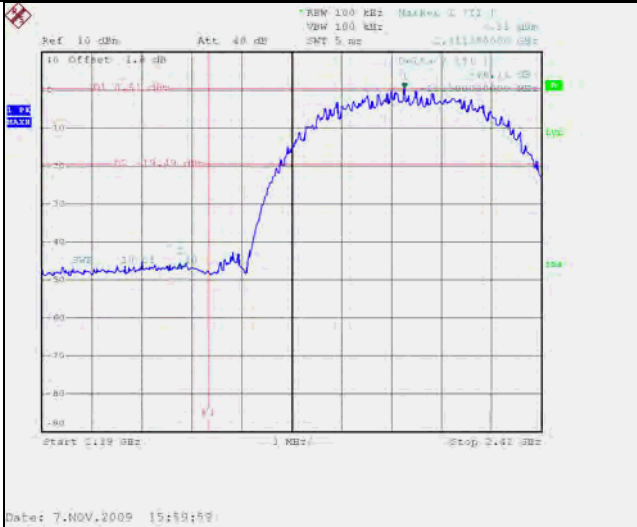
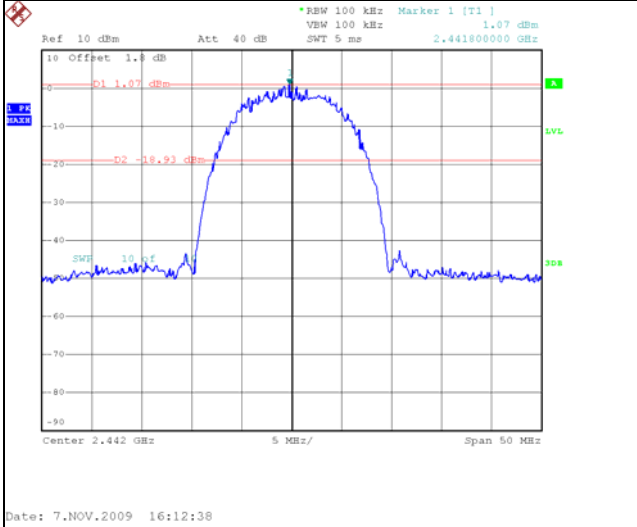
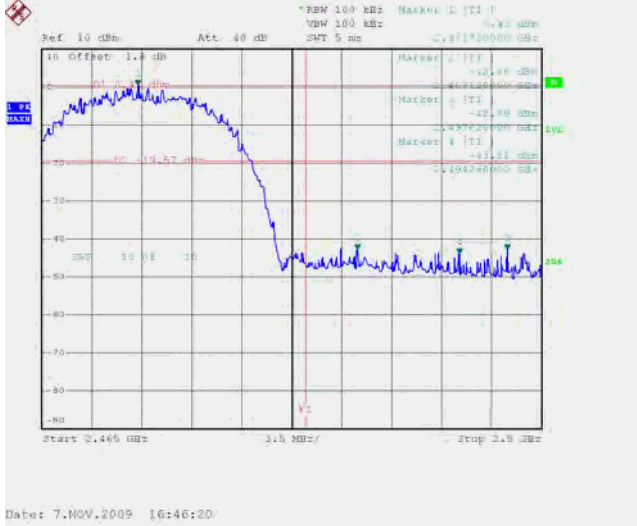


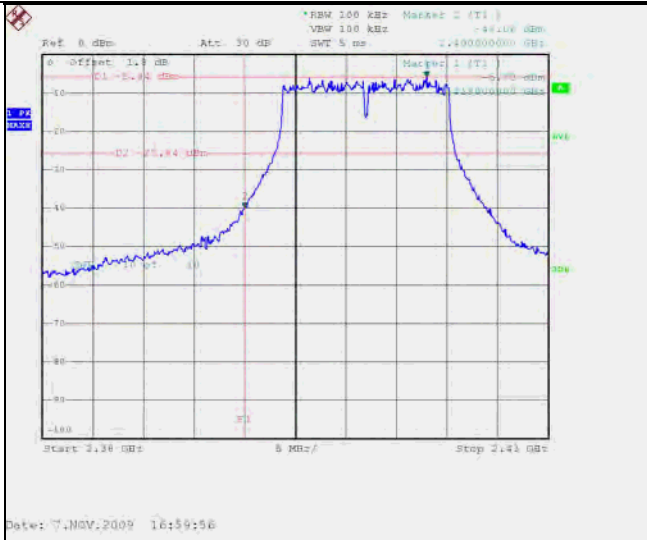
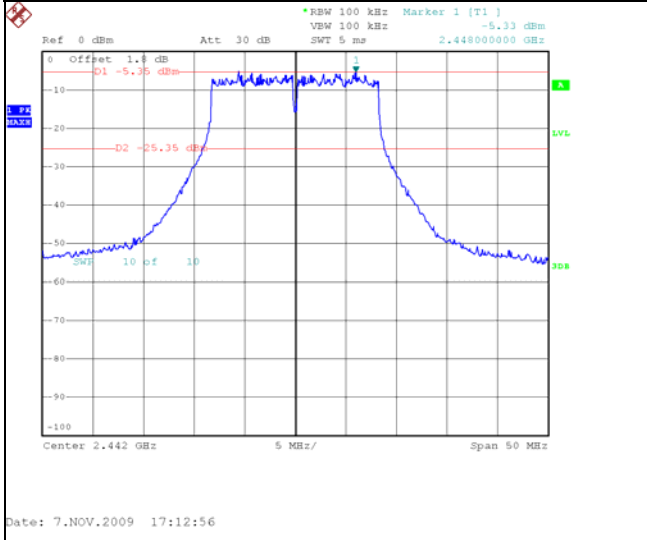
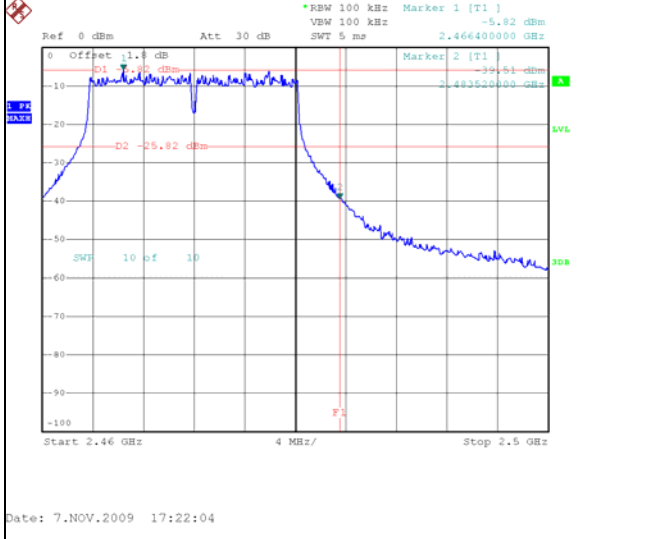
Frequency

1.600 GHz
-74.46 dBm



Plots of 100 kHz Bandwidth of Frequency Band Edges

| Frequency | 802.11b |
|---------------------|--|
| 2412 MHz « 20dBc |  |
| 2442 MHz N/A |  |
| 2472 MHz « 20dBc |  |

| Frequency | 802.11g | |
|---------------------|--|--|
| 2412 MHz « 20dBc |  <p>Ref 0 dBm Att: 30 dB *RBW 100 kHz Marker 1 [T1] -5.42 dBm Offset 1.8 dB VBW 100 kHz D1 -5.42 dBm D2 -25.84 dBm Start 2.40 GHz Stop 2.42 GHz Date: 7.NOV.2009 16:59:56</p> | |
| 2442 MHz N/A |  <p>Ref 0 dBm Att: 30 dB *RBW 100 kHz Marker 1 [T1] -5.35 dBm Offset 1.8 dB VBW 100 kHz D1 -5.35 dBm D2 -25.35 dBm Center 2.442 GHz Span 50 MHz Date: 7.NOV.2009 17:12:56</p> | |
| 2472 MHz « 20dBc |  <p>Ref 0 dBm Att: 30 dB *RBW 100 kHz Marker 1 [T1] -5.82 dBm Offset 1.8 dB VBW 100 kHz D1 -5.82 dBm D2 -25.82 dBm Start 2.46 GHz Stop 2.5 GHz Date: 7.NOV.2009 17:22:04</p> | |

7.2.4 Radiated Emission

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247(c), 15.209
RSS-210 Annex 8.5
Test Date : October 28, 2009
Wireless LAN.
Operating Condition : The EUT was operated at transmitting condition continuously during the test.
Environment Condition : 19 °C/ 43 %
Result : Passed

Radiated Emission Test Data(below 1 GHz)

| Frequency [MHz] | Reading [dB μ V] | Polarization [*H/**V] | Ant.Factor [dB/m] | Cable Loss [dB] | Limit [dB μ V/m] | Emission Level [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|-----------------------|-------------------|-----------------|----------------------|-------------------------------|-------------|
| 54.26 | 20.48 | V | 12.21 | 1.66 | 40.00 | 34.36 | 5.64 |
| 129.89 | 19.07 | V | 12.31 | 1.42 | 43.50 | 32.80 | 10.70 |
| 141.98 | 18.07 | V | 13.01 | 2.62 | 46.00 | 33.70 | 12.30 |
| 560.21 | 18.63 | H | 18.88 | 5.39 | 46.00 | 42.90 | 3.10 |
| 640.00 | 16.69 | H | 20.27 | 5.81 | 46.00 | 42.78 | 3.22 |
| 599.84 | 17.49 | H | 19.89 | 5.58 | 46.00 | 42.96 | 3.04 |

Radiated Emission Test Data (above 1 GHz)

| Frequency [MHz] | Reading [dB μ V] | Pre-Amp Gain [dB] | Ant.Factor [dB/m] | Cable Loss [dB] | Limit [dB μ V/m] | Emission Level [dB μ V/m] | Margin [dB] |
|---------------------------|----------------------|-------------------|-------------------|-----------------|----------------------|-------------------------------|-------------|
| Low Channel (2412 MHz) | | | | | | | |
| 5024.00 | 34.96 | 30.00 | 31.71 | 13.01 | 53.98 | 49.68 | 4.30 |
| | | | | | | | |
| Middle Channel (2442 MHz) | | | | | | | |
| 4884.21 | 34.91 | 30.00 | 31.71 | 13.01 | 53.98 | 49.63 | 4.35 |
| | | | | | | | |
| High Channel (2472 MHz) | | | | | | | |
| 4944.00 | 33.32 | 30.00 | 31.71 | 13.02 | 53.98 | 48.05 | 5.93 |
| | | | | | | | |

Radiated Restricted Band Edge Test Data

| Frequency [MHz] | Reading [dBuV] | Pre-Amp Gain[dB] | Ant Factor [dB/m] | Cable Loss [dB] | Limit [dBuV/m] | Emission Level [dBuV/m] | Margin [dB] | Detect |
|----------------------------|----------------|------------------|-------------------|-----------------|----------------|-------------------------|-------------|--------|
| Low Channel(2412MHz) | | | | | | | | |
| 2342.85 | 29.59 | 30.00 | 26.29 | 11.12 | 74 | 37.06 | 36.94 | PK |
| 2342.85 | 20.78 | 30.00 | 26.29 | 11.12 | 54 | 29.28 | 25.77 | AV |
| 2335.70 | 30.50 | 30.00 | 26.29 | 11.13 | 74 | 37.94 | 36.06 | PK |
| 2335.70 | 21.21 | 30.00 | 26.29 | 11.13 | 54 | 28.61 | 25.39 | AV |
| High Channel(2472MHz)43.15 | | | | | | | | |
| 2496.48 | 33.71 | 30.00 | 26.29 | 11.14 | 74 | 41.12 | 32.88 | PK |
| 2496.48 | 21.15 | 30.00 | 26.29 | 11.14 | 54 | 28.61 | 25.39 | AV |
| 2494.12 | 35.74 | 30.00 | 26.29 | 11.14 | 74 | 43.15 | 30.85 | PK |
| 2494.12 | 22.10 | 30.00 | 26.29 | 11.14 | 54 | 29.50 | 24.50 | AV |

NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.
2. This test being a result which used RF amplifier.
3. AF = Antenna Factor CL = Cable Loss F/S = Field Strength
4. POL H = Horizontal POL V = Vertical

7.2.5 Power Spectral Density

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247(e)
RSS-210 Annex 8.2 (b)
Test Date : November 7, 2009
Wireless LAN.
Operating Condition : The EUT was operated at transmitting condition
continuously during the test.
Environment Condition : 25 °C/ 41 %
Result : Passed

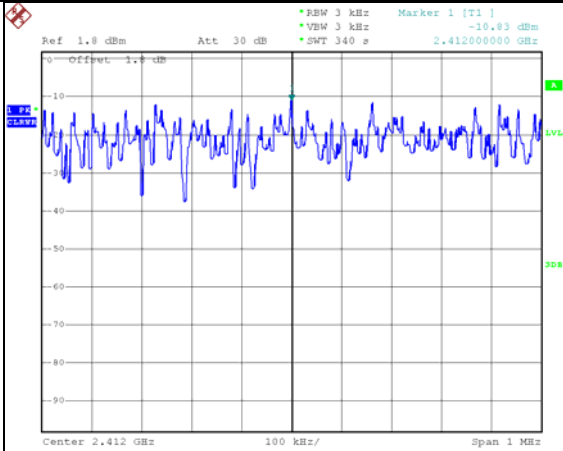
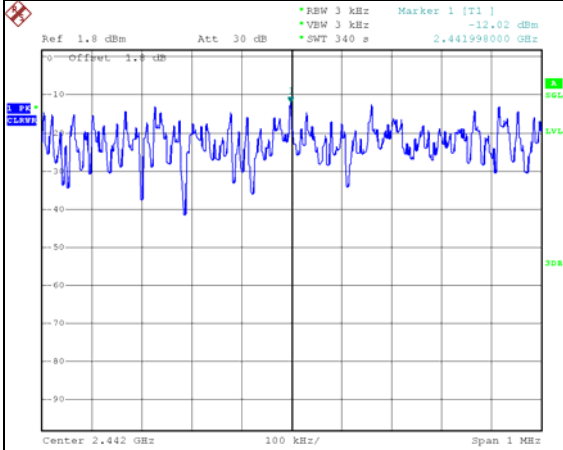
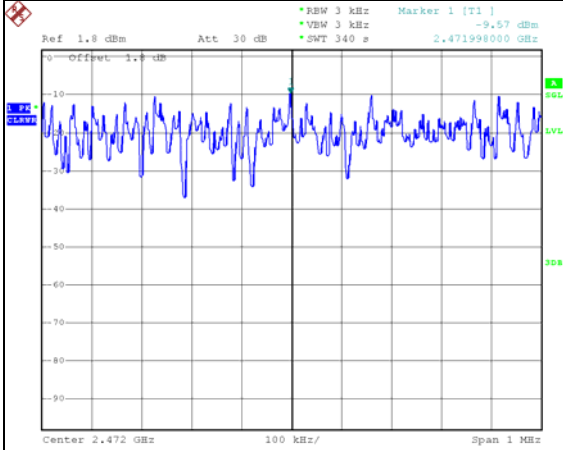
Power Spectral Density Test Data

| Mode | Frequency (MHz) | Power Spectral Density (dBm) | Limit |
|---------|-----------------|------------------------------|-------|
| 802.11b | 2412 | -10.83 | 8 dBm |
| | 2442 | -12.02 | |
| | 2472 | -9.57 | |
| 802.11g | 2412 | -18.63 | |
| | 2442 | -19.36 | |
| | 2472 | -16.82 | |

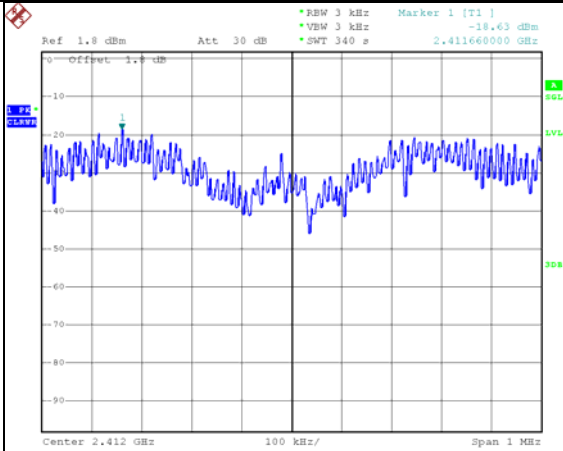
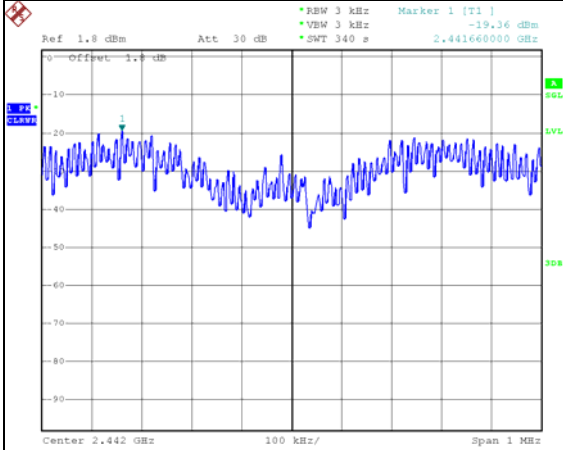
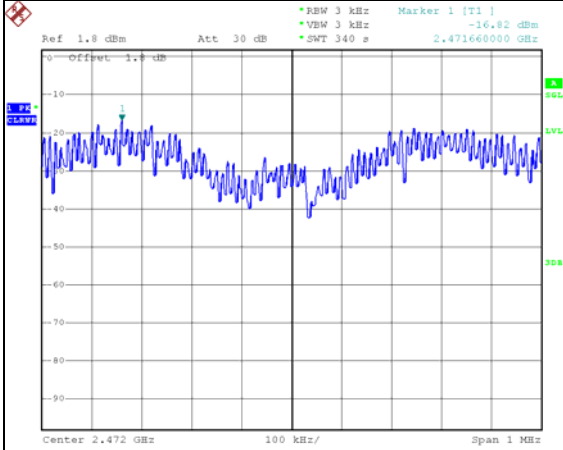
NOTES:

1. Measure conducted Maximum Peak Output of relevant channel using Spectrum analyzer.
2. RBW 3kHz, VBW 3kHz

Plots of Power Spectral Density (802.11b)

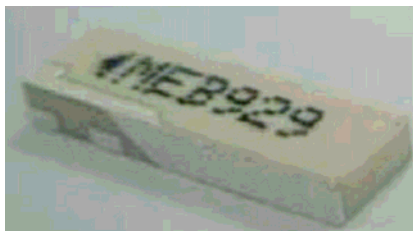
| Frequency | Power Spectral Density measured conducted of 802.11b | |
|------------------------|--|--|
| 2412 MHz -10.83 dBm |  <p>Ref 1.8 dBm Att 30 dB *RBW 3 kHz Marker 1 [T1] -10.83 dBm *VBW 3 kHz *SMT 340 s 2.41200000 GHz</p> <p>Center 2.412 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 17.NOV.2009 11:05:21</p> | |
| 2442 MHz -12.02 dBm |  <p>Ref 1.8 dBm Att 30 dB *RBW 3 kHz Marker 1 [T1] -12.02 dBm *VBW 3 kHz *SMT 340 s 2.441998000 GHz</p> <p>Center 2.442 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 17.NOV.2009 11:55:31</p> | |
| 2472 MHz -9.57 dBm |  <p>Ref 1.8 dBm Att 30 dB *RBW 3 kHz Marker 1 [T1] -9.57 dBm *VBW 3 kHz *SMT 340 s 2.471998000 GHz</p> <p>Center 2.472 GHz 100 kHz/ Span 1 MHz</p> <p>Date: 17.NOV.2009 12:20:34</p> | |

Plots of Power Spectral Density (802.11g)

| Frequency | Power Spectral Density measured conducted of 802.11g | |
|------------------------|--|--|
| 2412 MHz -18.63 dBm |  <p>Date: 17.NOV.2009 11:31:40</p> | |
| 2442 MHz -19.36 dBm |  <p>Date: 17.NOV.2009 12:14:06</p> | |
| 2472 MHz -16.82 dBm |  <p>Date: 17.NOV.2009 12:27:08</p> | |

7.2.6 Antenna Requirement

| | |
|------------------------------|--------------------------------|
| Products | Dielectric Chip Antenna |
| Manufacturer | Patron |
| Model | ACS2450ICAMEB |
| Frequency Range [MHz] | 2400~2485 |
| Polarization | Linear |
| Max Gain | -0.9 dBi |



Structure

7.3 Bluetooth

7.3.1 Channel Separation

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247(a)(1)
RSS-210 Annex 8.1 (a)
Test Date : November 10, 2009
Bluetooth
Operating Condition : The EUT was operated at transmitting condition
continuously during the test.
Environment Condition : 24 °C/ 43 %
Result : Passed

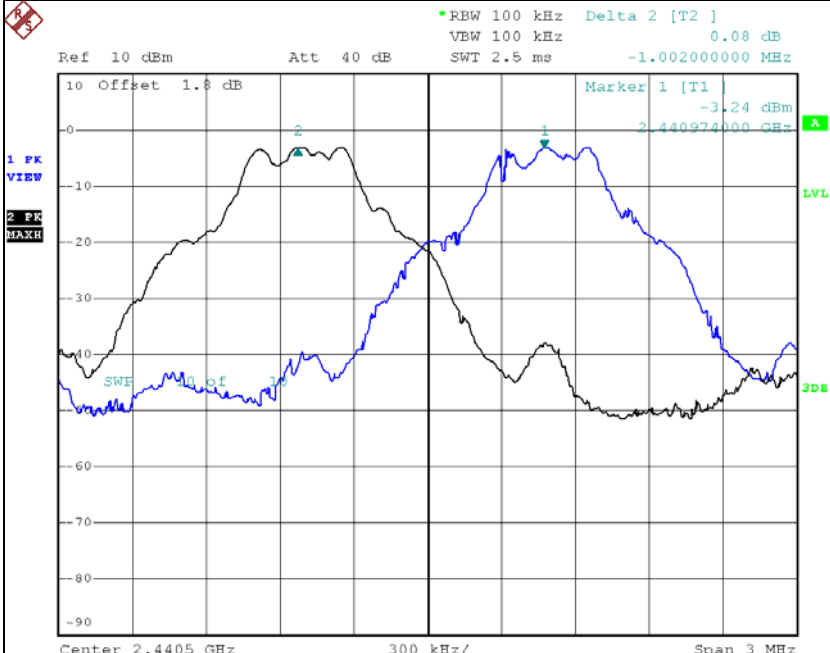
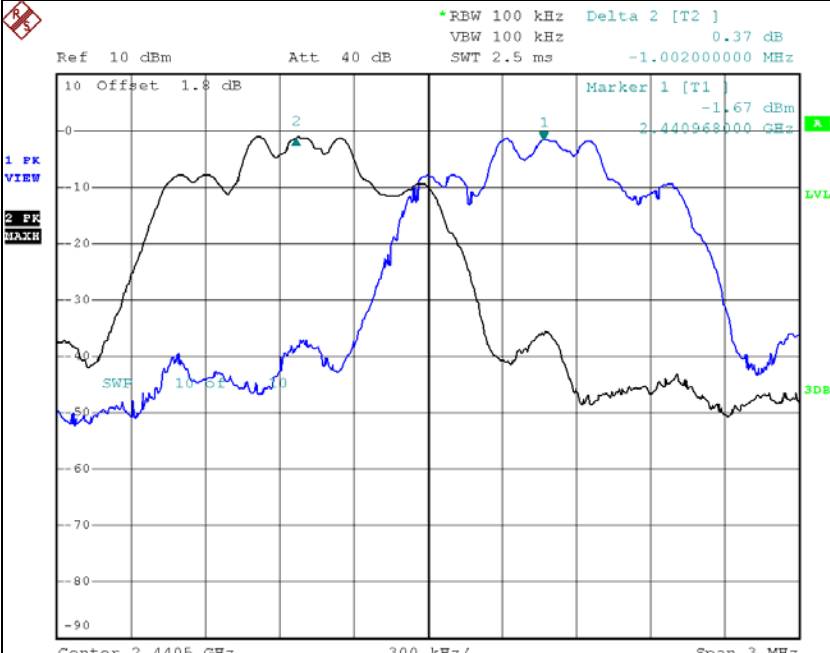
Channel Separation Test Data

