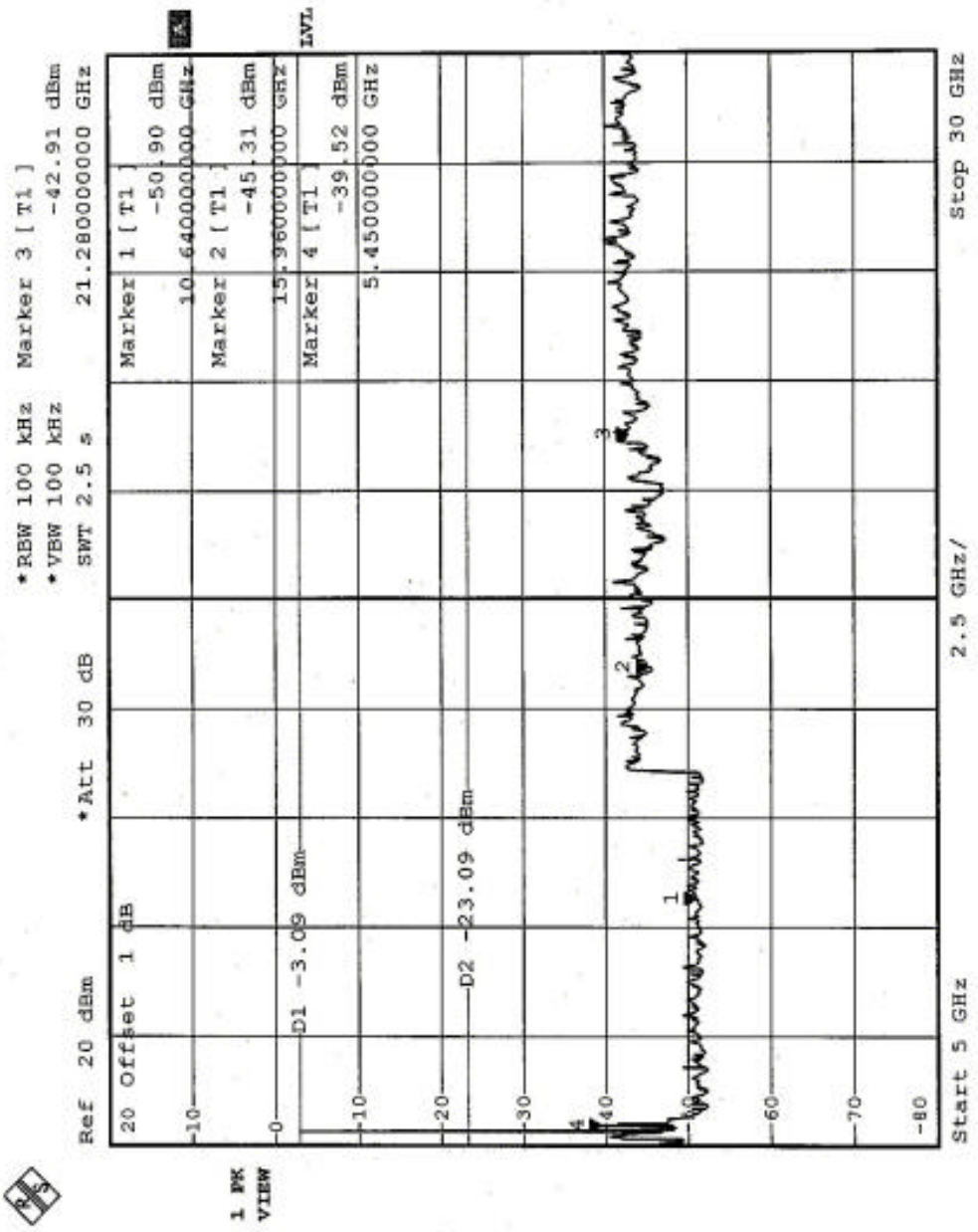
TEST RESULTS (A) – For 802.11a, Normal mode

The spectrum plots are attached on the following 4 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

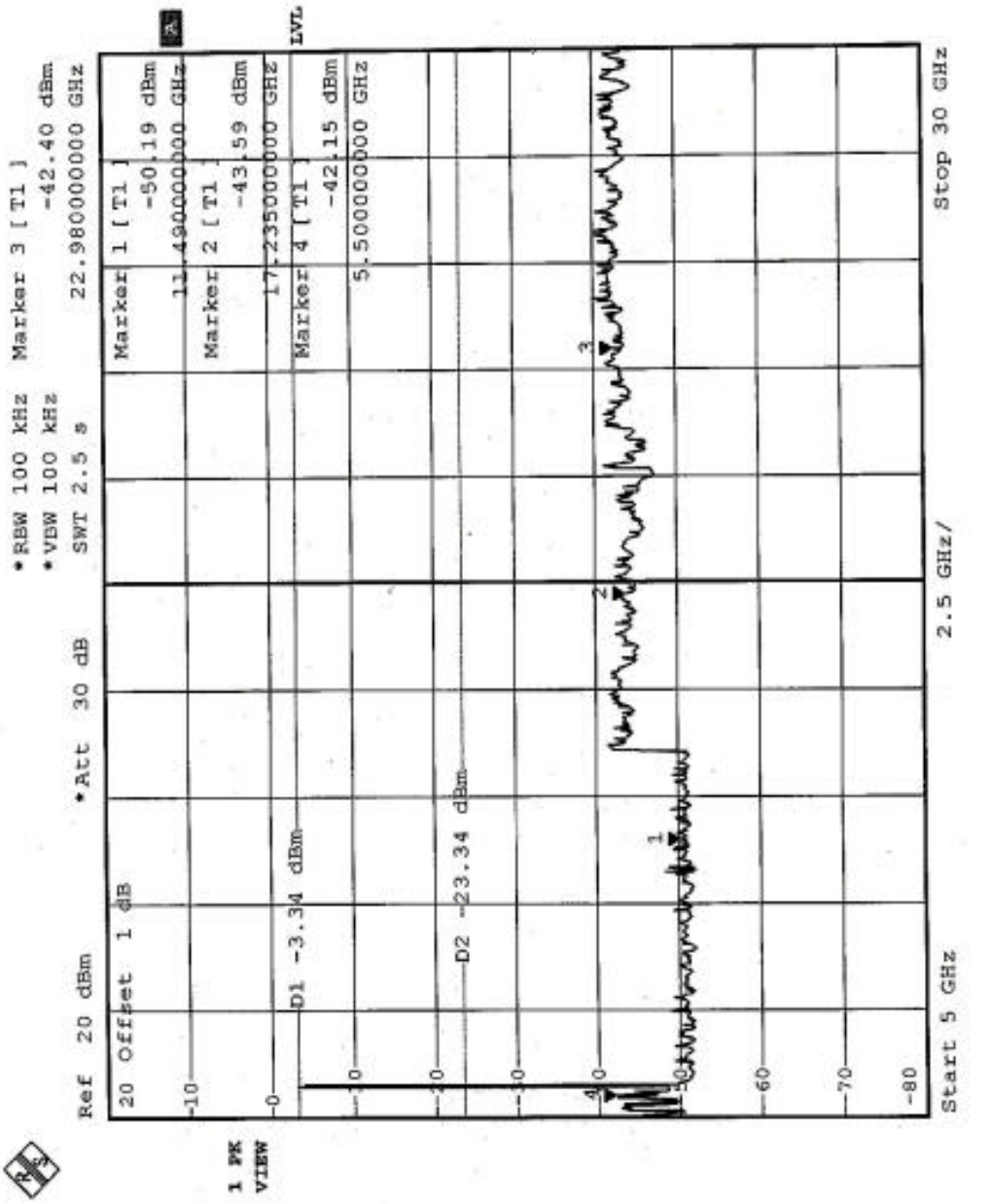
Ch1


Ref 20 dBm
20 Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 3 [T1]
-45.16 dBm
20.720000000 GHz
Marker 1 [T1]
-48.70 dBm
10.360000000 GHz
Marker 2 [T1]
-43.10 dBm
15.540000000 GHz
Marker 4 [T1]
-41.44 dBm
5.450000000 GHz
D1 -2.44 dBm
D2 -22.44 dBm
1 PK
VIEW
A
LVL
Start 5 GHz
2.5 GHz/
Stop 30 GHz

