



October 27, 2008

Supplement to EMC test report (Exhibit 6A3) for Motorola portable cellular phone (FCC ID: IHDP56JL1)

Reference:

Correspondence Reference Number: IHD80691A

Confirmation Number: 807310691-94

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## WLAN Band edge

Follow-up information for listed question number 1:

- 1: Thank you for your reply. Regarding your response to question #8, please note that providing a measurement example from a different device is not acceptable. The test report must demonstrate clear compliance of the EUT. The response states, in part, that, " [t]he CFR47 part 15.35(b) rule clearly specify a 20 dB difference in acceptance levels when either the average or peak detector is used for the measurement. In the above case we used the peak detector in conjunction with the CFR47 part 15.35(b) rule for use of peak detector. In that respect the measurement shows a PASS." The pertinence of this statement to the question is unclear. The FCC Rules provide both a peak and an average field strength limit for Part 15 devices. While the plots provided demonstrate compliance with the peak limit, there is no data that demonstrates compliance with the average limit, your internal lab rules notwithstanding. Reference is made to the marker-delta method, and, while a demonstration of compliance by using this method is assured in the response, there is no actual measurement data, from the EUT, to back up this claim. Please provide measurement data that demonstrates compliance of the radiated emissions in the upper bandedge restricted band with the average field strength limits.

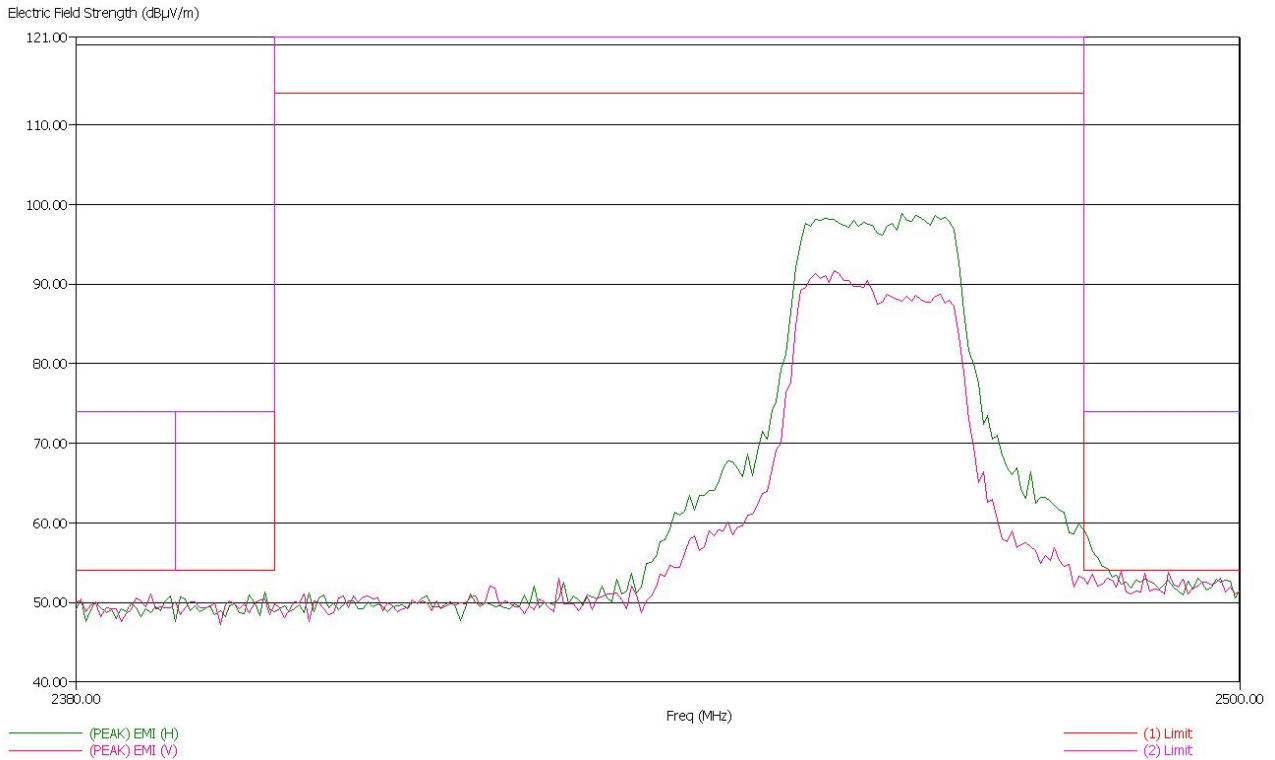
Taken from the test report:



Title: FCC 15.249  
 File: Napoleon 22140-2 (5.31) (ESU) FCC15.249 WLAN 2400(g) Tch-hgh\_X 2008-07-31 -3.set  
 Operator: ADR\_AAL EMC\_TL1, hkr001  
 EUT Type: Napoleon, FCC ID: IHDT56JL1. pESN: 80C56D5D  
 EUT Condition: Board Rev: P3.1  
 Comments: FCC 15.249/ IEEE 802.11(g) WLAN emission in TCH mode  
 WLAN ch-11 (2462 MHz) TX mode @ 9Mbps/19dBm. Or.=X  
 HLP 3003C antenna (30MHz - 3 GHz). Peak detector used.  
 Receiver attenuation int. -10dB from 1GHz to 3GHz.

04-08-2008 14:30:33  
 Sequence: Preliminary Scan

Graph (30 MHz-3 GHz) - BE



**Authorized Band Emissions High Channel Dual Polarization X**

The high band edge measurement performed with the peak detector and RBW=1 MHz do cross the high band edge average limit line at 54 dBµV/m in the restricted band.

The cross over is measured with peak detector and the peak detector limit line is also indicated in the graph at 74 dBµV/m. The measured band edge performance has in worst case 14 dB margin with respect to the peak limit line when measured with the peak detector.

**Marker-Delta Method**

The WLAN band (g) channel band edge performance is further evaluated using the Marker-Delta Method described in FCC guideline DA 00-705.

The in-band field strength was measured as described in DA 00-705 Step-1 using and RBW=1MHz (6 dB) – Peak and/or Average detector.



Title: FCC 15.249 23-10-2008 09:48:19  
 File: Napoleon 22140-2 (5.31)(ESU) FCC15.249 WLAN 2400(g) Tch-hgh\_X 2008-10-23 -PK CarrSequence: Final Measurements  
 Operator: ADR AAL EMC TL1. hkr001  
 EUT Type: Napoleon. FCC ID: IHDT56JL1. pESN: 80C56D5D  
 EUT Condition: Board Rev: P3.1  
 Comments: FCC 15.249/ IEEE 802.11(a) WLAN emission in TCH mode  
 WLAN ch-11 (2462 MHz) TX mode @ 9Mbps/19dBm. Or.=X  
 HLP 3003C antenna (30MHz - 3 GHz). Peak detector used. RBW=1MHz, VBW=Auto. Measured at max angle 256deg.

Napoleon 22140-2 - Table

Freq (MHz)	Freq (Max) (MHz)	(PEAK) EMI (dBµV/m)	Ttbl Agl (deg)	Pol
2455.00	2456.04	100.33	256.00	H
2456.00	2457.09	100.69	256.00	H
2457.00	2457.10	100.68	256.00	H
2458.00	2456.94	100.94	256.00	H
2459.00	2457.94	99.62	256.00	H
2460.00	2459.23	98.91	256.00	H
2461.00	2459.97	98.54	256.00	H
2462.00	2461.07	97.46	256.00	H
2463.00	2462.77	97.21	256.00	H
2464.00	2465.22	96.83	256.00	H
2465.00	2464.46	97.26	256.00	H
2466.00	2465.24	96.79	256.00	H
2467.00	2466.34	96.31	256.00	H
2468.00	2468.00	95.78	256.00	H
2469.00	2467.99	95.86	256.00	H