| Mode | Channel Separation | Limit |
|-------|--------------------|-------|
| Basic | 1 MHz | N/A |
| EDR | 1 MHz | |

NOTES:

1. Measure conducted channel separation of relevant channel using Spectrum Analyzer.
2. RBW 100kHz, VBW 100kHz, Sweep Time 2.5mS.
3. Compare with two channels.

Plots of Channel Separation

| Mode | Channel Separation |
|-------|---|
| Basic |  <p>Ref 10 dBm Att 40 dB RBW 100 kHz VEW 100 kHz SWT 2.5 ms Delta 2 [T2] 0.08 dB -1.002000000 MHz</p> <p>10 Offset 1.8 dB Marker 1 [T1] -3.24 dBm 2.440974000 GHz</p> <p>Center 2.4405 GHz 300 kHz/ Span 3 MHz</p> <p>Date: 8.NOV.2009 18:48:45</p> |
| EDR |  <p>Ref 10 dBm Att 40 dB RBW 100 kHz VEW 100 kHz SWT 2.5 ms Delta 2 [T2] 0.37 dB -1.002000000 MHz</p> <p>10 Offset 1.8 dB Marker 1 [T1] -1.67 dBm 2.440974000 GHz</p> <p>Center 2.4405 GHz 300 kHz/ Span 3 MHz</p> <p>Date: 8.NOV.2009 18:46:58</p> |

7.3.2 20 dB Bandwidth

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247(a)(1)
RSS-210 Annex 8.1 (a)
Test Date : November 10, 2009
Bluetooth
Operating Condition : The EUT was operated at transmitting condition
continuously during the test.
Environment Condition : 24 °C/ 43 %
Result : Passed

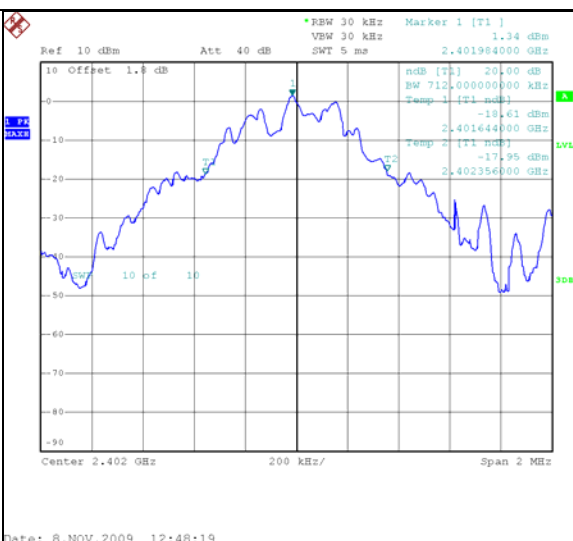
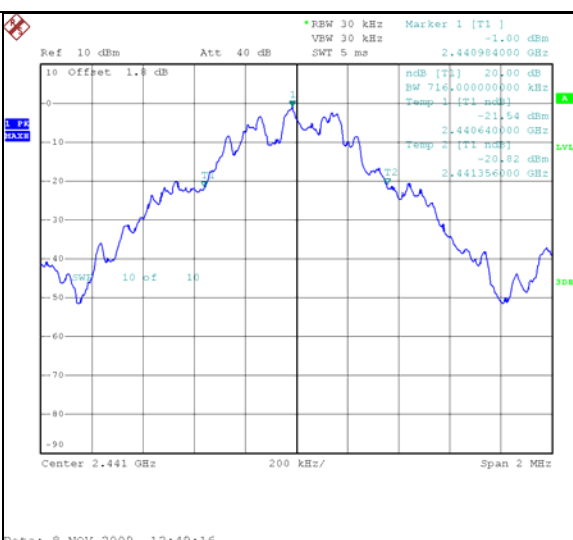
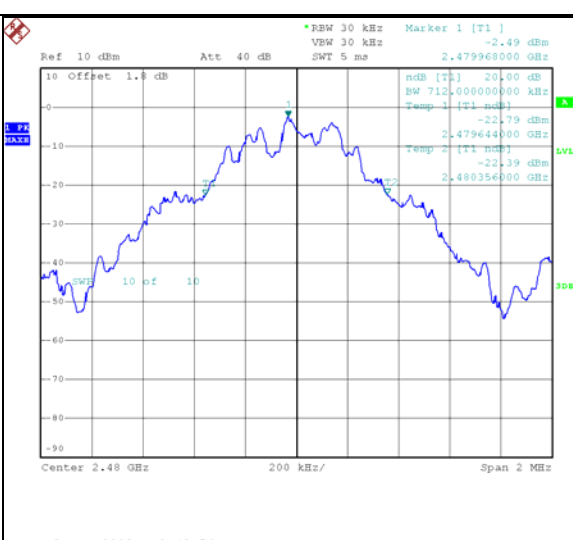
20 dB Bandwidth Test Data

| Frequency (MHz) | 20 dB Bandwidth (kHz) | | Limit |
|-----------------|-----------------------|-------|-------|
| 2402 | Basic (GFSK) | 712 | N/A |
| | EDR (8PSK) | 1 108 | |
| 2441 | Basic (GFSK) | 716 | |
| | EDR (8PSK) | 1 112 | |
| 2480 | Basic (GFSK) | 712 | |
| | EDR (8PSK) | 1 120 | |

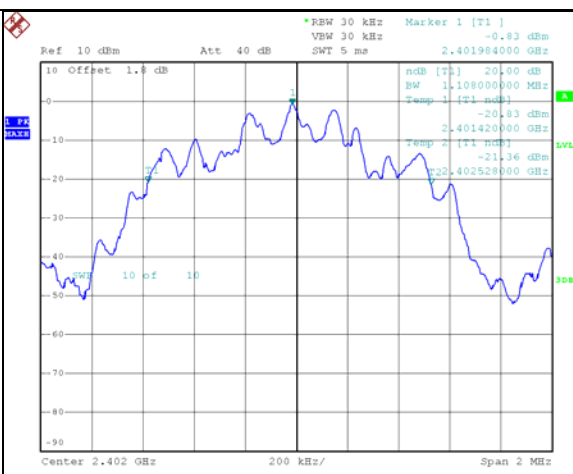
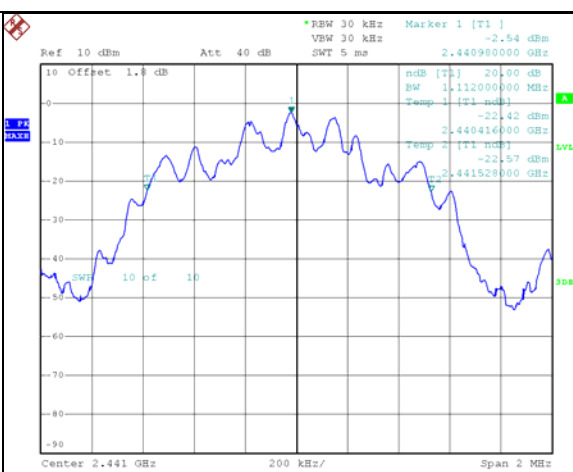
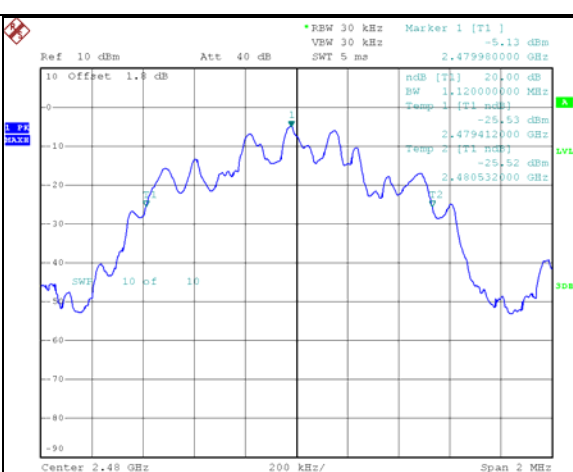
NOTES:

- Measure conducted 20 dB bandwidth of relevant channel using Spectrum Analyzer.
- RBW 30kHz, VBW 30kHz, Sweep Time 50mS.
- 20 dB less than both bandwidth than maximum peak power.