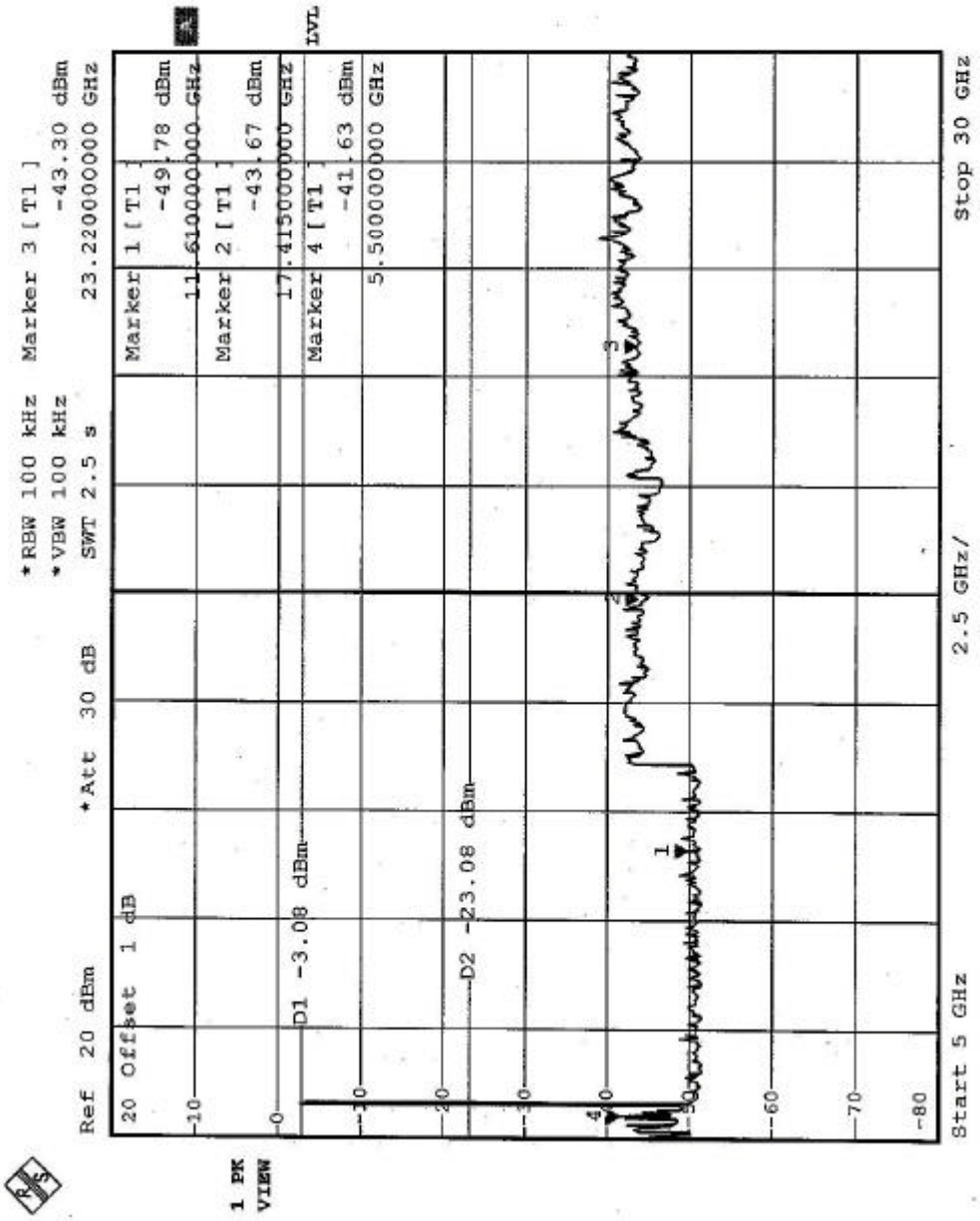
Ch8


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 3 [T1]
-42.91 dBm
21.28000000 GHz
20 Offset 1 dB
D1 -3.09 dBm
D2 -23.09 dBm
Marker 1 [T1]
-50.90 dBm
10.640000000 GHz
Marker 2 [T1]
-45.31 dBm
15.960000000 GHz
Marker 4 [T1]
-39.52 dBm
5.450000000 GHz
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

Ch9


Ref 20 dBm
20 Offset 1 dB
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 3 [T1]
-42.40 dBm
22.980000000 GHz
Marker 1 [T1]
-50.19 dBm
11.490000000 GHz
Marker 2 [T1]
-43.59 dBm
17.235000000 GHz
Marker 4 [T1]
-42.15 dBm
5.500000000 GHz
D1 -3.34 dBm
D2 -23.34 dBm
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