**Carrier X-Orientation, RBW=1MHz (6 dB) – PK detector**

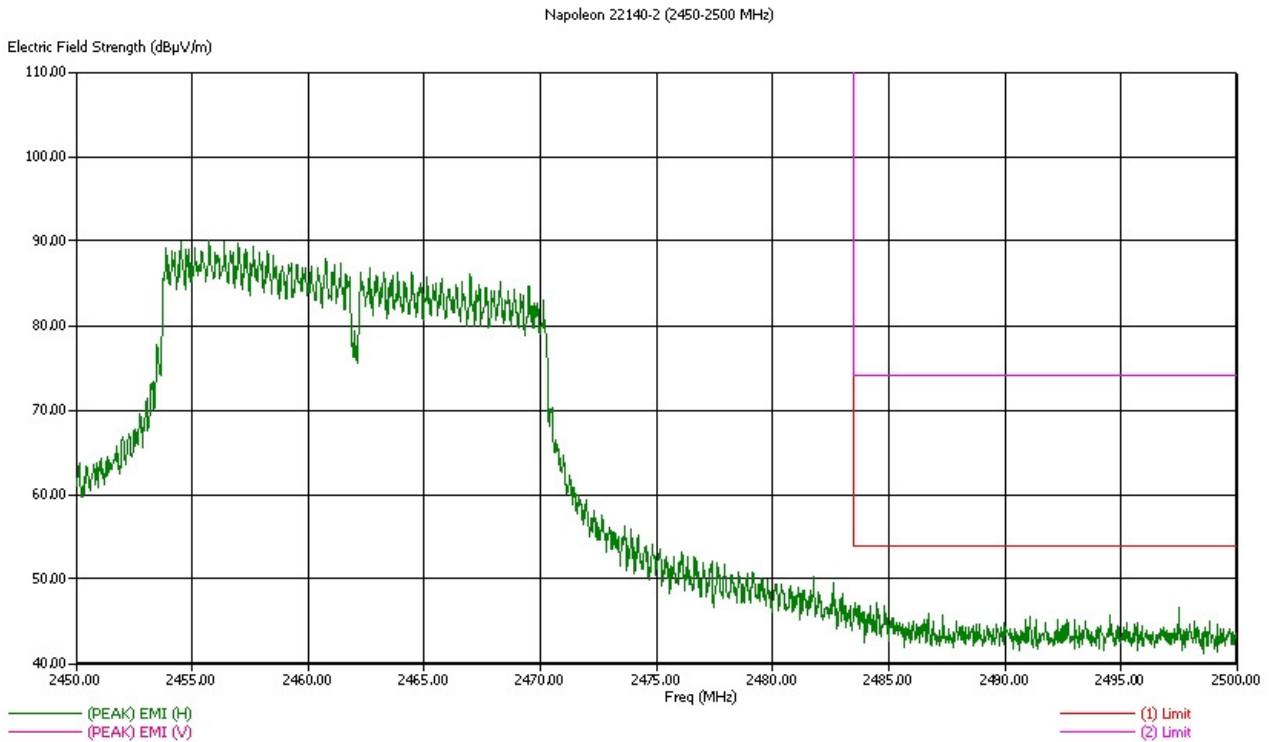
The frequency 2456.94 MHz was selected as peak reference point in order to minimize the span of the following measurement.

In DA 00-705 Step-2 the band edge is measured from 2483.5 MHz – 2485.5 MHz, using an RBW of 1% equals 60 kHz, so the RBW(6 dB)=50kHz, VBW=Auto were selected for the measurement.

The carrier peak was detected and the delta marker function was used to record the maximum peak in the frequency range from 2483.5 MHz to 2485.5 MHz.