Plots of 20 dB Bandwidth (Basic / GFSK)

| Frequency | 20 dB Bandwidth (Basic / GFSK) | |
|---------------------|---|--|
| 2402 MHz 712 kHz |  <p>Date: 8.NOV.2009 12:48:19</p> | |
| 2441 MHz 716 kHz |  <p>Date: 8.NOV.2009 12:49:16</p> | |
| 2480 MHz 712 kHz |  <p>Date: 8.NOV.2009 12:49:52</p> | |

Plots of 20 dB Bandwidth (EDR / 16PSK)

| Frequency | 20 dB Bandwidth (EDR / 16PSK) | |
|-----------------------|--|--|
| 2402 MHz 1 108 kHz |  <p>Ref 10 dBm Att 40 dB *RBW 30 kHz Marker 1 [T1] VSW 30 kHz SWT 5 ms 2.401984000 GHz -0.83 dBm nB [T1] 20.00 dB BW 1.108000000 MHz Temp 1 [T1-nB] -20.83 dBm 2.401420000 GHz Temp 2 [T1-nB] -21.36 dBm 2.402520000 GHz Center 2.402 GHz 200 kHz/ Span 2 MHz Date: 8.NOV.2009 13:01:45</p> | |
| 2441 MHz 1 112 kHz |  <p>Ref 10 dBm Att 40 dB *RBW 30 kHz Marker 1 [T1] VSW 30 kHz SWT 5 ms 2.440980000 GHz -2.54 dBm nB [T1] 20.00 dB BW 1.112000000 MHz Temp 1 [T1-nB] -22.42 dBm 2.440416000 GHz Temp 2 [T1-nB] -22.57 dBm 2.441520000 GHz Center 2.441 GHz 200 kHz/ Span 2 MHz Date: 8.NOV.2009 13:00:44</p> | |
| 2480 MHz 1 120 kHz |  <p>Ref 10 dBm Att 40 dB *RBW 30 kHz Marker 1 [T1] VSW 30 kHz SWT 5 ms 2.479980000 GHz -5.13 dBm nB [T1] 20.00 dB BW 1.120000000 MHz Temp 1 [T1-nB] -25.53 dBm 2.479412000 GHz Temp 2 [T1-nB] -25.52 dBm 2.480532000 GHz Center 2.48 GHz 200 kHz/ Span 2 MHz Date: 8.NOV.2009 12:59:48</p> | |

7.3.3 Average time of occupancy

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247(a)(1)
RSS-210 Annex 8.1 (d)
Test Date : November 6, 2009
Operating Condition : Bluetooth
The EUT was operated in normal operation.
Environment Condition : 24 °C/ 43 %
Result : Passed

Average time of occupancy Test Data

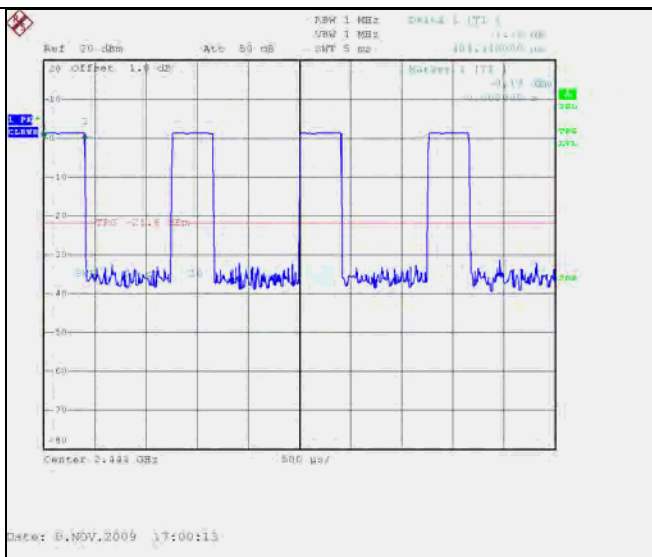
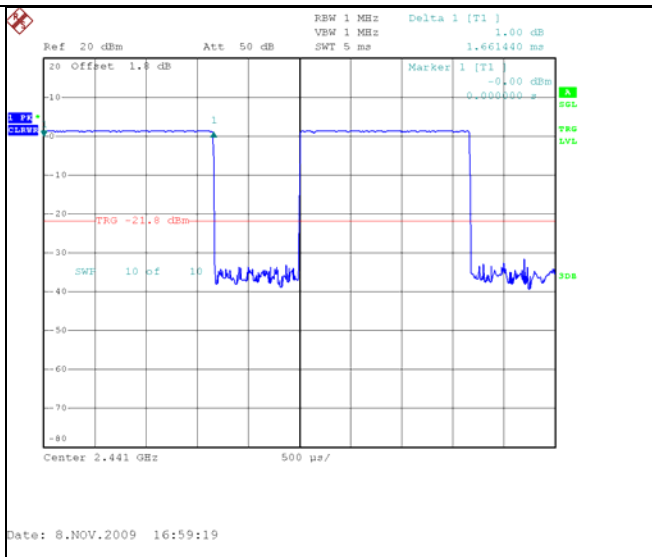
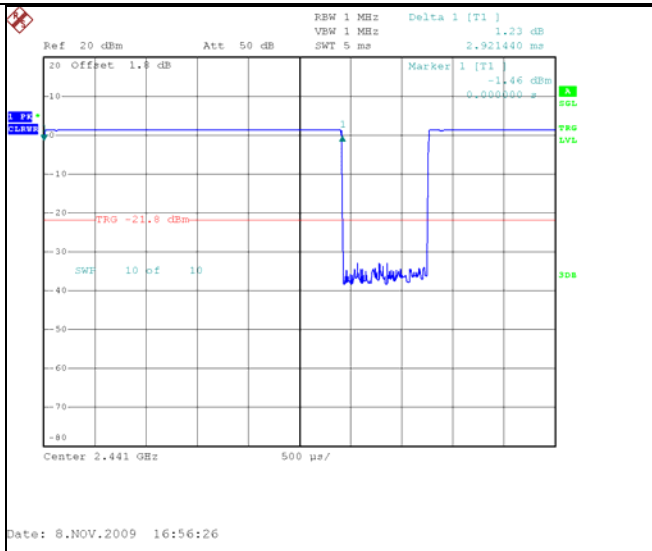
| Mode | Packet Type | Slot | Duration Time | Occupancy Time | Limit |
|--------------|-------------|------|---------------|----------------|--------|
| Basic (GFSK) | DH1 | 1 | 0.401 | 42.77 | 400 ms |
| | DH3 | 3 | 1.661 | 177.17 | |
| | DH5 | 5 | 2.921 | 311.57 | |
| EDR (8PSK) | DH1 | 1 | 0.421 | 44.91 | |
| | DH3 | 3 | 1.671 | 178.24 | |
| | DH5 | 5 | 2.921 | 311.57 | |

NOTES:

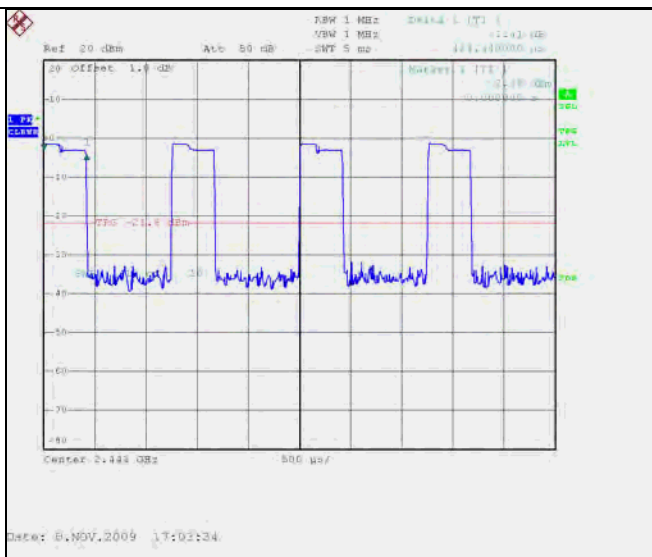
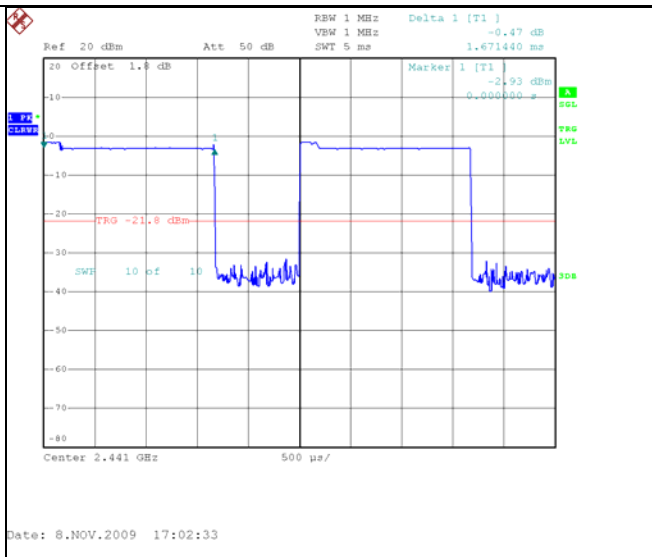
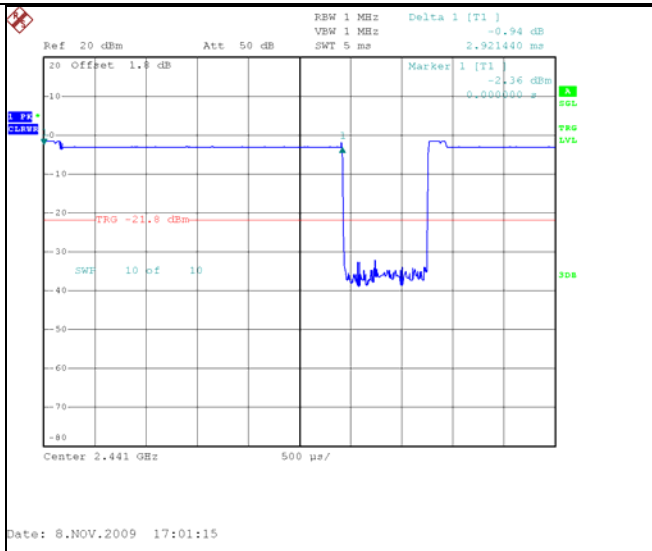
1. According to Section 15.247(a)(1)(iii) the average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.
2. The time period to be observed is "0.4 s x 79 = 31.6 seconds".
3. According to the Bluetooth specification the system transmits at a rate of 1600 hops per second. For DH5 packet five time slot is used for TX and one time slot for RX.
4. That means a total of (1600 / 6) transmissions occurs in one second. The average time of occupancy is calculated as following:

$$[(1600 / 6) \times 2.926 \text{ ms}] \times (0.4 \times 79) / 79 = 312.11 \text{ ms}$$

Plots of Duration Time (Basic / GFSK)

| Frequency | Duration (Basic / GFSK) | |
|-----------------------------------|---|--|
| DH1 0.401 ms |  <p>Ref 20 dBm Att 50 dB RBW 1 MHz Delta 1 [T1] 1.23 dB VSW 1 MHz SWT 5 ms Marker 1 [T1] -21.8 dBm 0.000000 s Center 2.442 GHz 500 ps Date: 8.NOV.2009 17:00:13</p> | |
| DH3 1.661 ms |  <p>Ref 20 dBm Att 50 dB RBW 1 MHz Delta 1 [T1] 1.00 dB VSW 1 MHz SWT 5 ms Marker 1 [T1] -21.8 dBm 0.000000 s Center 2.441 GHz 500 ps Date: 8.NOV.2009 16:59:19</p> | |
| DH5 2.821 ms |  <p>Ref 20 dBm Att 50 dB RBW 1 MHz Delta 1 [T1] 1.23 dB VSW 1 MHz SWT 5 ms Marker 1 [T1] -21.8 dBm 0.000000 s Center 2.441 GHz 500 ps Date: 8.NOV.2009 16:56:26</p> | |

Plots of Duration Time (EDR / 16PSK)

| Frequency | Duration (EDR / 16PSK) | |
|-----------------------------------|--|--|
| DH1 0.421 ms |  <p>Ref 20 dBm Att 50 dB RBW 1 MHz Delta 1 [T1] -0.47 dB VSW 1 MHz SWT 5 ms Marker 1 [T1] -2.93 dBm 0.000000 s TRG -21.8 dBm SWF 10 of 10 Center 2.441 GHz 500 kHz Date: 8.NOV.2009 17:02:34</p> | |
| DH3 1.671 ms |  <p>Ref 20 dBm Att 50 dB RBW 1 MHz Delta 1 [T1] -0.47 dB VSW 1 MHz SWT 5 ms Marker 1 [T1] -2.93 dBm 0.000000 s TRG -21.8 dBm SWF 10 of 10 Center 2.441 GHz 500 kHz Date: 8.NOV.2009 17:02:33</p> | |
| DH5 2.921 ms |  <p>Ref 20 dBm Att 50 dB RBW 1 MHz Delta 1 [T1] -0.94 dB VSW 1 MHz SWT 5 ms Marker 1 [T1] -2.93 dBm 0.000000 s TRG -21.8 dBm SWF 10 of 10 Center 2.441 GHz 500 kHz Date: 8.NOV.2009 17:01:15</p> | |