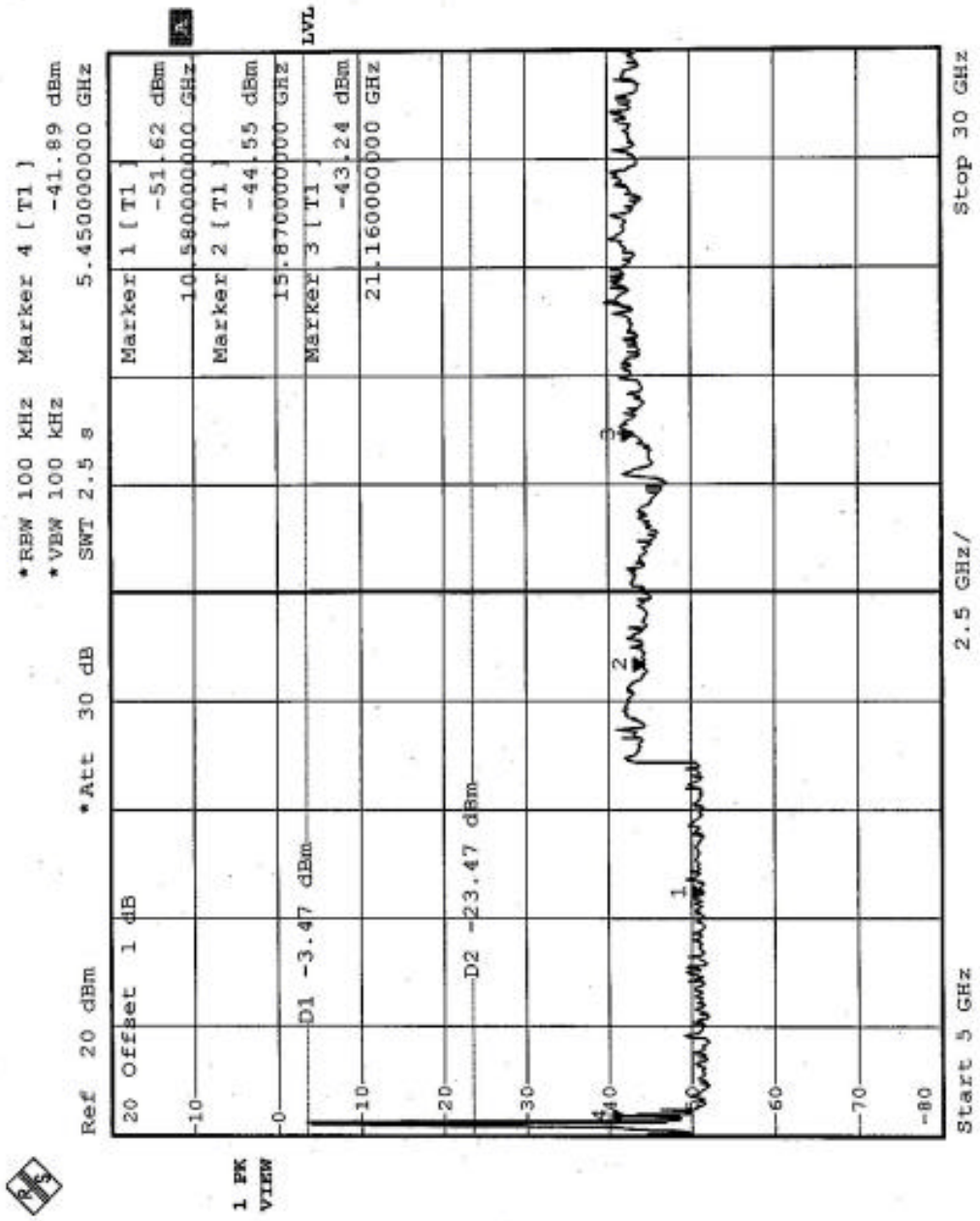
Ch12


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 3 [T1]
-43.30 dBm
23.22000000 GHz
20 Offset 1 dB
D1 -3.08 dBm
D2 -23.08 dBm
Marker 1 [T1]
-49.78 dBm
11.610000000 GHz
Marker 2 [T1]
-43.67 dBm
17.415000000 GHz
Marker 4 [T1]
-41.63 dBm
5.500000000 GHz
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

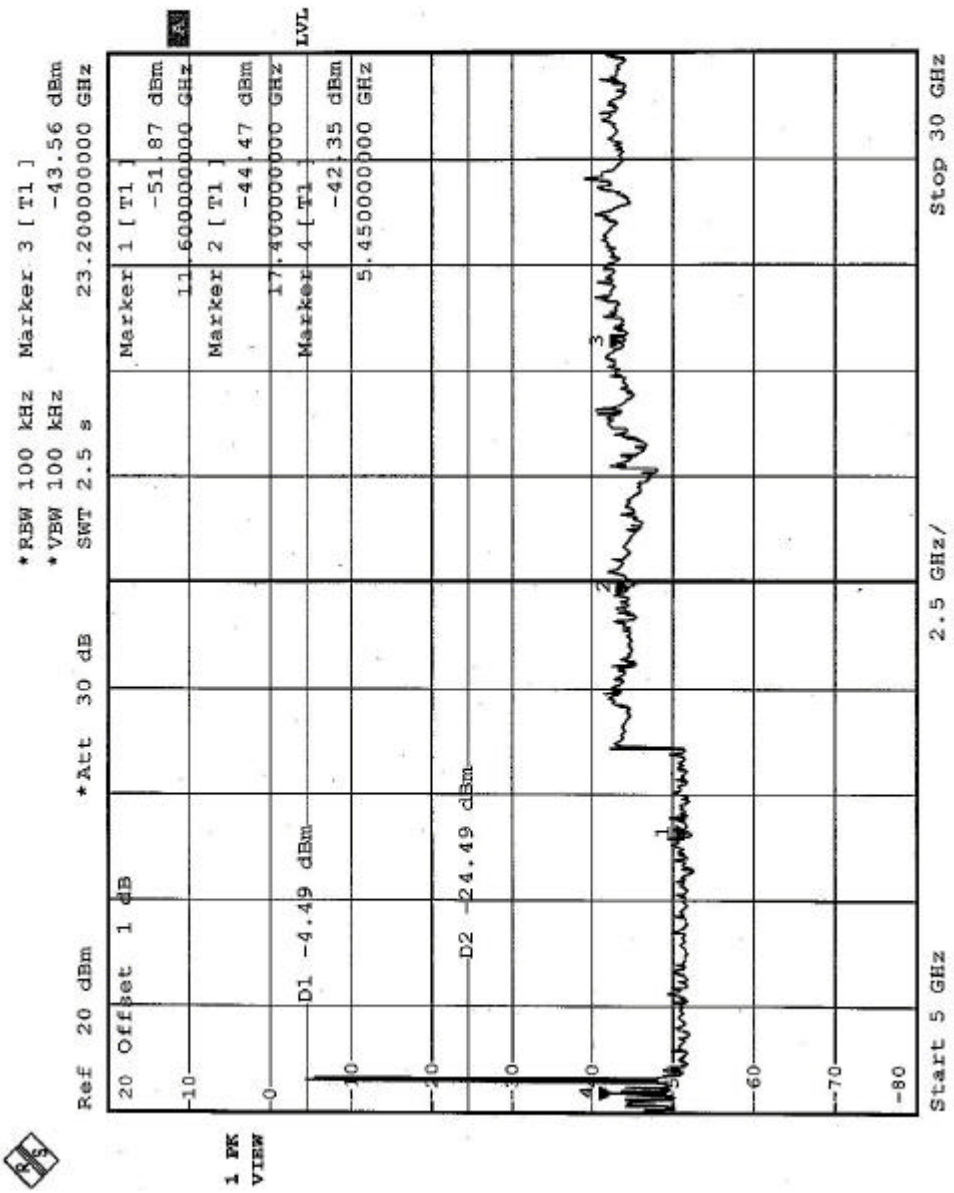
TEST RESULTS (A) – For 802.11a, Turbo

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

Ch3


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-41.89 dBm
5.450000000 GHz
20 Offset 1 dB
D1 -3.47 dBm
D2 -23.47 dBm
Marker 1 [T1]
-51.62 dBm
10.580000000 GHz
Marker 2 [T1]
-44.55 dBm
15.870000000 GHz
Marker 3 [T1]
-43.24 dBm
21.160000000 GHz
LVL
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