Title: FCC 15.247(c) 23-10-2008 10:07:27  
 File: Napoleon 22140-2 (5.31)(ESU) FCC15.249 WLAN 2400(g) Tch-hgh\_X 2008-10-23 -PK -RBVSequence: Preliminary Scan  
 Operator: ADR AAL EMC TL1. hkr001  
 EUT Type: Napoleon. FCC ID: IHDT56JL1. pESN: 80C56D5D  
 EUT Condition: Board Rev: P3.1  
 Comments: FCC 15.249/ IEEE 802.11(a) WLAN emission in TCH mode  
 WLAN ch-11 (2462 MHz) TX mode @ 9Mbps/19dBm. Cr.=X  
 HLP 3003C antenna (30MHz - 3 GHz). Peak detector used.  
 Turntable fixed at 256 deg.  
 Carrier PK: 2455.74MHz @ 90.05dBuV/m  
 Marker freq: 2484.50MHz @ 47.24dBuV/m => Delta=42.81dB



**Marker-Delta, X-Orientation, RBW=50 kHz (6 dB) – Max hold**

Reading the graph indicates the worst case value to -42.81 dBc in the frequency range from 2483.5 MHz – 2485.5 MHz.

The maximum Peak field strength in the frequency band from 2398 MHz to 2400 MHz is then 100.94 dBuV/m – 42.81 dB = 58.13 dBuV/m => PASS.

Repeating the test using the Average detector with RBW=1MHz (6 dB).



Title: FCC 15.249  
 File: Napoleon 22140-2 (5.31)(ESU) FCC15.249 WLAN 2400(g) Tch-hgh\_X 2008-10-23 -AV CarrSequence: Final Measurements  
 Operator: ADR AAL EMC TL1. hkr001  
 EUT Type: Napoleon. FCC ID: IHDT56JL1. pESN: 80C56D5D  
 EUT Condition: Board Rev: P3.1  
 Comments: FCC 15.249/ IEEE 802.11(a) WLAN emission in TCH mode  
 WLAN ch-11 (2462 MHz) TX mode @ 9Mbps/19dBm. Or.=X  
 HLP 3003C antenna (30MHz - 3 GHz). AV detector used. RBW=1MHz, VBW=Auto. Measured at max angle 256deg.

Table

Freq (MHz)	Freq (Max) (MHz)	(AVG) EMI (dBµV/m)	(1) Limit (dBµV/m)	(AVG) Margin Lim1 (dB)	Ttbl Agl (deg)	Pol
2455.00	2456.07	88.98	114.00	-25.02	256.00	H
2456.00	2456.43	88.73	114.00	-25.27	256.00	H
2457.00	2456.41	88.73	114.00	-25.27	256.00	H
2458.00	2456.86	88.73	114.00	-25.27	256.00	H
2459.00	2458.98	87.91	114.00	-26.09	256.00	H
2460.00	2458.78	88.13	114.00	-25.87	256.00	H
2461.00	2459.80	87.98	114.00	-26.02	256.00	H
2462.00	2462.69	87.69	114.00	-26.31	256.00	H
2463.00	2463.46	87.78	114.00	-26.22	256.00	H
2464.00	2465.20	87.94	114.00	-26.06	256.00	H
2465.00	2465.32	88.46	114.00	-25.54	256.00	H
2466.00	2466.40	88.24	114.00	-25.76	256.00	H
2467.00	2466.47	88.31	114.00	-25.69	256.00	H
2468.00	2468.77	88.48	114.00	-25.52	256.00	H
2469.00	2468.82	88.46	114.00	-25.54	256.00	H