7.3.4 Maximum Peak Output Power

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247(b)(1)
RSS-210 Annex 8.4 (2)
Test Date : November 10, 2009
Bluetooth
Operating Condition : The EUT was operated at transmitting condition
continuously during the test.
Environment Condition : 24 °C/ 43 %
Result : Passed

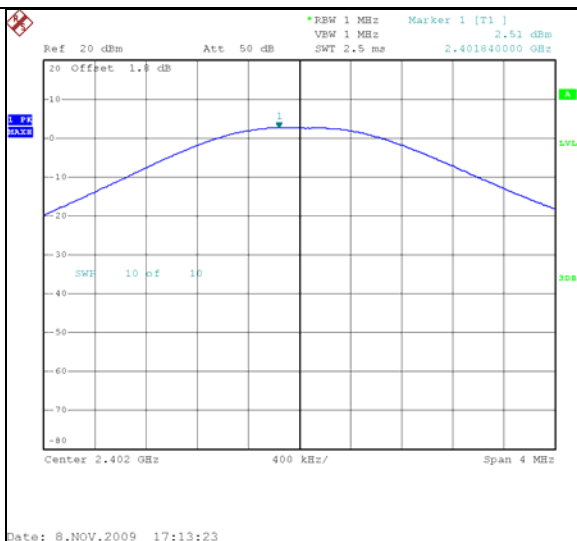
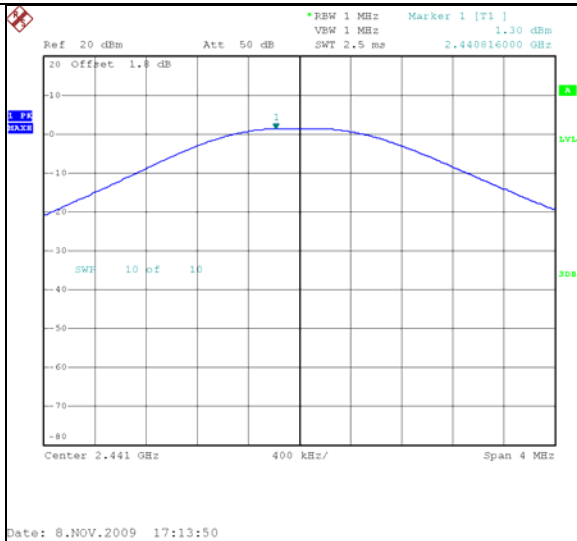
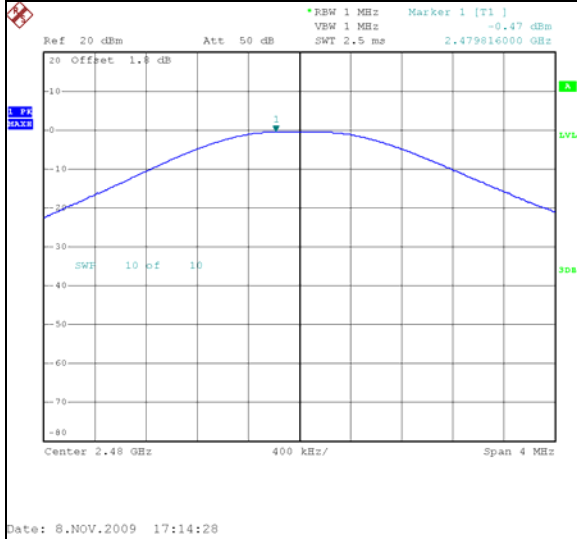
Maximum Peak Output Power Test Data

| Frequency (MHz) | Maximum Peak Output Power (dBm) | Limit |
|-----------------|---------------------------------|------------------|
| 2402 | 2.51 | Less than 125 mW |
| 2440 | 1.30 | |
| 2480 | -0.47 | |

NOTES:

1. Measure conducted Maximum Peak Output of relevant channel using Spectrum analyzer.

Plots of Maximum Peak Output Power

| Frequency | Maximum Peak Output Power | |
|-----------------------|--|--|
| 2402 MHz 2.51 dBm |  <p>Ref 20 dBm Att 50 dB *RBW 1 MHz Marker 1 [T1] VSW 1 MHz 2.51 dBm SWT 2.5 ms 2.40184000 GHz</p> <p>20 Offset 1.8 dB</p> <p>SWR 10 of 10</p> <p>Center 2.402 GHz 400 kHz/ Span 4 MHz</p> <p>Date: 8.NOV.2009 17:13:23</p> | |
| 2441 MHz 1.30 dBm |  <p>Ref 20 dBm Att 50 dB *RBW 1 MHz Marker 1 [T1] VSW 1 MHz 1.30 dBm SWT 2.5 ms 2.440616000 GHz</p> <p>20 Offset 1.8 dB</p> <p>SWR 10 of 10</p> <p>Center 2.441 GHz 400 kHz/ Span 4 MHz</p> <p>Date: 8.NOV.2009 17:13:50</p> | |
| 2480 MHz -0.47 dBm |  <p>Ref 20 dBm Att 50 dB *RBW 1 MHz Marker 1 [T1] VSW 1 MHz -0.47 dBm SWT 2.5 ms 2.479816000 GHz</p> <p>20 Offset 1.8 dB</p> <p>SWR 10 of 10</p> <p>Center 2.48 GHz 400 kHz/ Span 4 MHz</p> <p>Date: 8.NOV.2009 17:14:28</p> | |

7.3.5 Conducted Emission & 100 kHz Bandwidth of Frequency Band Edges

| | | |
|-----------------------|---|--|
| EUT | : | mbook bz |
| Test Standard | : | FCC Part15 Subpart C Section 15.247(c) RSS-210 Annex 8.5 |
| Test Date | : | November 6, 2009 |
| Operating Condition | : | Bluetooth The EUT was operated at transmitting condition continuously during the test. |
| Environment Condition | : | 24 °C/ 43 % |
| Result | : | Passed |

7.3.4.1 Conducted Emission Test

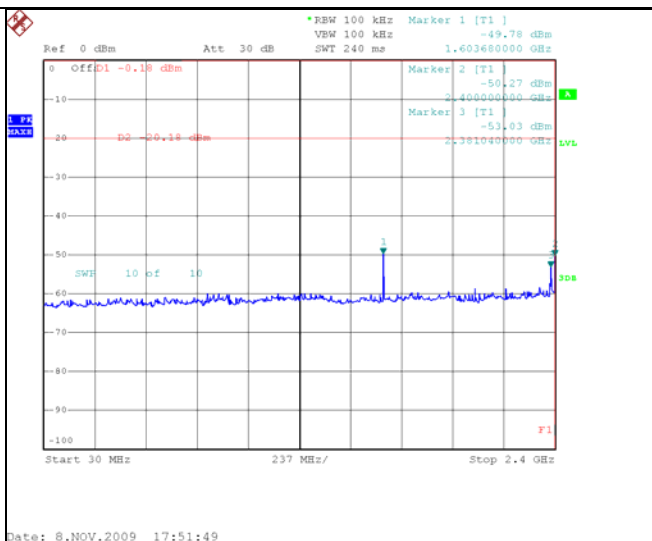
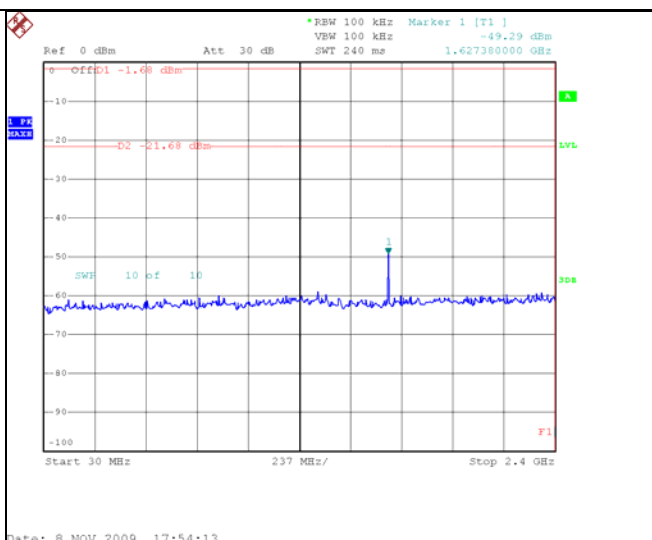
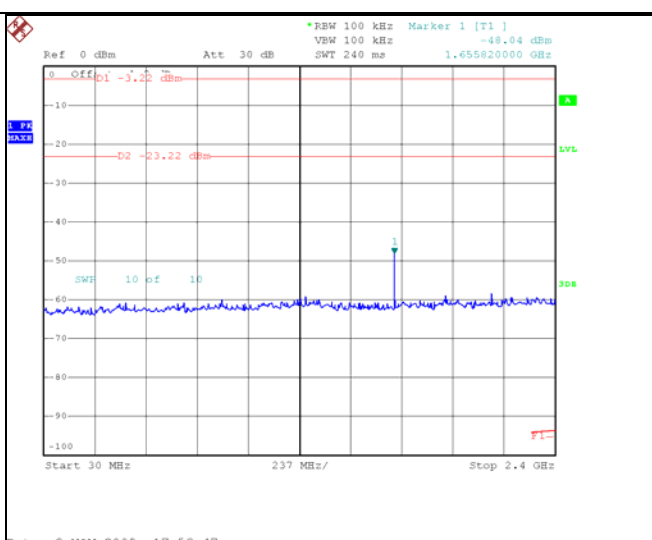
Result : Please refer to the attached Plots for details :

7.3.4.2 100 kHz Bandwidth of Frequency Band Edges

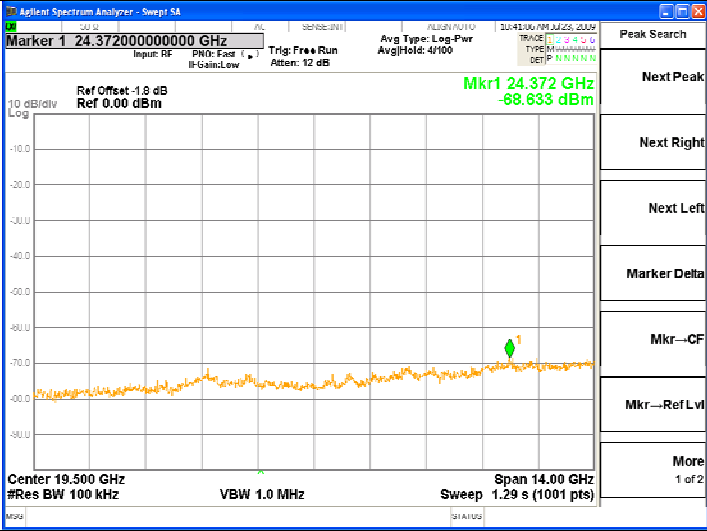
The test was performed to make a direct field strength measurement at the bandedge frequencies. Radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209. There is a restricted band starting at 2483.5 MHz and another restricted band from 2310 - 2390 MHz.

All emissions below noise floor of 7 dBuV/m.