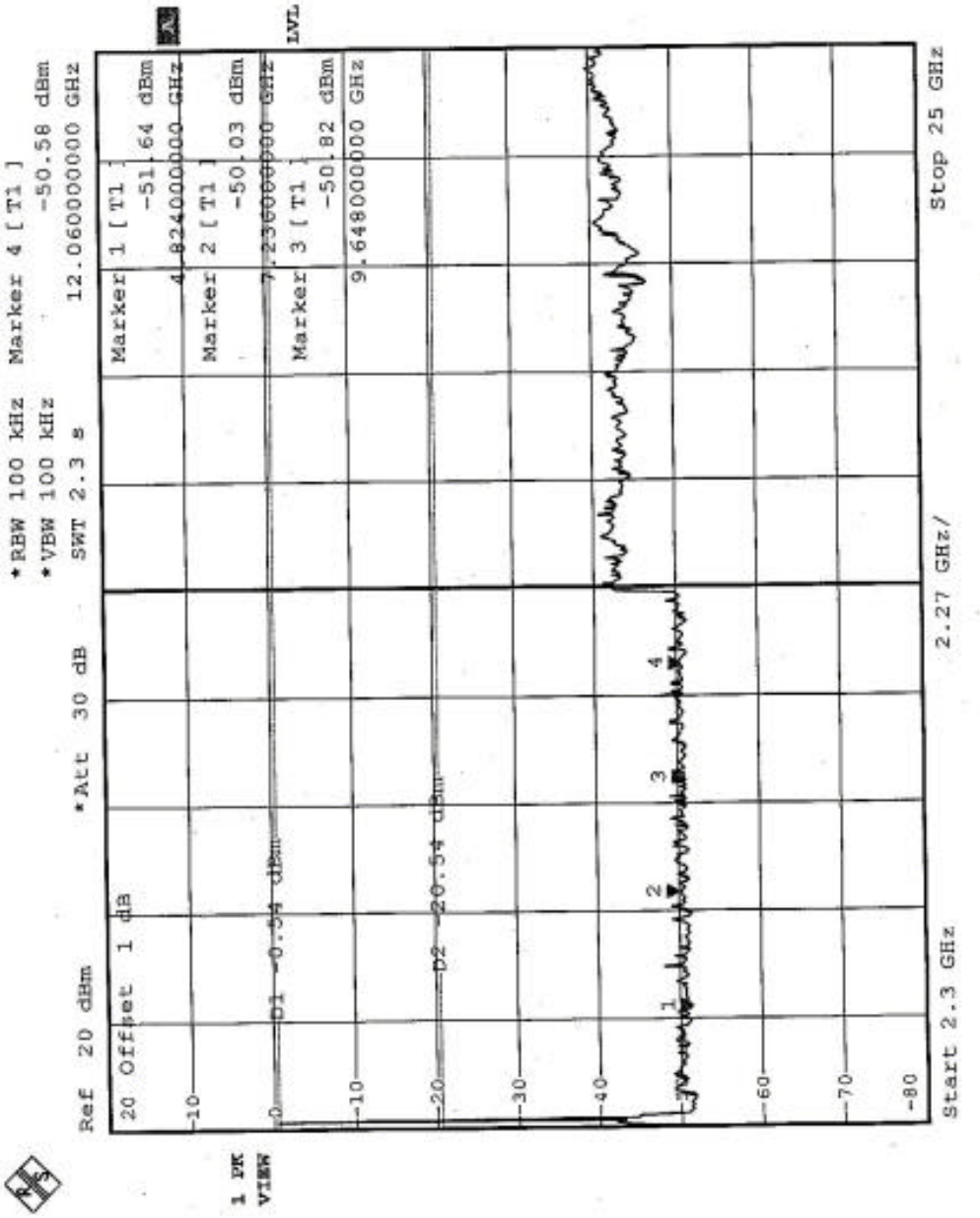
Ch5


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 3 [T1]
-43.56 dBm
23.200000000 GHz
20 Offset 1 dB
D1 -4.49 dBm
D2 -24.49 dBm
Marker 1 [T1]
-51.87 dBm
11.600000000 GHz
Marker 2 [T1]
-44.47 dBm
17.400000000 GHz
Marker 4 [T1]
-42.35 dBm
5.450000000 GHz
1 PK
VIEW
LVL
Start 5 GHz
2.5 GHz/
Stop 30 GHz

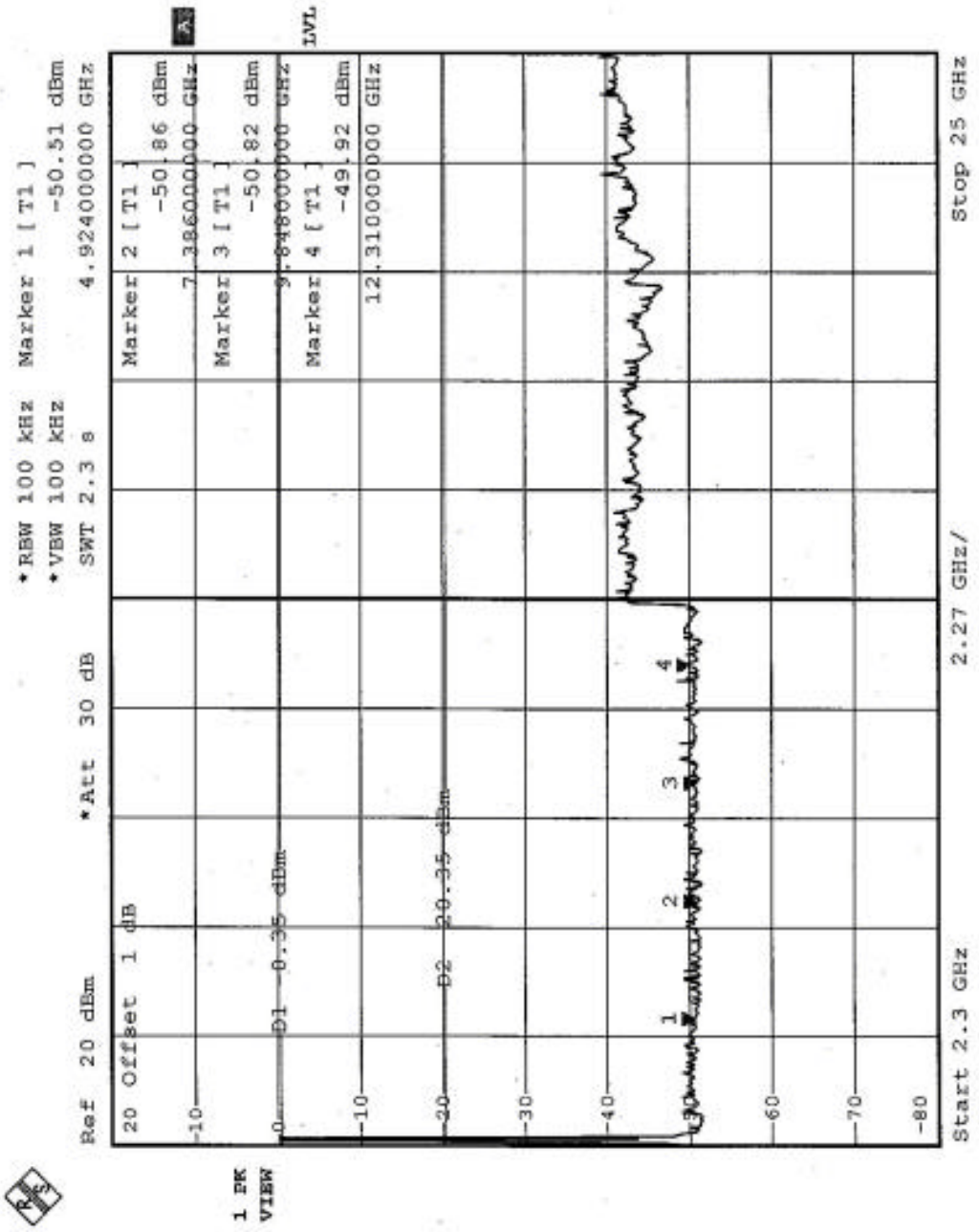
TEST RESULTS (B) – For 802.11b

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

Ch1


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-50.58 dBm
12.060000000 GHz
Marker 1 [T1]
-51.64 dBm
4.824000000 GHz
Marker 2 [T1]
-50.03 dBm
7.236000000 GHz
Marker 3 [T1]
-50.82 dBm
9.648000000 GHz
Offset 1 dB
D1 -0.54 dBm
D2 -20.54 dBm
1 PK
VIEW
Start 2.3 GHz
2.27 GHz/
Stop 2.5 GHz