**Carrier X-Orientation, RBW=1 MHz (6 dB) – AVG detector**

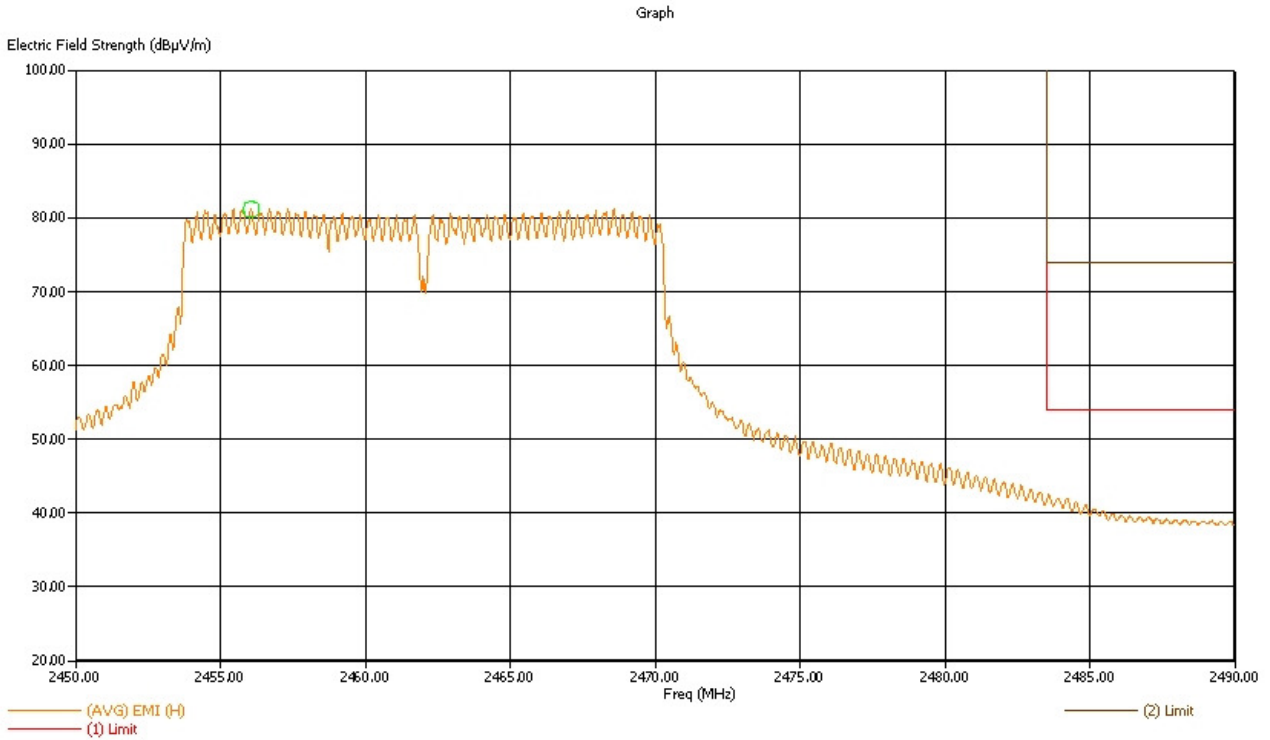
The frequency 2456.07 MHz was selected as peak reference point in order to minimize the span of the following measurement.

In DA 00-705 Step-2 the band edge is measured from 2483.5 MHz – 2485.5 MHz, using an RBW of 1% equals 60 kHz, so the RBW(3 dB)=100 kHz, VBW=Auto were selected for the measurement as the average detector only supports 10 kHz or 100 kHz RBW settings.

The carrier maximum average value was detected and the delta marker function was used to record the maximum average value in the frequency range from 2483.5 MHz to 2485.5 MHz.



Title: FCC 15.247(c) 27-10-2008 11:41:35  
File: Napoleon 22140-2 (5.31)(ESIB) FCC15.249 WLAN 2400(g) Tch-hgh\_X 2008-10-23 -AV -RBVSequence: Preliminary Scan  
Operator: ADR AAL EMC TL1 hkr001  
EUT Type: Napoleon, FCC ID: IHDP56JL1, pESN: 80C56D5D  
EUT Condition: Board Rev: P3.1  
Comments: FCC 15.249/ IEEE 802.11(g) WLAN emission in TCH mode  
WLAN ch-11 (2482 MHz) TX mode @ 9Mbps/19dBm, Cr.=X  
HLP 3003C antenna (30MHz - 3 GHz). AV detector used.  
Turntable fixed at 256 deg.  
Carrier Max: 2456.07MHz @ 81.26dBuV/m  
Marker freq: 2483.55MHz @ 42.56dBuV/m => Delta=38.70dB



### Marker-Delta, X-Orientation, RBW=100 kHz (3 dB), VBW=Auto – Max hold

Reading the graph indicates the worst case value to -38.70 dBc in the frequency range from 2483.5 MHz – 2485.5 MHz.

The maximum Average field strength in the frequency band from 2483.5 MHz to 2485.5 MHz is then 88.98 dBuV/m – 38.70 dB = 50.28 dBuV/m => PASS.