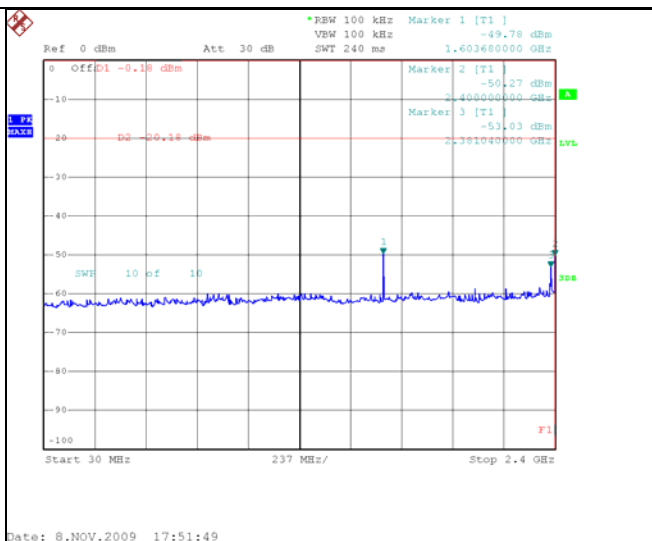
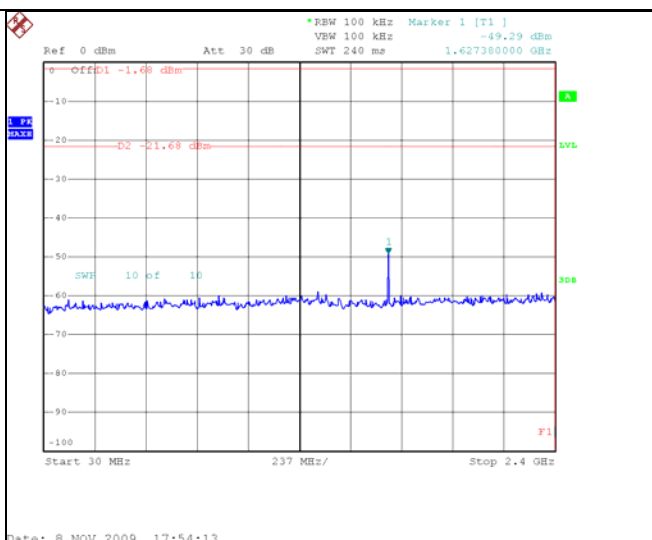
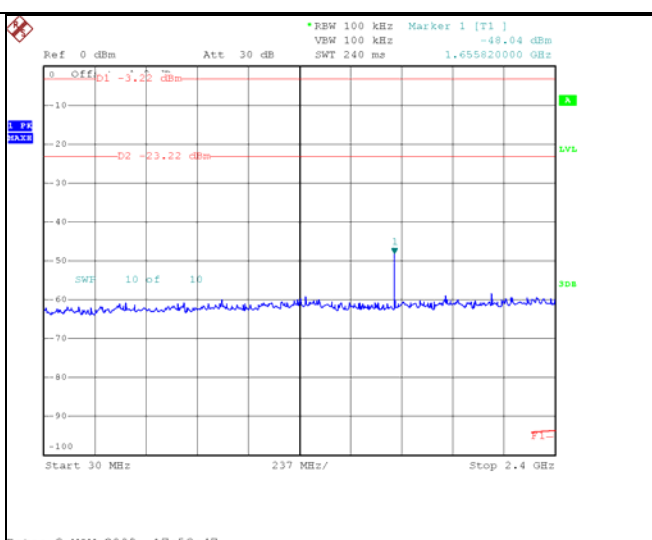
Plots of Conducted Emission(Basic / GFSK)

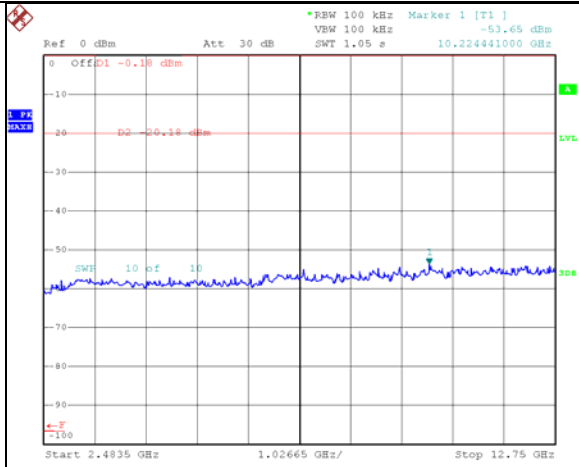
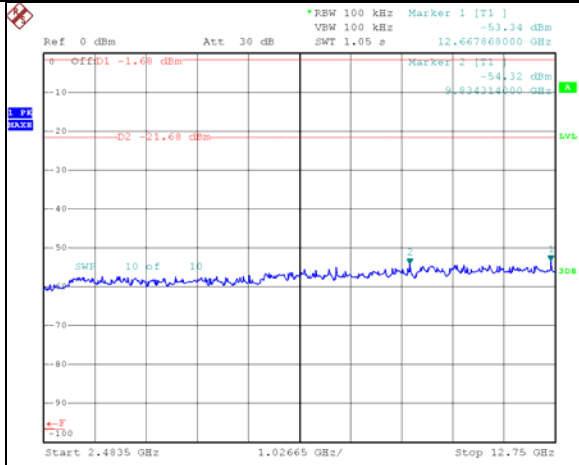
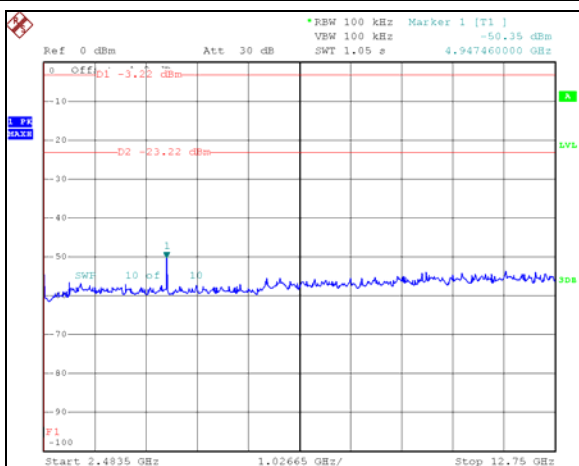
| Frequency | 30 MHz ~ 2400 MHz | |
|---------------------|---|--|
| 2402 MHz « 20dBc |  <p>Date: 8.NOV.2009 17:51:49</p> | |
| 2441 MHz « 20dBc |  <p>Date: 8.NOV.2009 17:54:13</p> | |
| 2480 MHz « 20dBc |  <p>Date: 8.NOV.2009 17:58:47</p> | |

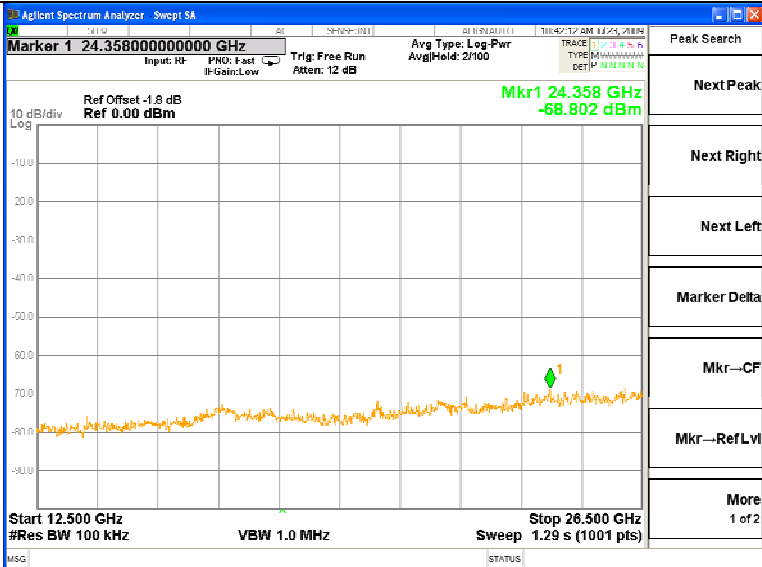
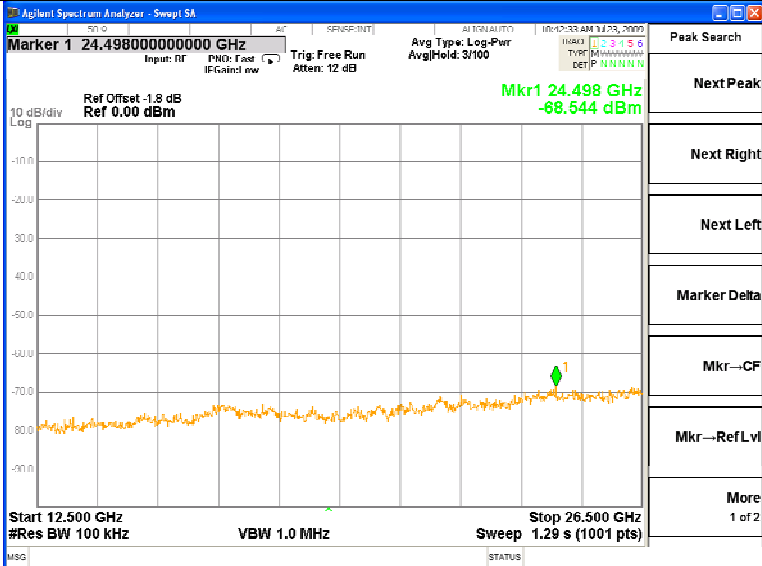
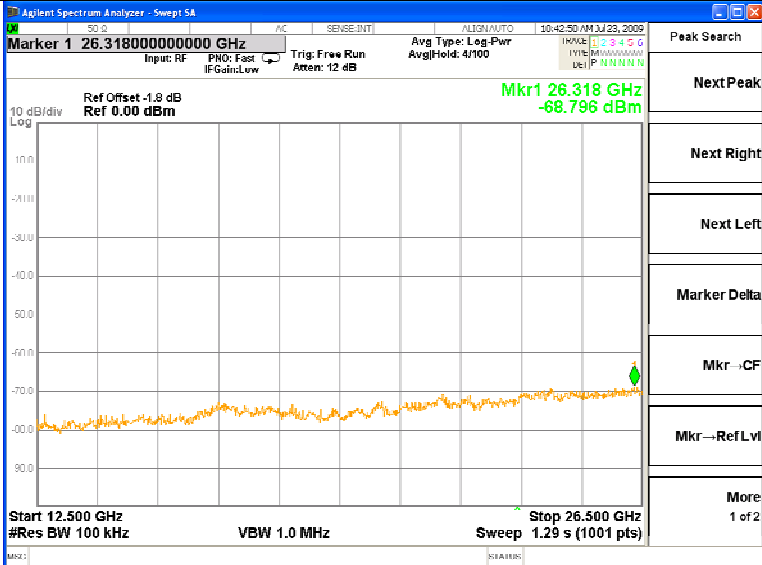
Report No: BWS-09-RF-0011
BWS TECH Inc.

| Frequency | 12.75 GHz ~ 26.5 GHz |
|---------------------|--|
| 2412 MHz « 20dBc |  |
| 2442 MHz « 20dBc |  |
| 2472 MHz « 20dBc |  |