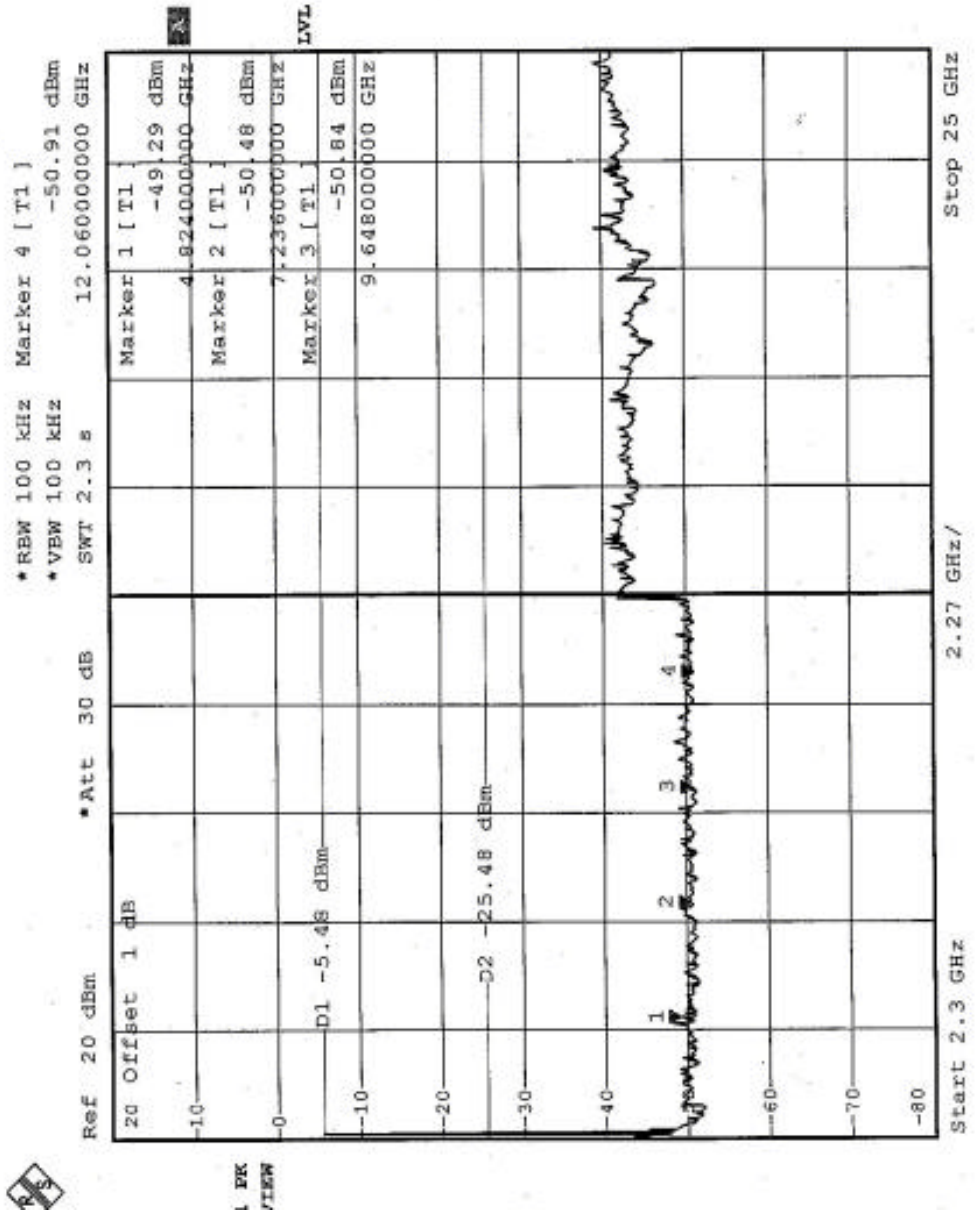
Ch11


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.3 s
Marker 1 [T1]
-50.51 dBm
4.924000000 GHz
20 Offset 1 dB
D1 -0.35 dBm
D2 20.35 dBm
Marker 2 [T1]
-50.86 dBm
7.386000000 GHz
Marker 3 [T1]
-50.82 dBm
9.848000000 GHz
Marker 4 [T1]
-49.92 dBm
12.310000000 GHz
1 PK
VIEW
Start 2.3 GHz
2.27 GHz/
Stop 25 GHz

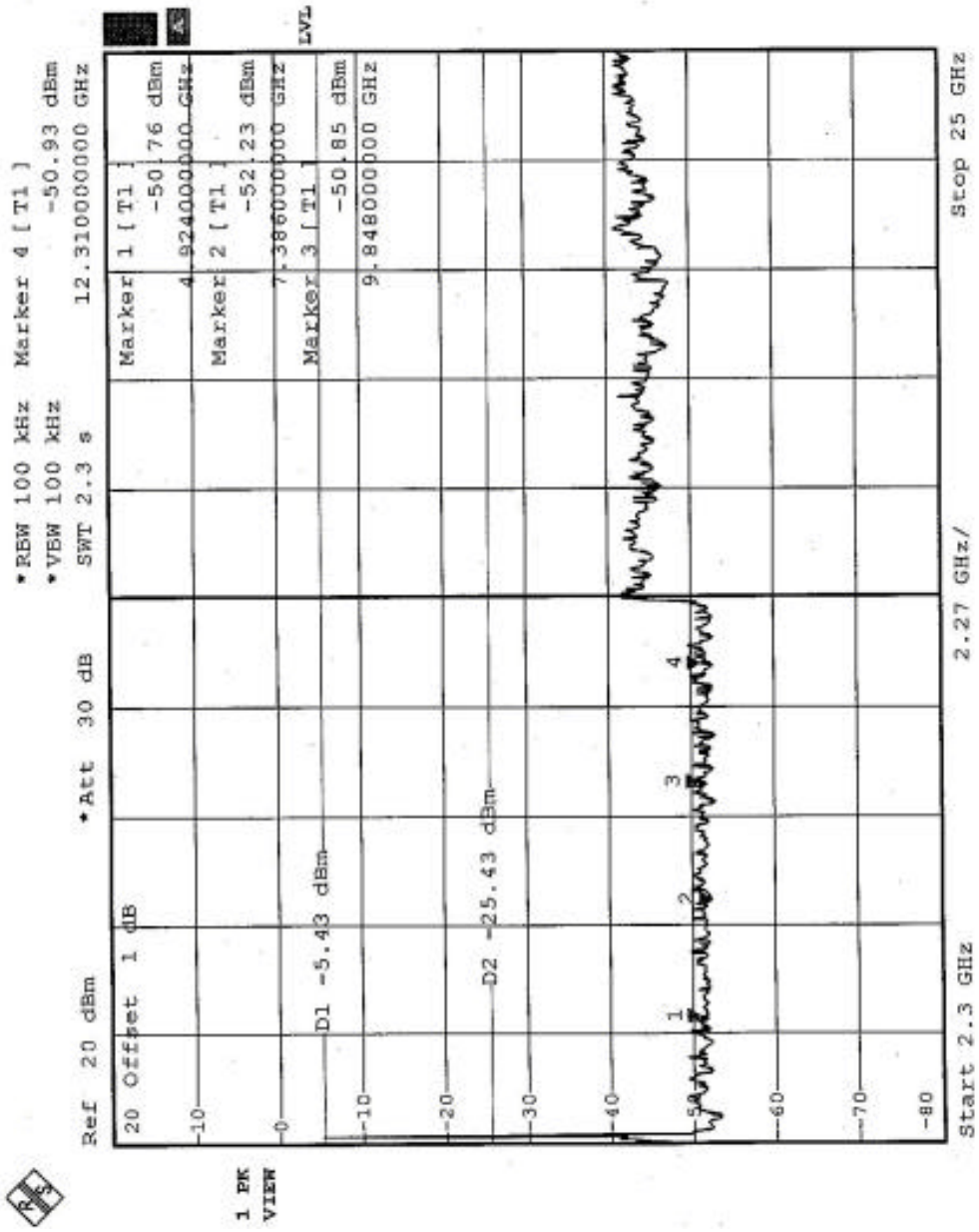
TEST RESULTS (B) – For 802.11g

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

Ch1


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-50.91 dBm
12.060000000 GHz
20 Offset 1 dB
D1 -5.48 dBm
D2 -25.48 dBm
Marker 1 [T1]
-49.29 dBm
4.824000000 GHz
Marker 2 [T1]
-50.48 dBm
7.236000000 GHz
Marker 3 [T1]
-50.84 dBm
9.648000000 GHz
Start 2.3 GHz
2.27 GHz/
Stop 25 GHz