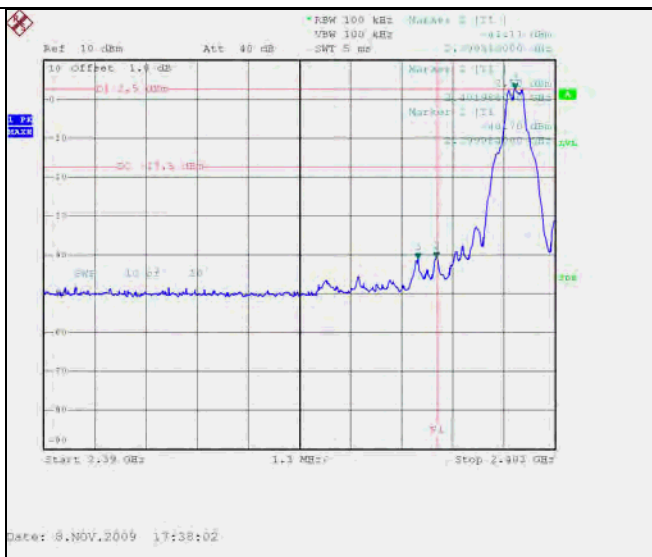
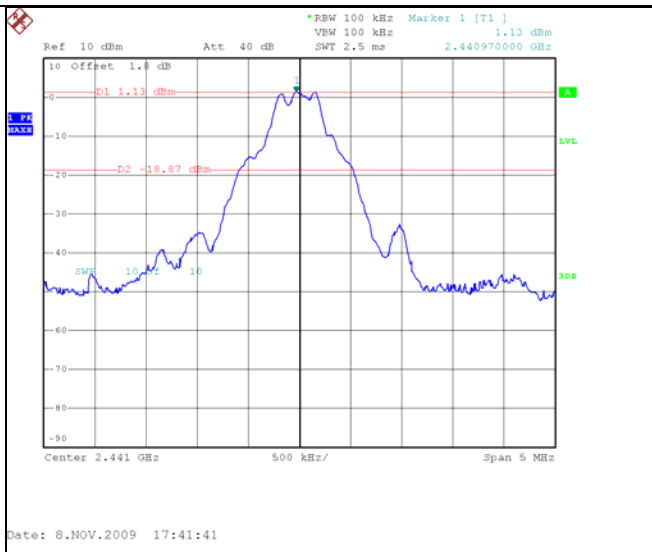
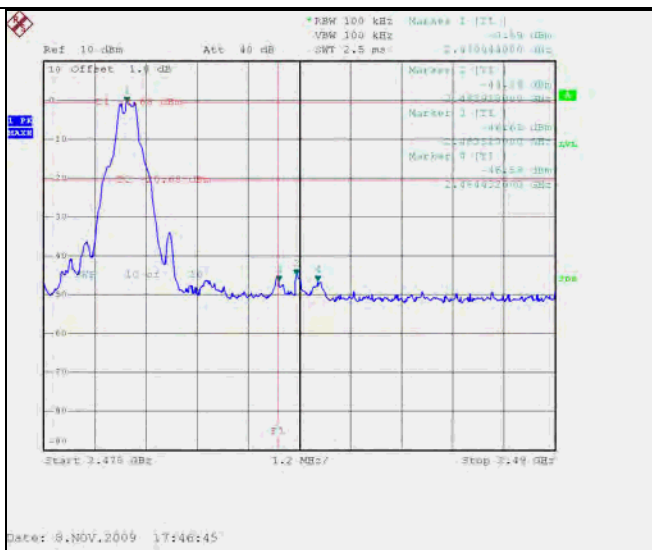
Plots of Conducted Emission(EDR / 16PSK)

| Frequency | 30 MHz ~ 2400 MHz | |
|---------------------|--|--|
| 2402 MHz « 20dBc |  | |
| 2441 MHz « 20dBc |  | |
| 2480 MHz « 20dBc |  | |

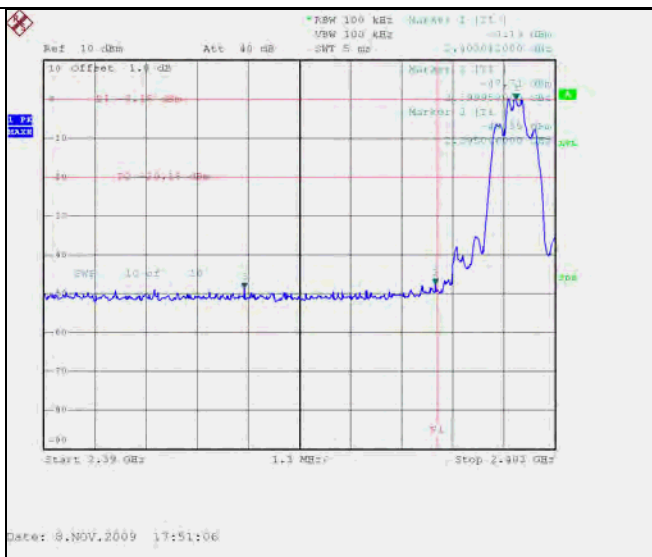
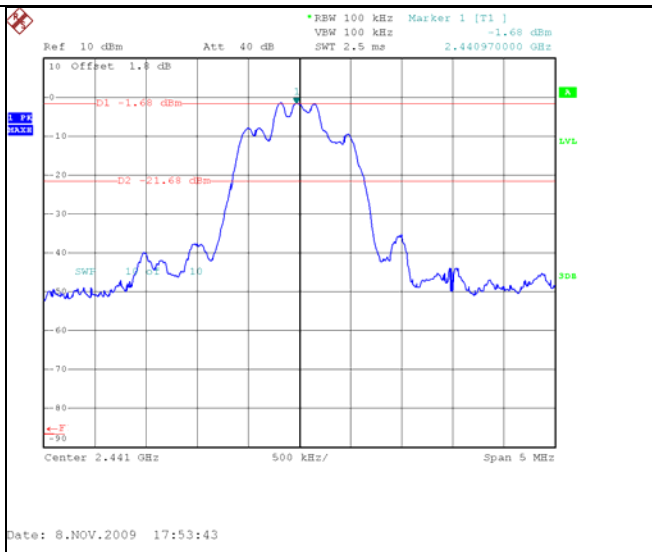
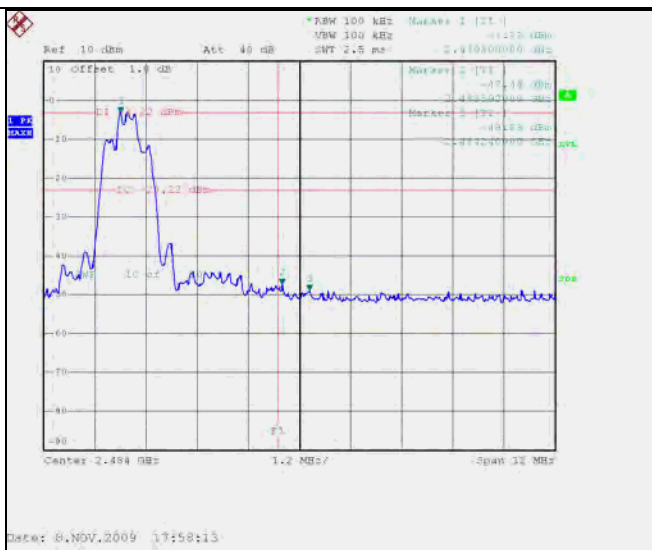
| Frequency | 2483.5 MHz ~ 12.75 GHz | |
|--------------------------------|---|--|
| <p>2402 MHz</p> <p>« 20dBc</p> |  <p>Ref 0 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -53.65 dBm VSW 100 kHz 10.22441000 GHz SWT 1.05 s</p> <p>Off D1 -0.18 dBm D2 -20.18 dBm SWR 10 pf 10 Start 2.4835 GHz 1.02665 GHz/ Stop 12.75 GHz</p> <p>Date: 8.NOV.2009 17:52:37</p> | |
| <p>2441 MHz</p> <p>« 20dBc</p> |  <p>Ref 0 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -53.34 dBm VSW 100 kHz 12.667868000 GHz SWT 1.05 s</p> <p>Off D1 -1.08 dBm D2 -21.68 dBm SWR 10 pf 10 Start 2.4835 GHz 1.02665 GHz/ Stop 12.75 GHz</p> <p>Date: 8.NOV.2009 17:55:03</p> | |
| <p>2480 MHz</p> <p>« 20dBc</p> |  <p>Ref 0 dBm Att 30 dB *RBW 100 kHz Marker 1 [T1] -50.35 dBm VSW 100 kHz 4.947460000 GHz SWT 1.05 s</p> <p>Off D1 -3.20 dBm D2 -23.22 dBm SWR 10 pf 10 Start 2.4835 GHz 1.02665 GHz/ Stop 12.75 GHz</p> <p>Date: 8.NOV.2009 17:59:36</p> | |

| Frequency | 12.75 GHz ~ 26.5 GHz |
|---------------------|---|
| 2412 MHz « 20dBc |  <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Marker 1 24.358000000000 GHz</p> <p>Input: RF PNO: Fast IF Gain: Low Trig: Free Run Att: 12 dB</p> <p>Ref Offset -1.8 dB Ref 0.00 dBm</p> <p>Mkr1 24.358 GHz -68.802 dBm</p> <p>Start 12.500 GHz #Res BW 100 kHz VBW 1.0 MHz Stop 26.500 GHz Sweep 1.29 s (1001 pts)</p> <p>MSG STATUS</p> <p>Peak Search</p> <p>Next Peak</p> <p>Next Right</p> <p>Next Left</p> <p>Marker Delta</p> <p>Mkr--CF</p> <p>Mkr--Ref Lvl</p> <p>More 1 of 2</p> |
| 2442 MHz « 20dBc |  <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Marker 1 24.498000000000 GHz</p> <p>Input: RF PNO: Fast IF Gain: Low Trig: Free Run Att: 12 dB</p> <p>Ref Offset -1.8 dB Ref 0.00 dBm</p> <p>Mkr1 24.498 GHz -68.544 dBm</p> <p>Start 12.500 GHz #Res BW 100 kHz VBW 1.0 MHz Stop 26.500 GHz Sweep 1.29 s (1001 pts)</p> <p>MSG STATUS</p> <p>Peak Search</p> <p>Next Peak</p> <p>Next Right</p> <p>Next Left</p> <p>Marker Delta</p> <p>Mkr--CF</p> <p>Mkr--Ref Lvl</p> <p>More 1 of 2</p> |
| 2472 MHz « 20dBc |  <p>Agilent Spectrum Analyzer - Sweep SA</p> <p>Marker 1 26.318000000000 GHz</p> <p>Input: RF PNO: Fast IF Gain: Low Trig: Free Run Att: 12 dB</p> <p>Ref Offset -1.8 dB Ref 0.00 dBm</p> <p>Mkr1 26.318 GHz -68.796 dBm</p> <p>Start 12.500 GHz #Res BW 100 kHz VBW 1.0 MHz Stop 26.500 GHz Sweep 1.29 s (1001 pts)</p> <p>MSG STATUS</p> <p>Peak Search</p> <p>Next Peak</p> <p>Next Right</p> <p>Next Left</p> <p>Marker Delta</p> <p>Mkr--CF</p> <p>Mkr--Ref Lvl</p> <p>More 1 of 2</p> |

Plots of 100 kHz Bandwidth of Frequency Band Edges(Basic / GFSK)

| Frequency | 100 kHz Bandwidth of Frequency Band Edges | |
|---------------------|---|--|
| 2402 MHz « 20dBc |  <p>Date: 8.NOV.2009 17:38:02</p> | |
| 2441 MHz N/A |  <p>Date: 8.NOV.2009 17:41:41</p> | |
| 2480 MHz « 20dBc |  <p>Date: 8.NOV.2009 17:46:45</p> | |

Plots of 100 kHz Bandwidth of Frequency Band Edges(EDR / 16PSK)

| Frequency | 100 kHz Bandwidth of Frequency Band Edges | |
|---------------------|---|--|
| 2402 MHz « 20dBc |  <p>Ref 10 dBm Att 40 dB *RBW 100 kHz Marker 1 [T1] -1.18 dBm Offset 1.8 dB VSW 100 kHz SWF 5 ms 2.40200000 GHz Start 2.39 GHz 1.3 MHz Stop 2.403 GHz Date: 8.NOV.2009 17:51:06</p> | |
| 2441 MHz N/A |  <p>Ref 10 dBm Att 40 dB *RBW 100 kHz Marker 1 [T1] -1.68 dBm Offset 1.8 dB VSW 100 kHz SWF 2.5 ms 2.44097000 GHz Center 2.441 GHz 500 kHz Span 5 MHz Date: 8.NOV.2009 17:53:43</p> | |
| 2480 MHz « 20dBc |  <p>Ref 10 dBm Att 40 dB *RBW 100 kHz Marker 1 [T1] -1.18 dBm Offset 1.8 dB VSW 100 kHz SWF 2.5 ms 2.48000000 GHz Center 2.480 GHz 1.2 MHz Span 1.2 MHz Date: 8.NOV.2009 17:58:13</p> | |

7.3.6 Radiated Emission

EUT : mbook bz
Test Standard : FCC Part15 Subpart C Section 15.247©, 15.209
RSS-210 Annex 8.5
Test Date : November 07, 2009
Bluetooth
Operating Condition : The EUT was operated at transmitting condition continuously during the test.
Environment Condition : 19 °C/ 36 %
Result : Passed

Radiated Emission Test Data(below 1 GHz)

| Frequency [MHz] | Reading [dB μ V] | Polarization [*H/**V] | Ant.Factor [dB/m] | Cable Loss [dB] | Limit [dB μ V/m] | Emission Level [dB μ V/m] | Margin [dB] |
|-----------------|----------------------|-----------------------|-------------------|-----------------|----------------------|-------------------------------|-------------|
| 70.38 | 18.45 | V | 10.51 | 1.84 | 40.00 | 30.80 | 9.20 |
| 101.88 | 16.14 | H | 12.31 | 1.42 | 43.50 | 29.87 | 13.63 |
| 172.02 | 20.08 | H | 12.61 | 2.91 | 43.50 | 35.60 | 7.90 |
| 245.77 | 20.05 | H | 11.59 | 3.48 | 46.00 | 35.12 | 10.88 |
| 489.97 | 14.85 | V | 17.53 | 5.03 | 46.00 | 37.40 | 8.60 |
| 533.13 | 17.34 | V | 18.30 | 5.26 | 46.00 | 40.90 | 5.10 |
| 599.86 | 17.38 | H | 19.89 | 5.58 | 46.00 | 42.85 | 3.15 |

Radiated Emission Test Data (above 1 GHz)

| Frequency [MHz] | Reading [dB μ V] | Pre-Amp Gain [dB] | Ant.Factor [dB/m] | Cable Loss [dB] | Limit [dB μ V/m] | Emission Level [dB μ V/m] | Margin [dB] |
|---------------------------|----------------------|-------------------|-------------------|-----------------|----------------------|-------------------------------|-------------|
| Low Channel (2402 MHz) | | | | | | | |
| 4804.00 | 33.15 | 30.00 | 31.71 | 13.01 | 53.98 | 47.87 | 6.11 |
| | | | | | | | |
| | | | | | | | |
| Middle Channel (2441 MHz) | | | | | | | |
| 4882.00 | 33.76 | 30.00 | 31.71 | 13.01 | 53.98 | 48.48 | 5.50 |
| | | | | | | | |
| | | | | | | | |
| High Channel (2480 MHz) | | | | | | | |
| 5007.00 | 35.48 | 30.00 | 31.71 | 13.02 | 53.98 | 50.21 | 3.77 |
| | | | | | | | |
| | | | | | | | |

Radiated Restricted Band Edge Test Data

| Frequency [MHz] | Reading [dBuV] | Pre-Amp Gain[dB] | Ant Factor [dB/m] | Cable Loss [dB] | Limit [dBuV/m] | Emission Level [dBuV/m] | Margin [dB] | Detect |
|-----------------------|----------------|------------------|-------------------|-----------------|----------------|-------------------------|-------------|--------|
| Low Channel(2412MHz) | | | | | | | | |
| 2355.64 | 33.85 | 30.00 | 26.29 | 11.12 | 74 | 41.3 | 32.7 | PK |
| 2355.64 | 22.14 | 30.00 | 26.29 | 11.12 | 54 | 29.57 | 24.43 | AV |
| 2342.50 | 34.20 | 30.00 | 26.29 | 11.12 | 74 | 41.6 | 32.4 | PK |
| 2342.50 | 22.49 | 30.00 | 26.29 | 11.12 | 54 | 29.92 | 24.08 | AV |
| High Channel(2472MHz) | | | | | | | | |
| 2493.52 | 34.98 | 30.00 | 26.29 | 11.14 | 74 | 42.42 | 31.58 | PK |
| 2493.52 | 23.87 | 30.00 | 26.29 | 11.14 | 54 | 31.29 | 22.71 | AV |
| 2490.26 | 34.15 | 30.00 | 26.29 | 11.14 | 74 | 41.55 | 32.45 | PK |
| 2490.26 | 23.82 | 30.00 | 26.29 | 11.14 | 54 | 31.28 | 22.72 | AV |

NOTES:

1. All modes of operation were investigated and the worst-case emissions are reported.
2. This test being a result which used RF amplifier.
3. AF = Antenna Factor CL = Cable Loss F/S = Field Strength
4. POL H = Horizontal POL V = Vertical

7.3.7 Minimum Hopping Channels

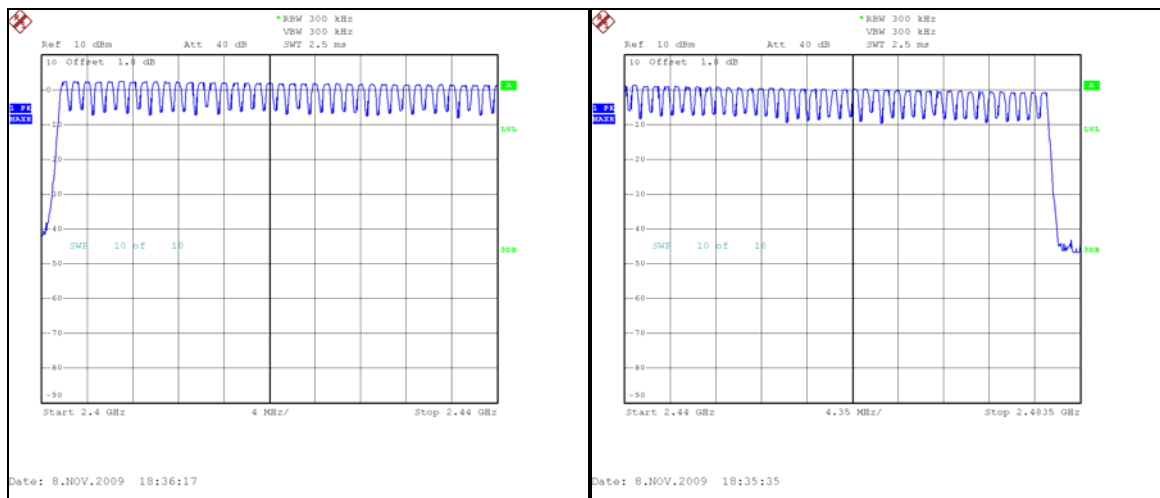
Test Standard : FCC Part15 Subpart C Section 15.247(a)(1)
RSS-210 Annex 8.4 (2)
Operating Condition : The EUT was operated at transmitting condition continuously during the test.
Temperature/Humidity : 22.0 °C/ 41 %

Minimum Hopping Channels Test Data

| Number of hopping channels | Limit |
|----------------------------|-----------------------|
| 79 | More than 15 channels |

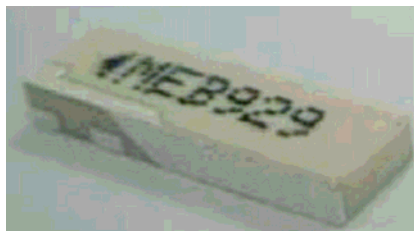
NOTES:

1. Minimum Hopping Channels using Spectrum Analyzer.
2. With the analyzer set to MAX HOLD readings were taken for 1 ~ 2 minutes in each band.



7.3.8 Antenna Requirement

| | |
|------------------------------|--------------------------------|
| Products | Dielectric Chip Antenna |
| Manufacturer | Patron |
| Model | ACS2450ICAMEB |
| Frequency Range [MHz] | 2400~2485 |
| Polarization | Linear |
| Max Gain | -0.9 dBi |



Structure

8. TEST EQUIPMENTS LIST

The listing below denotes the test equipments utilized for the test(s).

| | EQUIPMENT | MODEL | MANUFACTURE | SERIAL NUMBER | Calibration Due date |
|----|-----------------------------------|--------------------------|-----------------|-----------------|----------------------|
| 1 | Test Receiver | ESPI | Rohde & Schwarz | 10012 | 10/10/30 |
| 2 | Spectrum analyzer | FSP13SE | Rohde & Schwarz | 15892 | 10/07/07 |
| 3 | Spectrum analyzer | N9020A | Agilent | US46220101 | 10/09/30 |
| 4 | Signal Generator | GT9000 | Gigatronics | 9604010 | 10/10/30 |
| 5 | Frequency Counter | R5372 | Advantest | 41855204 | 10/10/29 |
| 6 | Shield Room (7m x 4m x 3m) | N/A | SJEMC | 0004 | N/A |
| 7 | Turn Table | OSC-30 | N/A | BWS-01 | N/A |
| 8 | Antenna Mast | JAC-3 | Dail EMC | N/A | N/A |
| 9 | Temperature & Humidity chanber | EN-GLMP-54 | Enex | N/A | 10/10/30 |
| 10 | Bilog Antenna | VULB9160 | Schwarzbeck | VULB9160-3122 | 10/01/24 |
| 11 | Bilog Antenna | VULB9161 | Schwarzbeck | VULB9161-4067 | 09/11/19 |
| 12 | Bilog Antenna | VULB9161 | Schwarzbeck | VULB9161-4068 | 09/12/11 |
| 13 | Horn Antenna | BBHA 9120 D | Schwarzbeck | BBHA 9120 D 234 | 11/03/16 |
| 14 | Horn Antenna | BBHA 9170 | Schwarzbeck | BBHA9170157 | 10/03/15 |
| 15 | Power Meter | E4418A | Agilent | GB38272621 | 10/10/29 |
| 16 | Power Sensor | E9301B | Agilent | US40010238 | 10/10/29 |
| 17 | Power supply | IPS-30B03DD | Interact | 42052 | 10/10/29 |
| 18 | Bandreject filter | 3TNF-800/1000-0.2 N/N | K&L Microwave | 441 | 10/02/06 |
| 19 | RF Amplifier | 8447E | HP | 2945A02712 | 10/10/30 |
| 20 | LISN | L1-115 | Com-Power | 241018 | 10/01/20 |
| 21 | EMI Receiver | ESVN30 | Rohde & Schwarz | 832854/010 | 10/07/25 |
| 22 | Open Site Cable | N/A | N/A | N/A | N/A |
| 23 | Antenna Turntable Controller | JAC-2 | JAEMC | N/A | N/A |