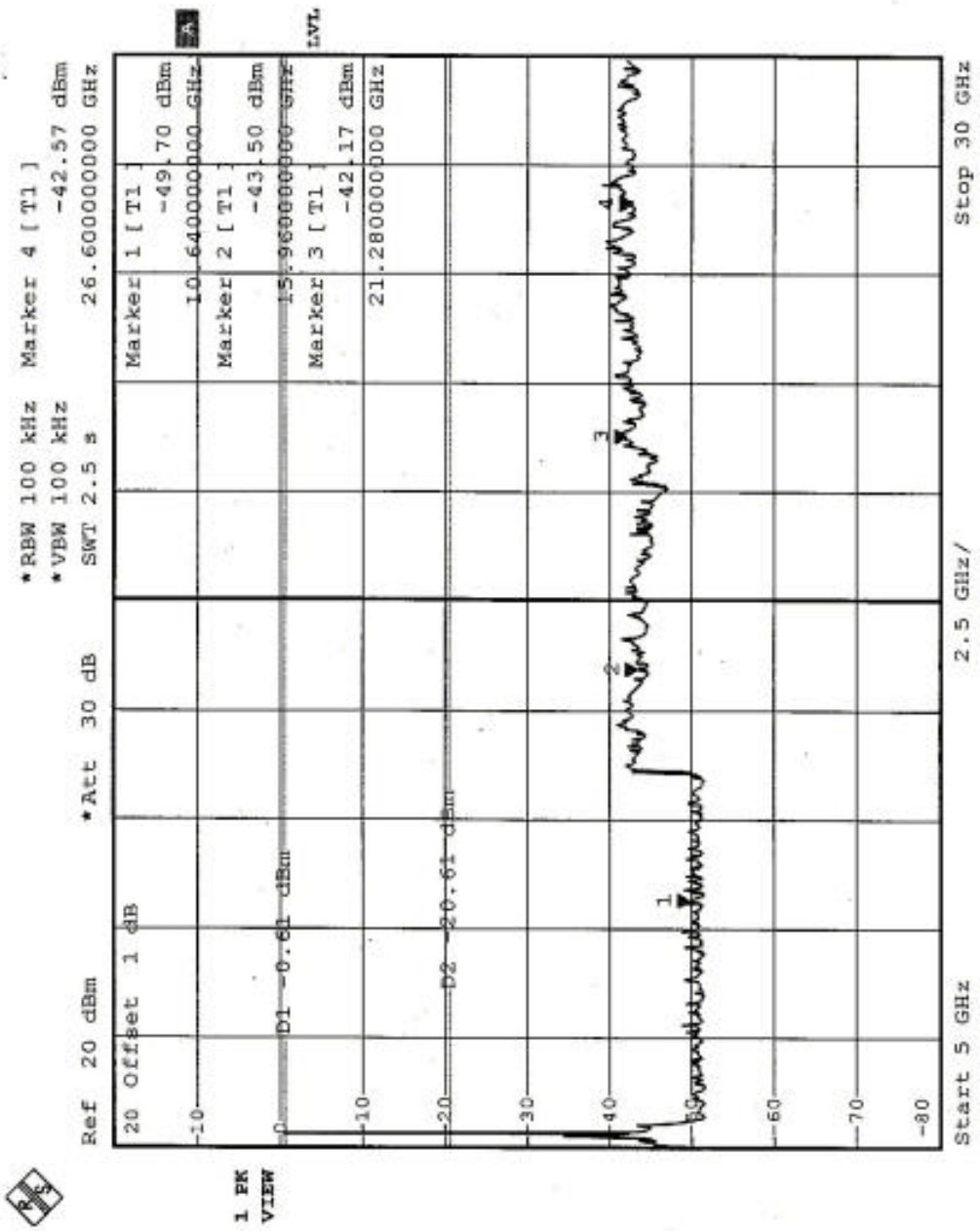
Ch11


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.3 s
Marker 4 [T1]
-50.93 dBm
12.310000000 GHz
20 Offset 1 dB
Marker 1 [T1]
-50.76 dBm
4.924000000 GHz
Marker 2 [T1]
-52.23 dBm
7.386000000 GHz
Marker 3 [T1]
-50.85 dBm
9.848000000 GHz
D1 -5.43 dBm
D2 -25.43 dBm
1 PK
VIEW
Start 2.3 GHz
2.27 GHz/
Stop 2.5 GHz

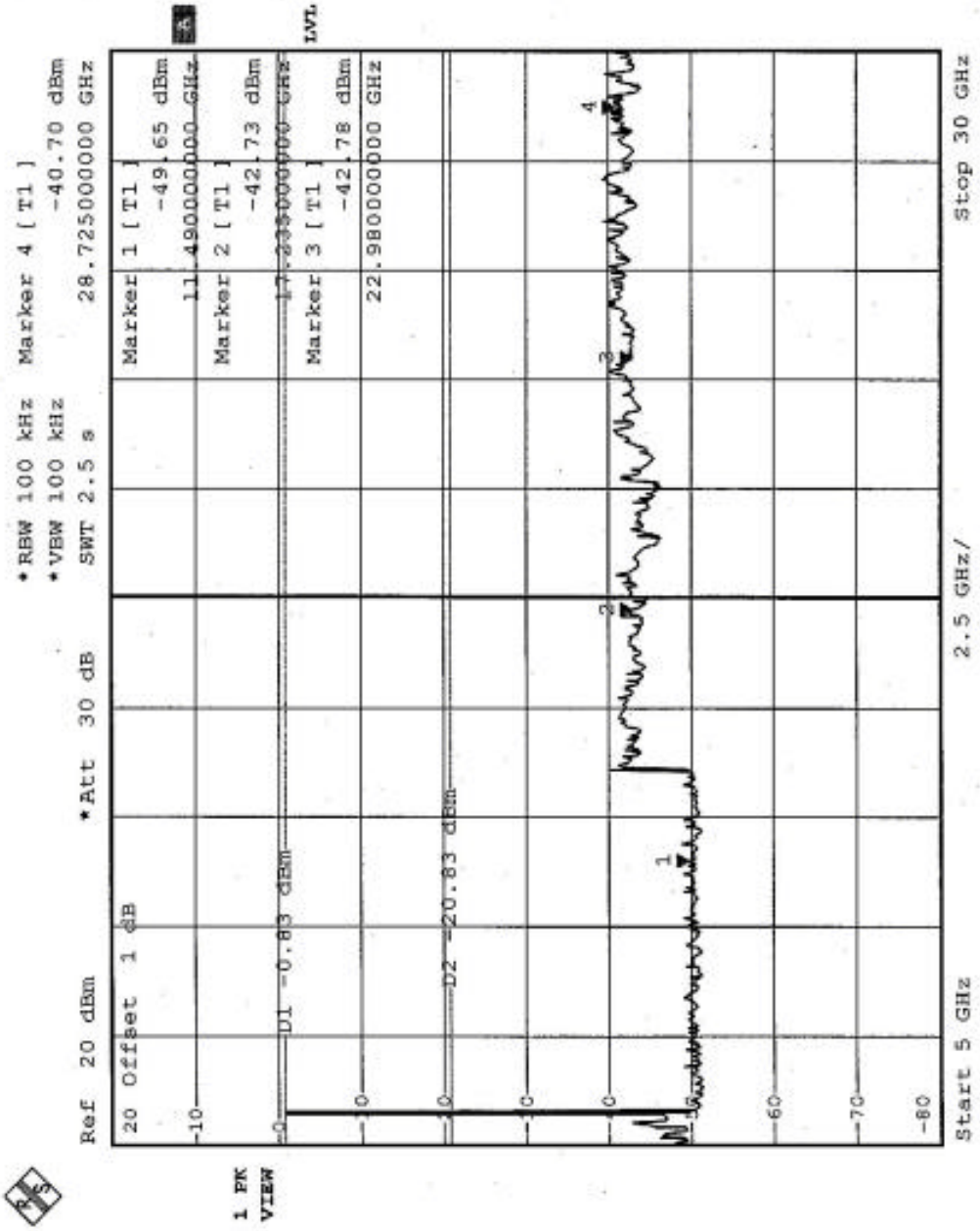
TEST RESULTS (B) – For 802.11a, Normal mode

The spectrum plots are attached on the following 3 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

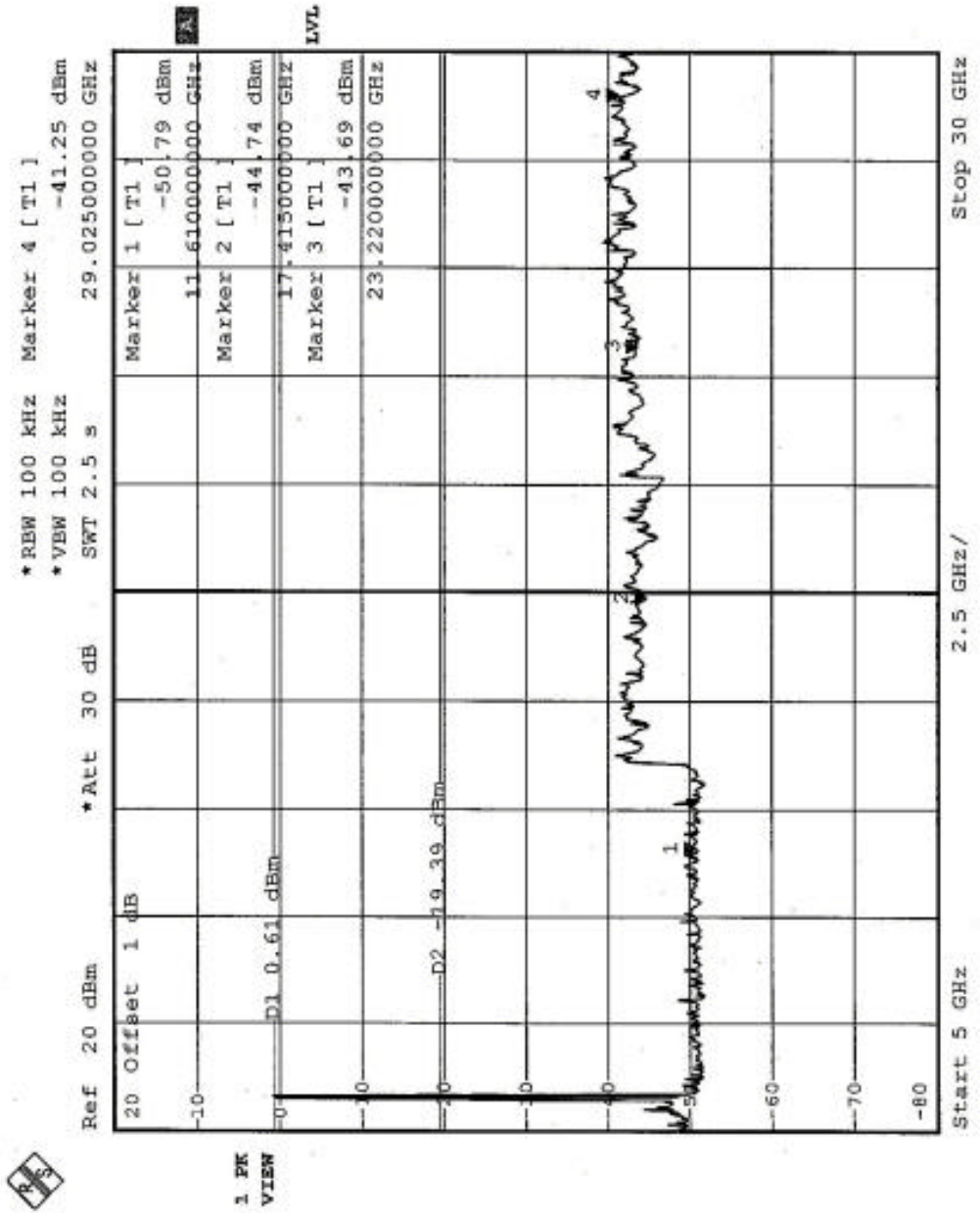
Ch8


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-42.57 dBm
26.600000000 GHz
Offset 1 dB
D1 -0.61 dBm
D2 -20.61 dBm
Marker 1 [T1]
-49.70 dBm
10.640000000 GHz
Marker 2 [T1]
-43.50 dBm
15.960000000 GHz
Marker 3 [T1]
-42.17 dBm
21.280000000 GHz
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

Ch9


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-40.70 dBm
28.725000000 GHz
20 Offset 1 dB
D1 -0.83 dBm
D2 -20.83 dBm
Marker 1 [T1]
-49.65 dBm
11.490000000 GHz
Marker 2 [T1]
-42.73 dBm
17.235000000 GHz
Marker 3 [T1]
-42.78 dBm
22.980000000 GHz
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

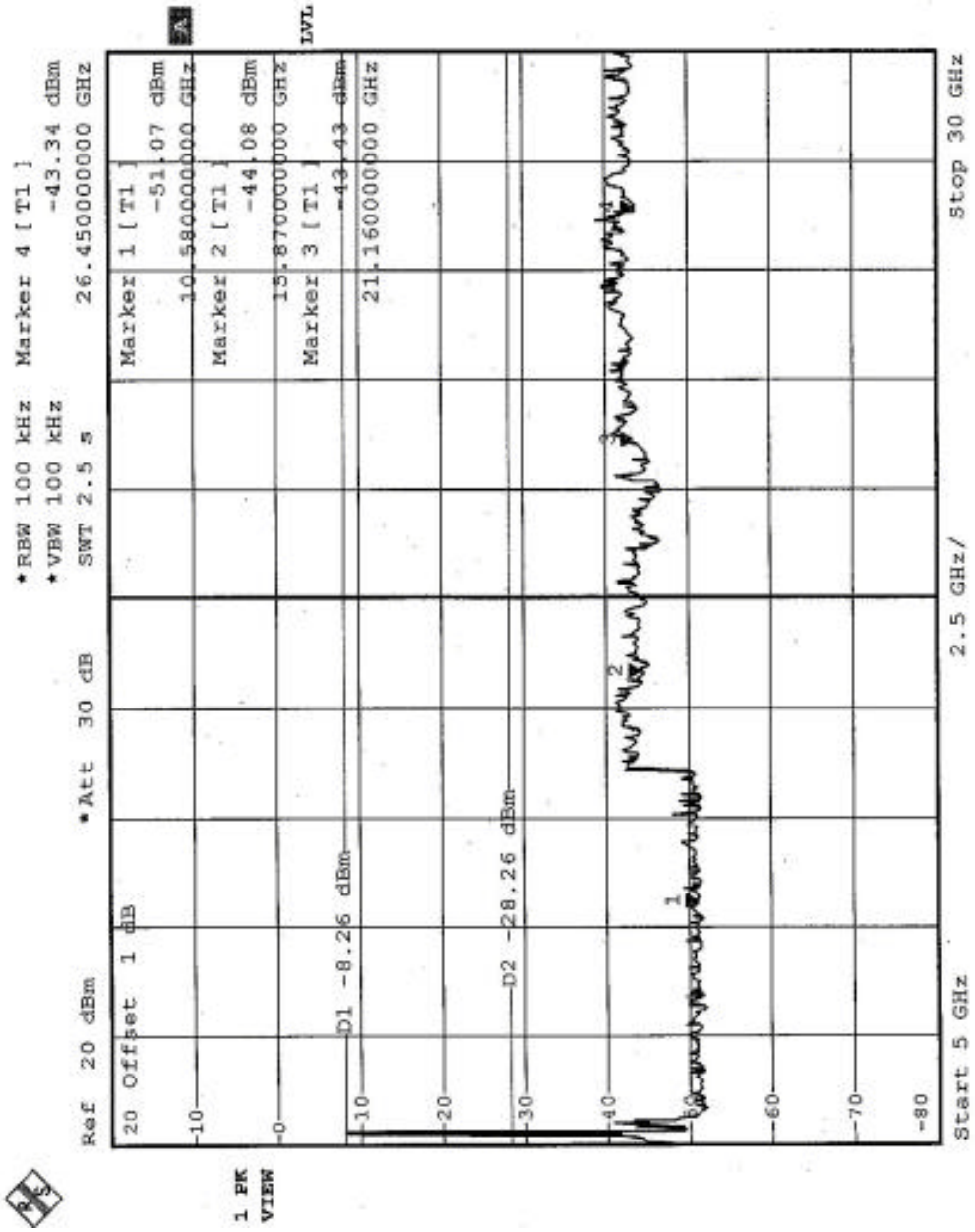
Ch12


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-41.25 dBm
29.025000000 GHz
Marker 1 [T1]
-50.79 dBm
11.610000000 GHz
Marker 2 [T1]
-44.74 dBm
17.415000000 GHz
Marker 3 [T1]
-43.69 dBm
23.220000000 GHz
D1 0.61 dBm
D2 -19.39 dBm
Start 5 GHz
2.5 GHz/
Stop 30 GHz

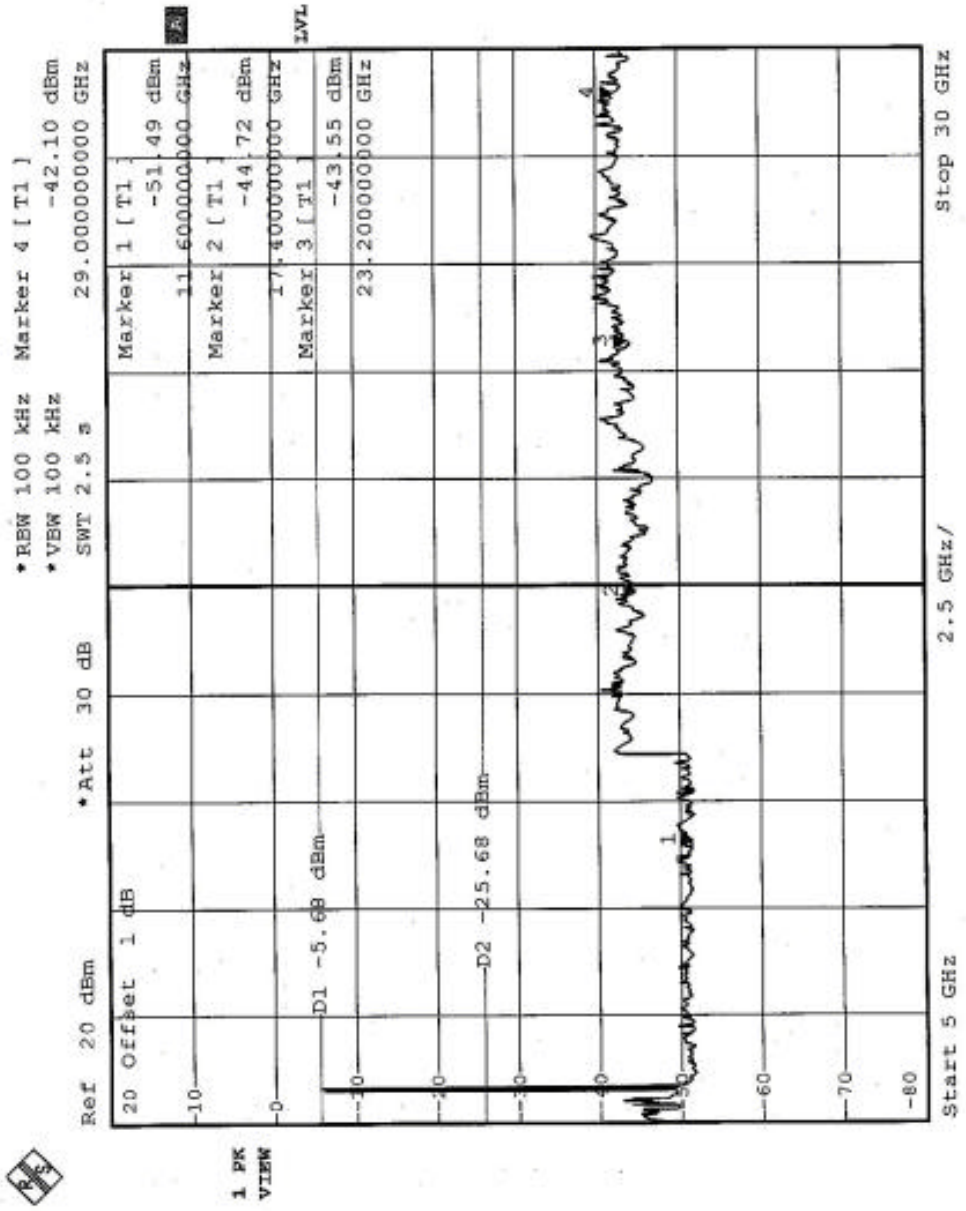
TEST RESULTS (B) – For 802.11a, Turbo

The spectrum plots are attached on the following 2 pages. It shows compliance with the requirement in part 15.247(C),.15.205 and 15.209.

Ch3


Ref 20 dBm
*Att 30 dB
*RBW 100 kHz
*VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-43.34 dBm
26.45000000 GHz
Marker 1 [T1]
-51.07 dBm
10.580000000 GHz
Marker 2 [T1]
-44.08 dBm
15.870000000 GHz
Marker 3 [T1]
-43.43 dBm
21.160000000 GHz
20 Offset 1 dB
D1 -8.26 dBm
D2 -28.26 dBm
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz

Ch5


Ref 20 dBm
Att 30 dB
RBW 100 kHz
VBW 100 kHz
SWT 2.5 s
Marker 4 [T1]
-42.10 dBm
29.000000000 GHz
20 Offset 1 dB
D1 -5.68 dBm
D2 -25.68 dBm
Marker 1 [T1]
-51.49 dBm
11.600000000 GHz
Marker 2 [T1]
-44.72 dBm
17.400000000 GHz
Marker 3 [T1]
-43.55 dBm
23.200000000 GHz
1 PK
VIEW
Start 5 GHz
2.5 GHz/
Stop 30 GHz