



August 4, 2008

Supplement to EMC test report (Exhibit 6A2) for Motorola portable cellular phone (FCC ID: IHDP56JS1)

Reference:

Correspondence Reference Number: IHD80611

Confirmation Number: 807100611-13

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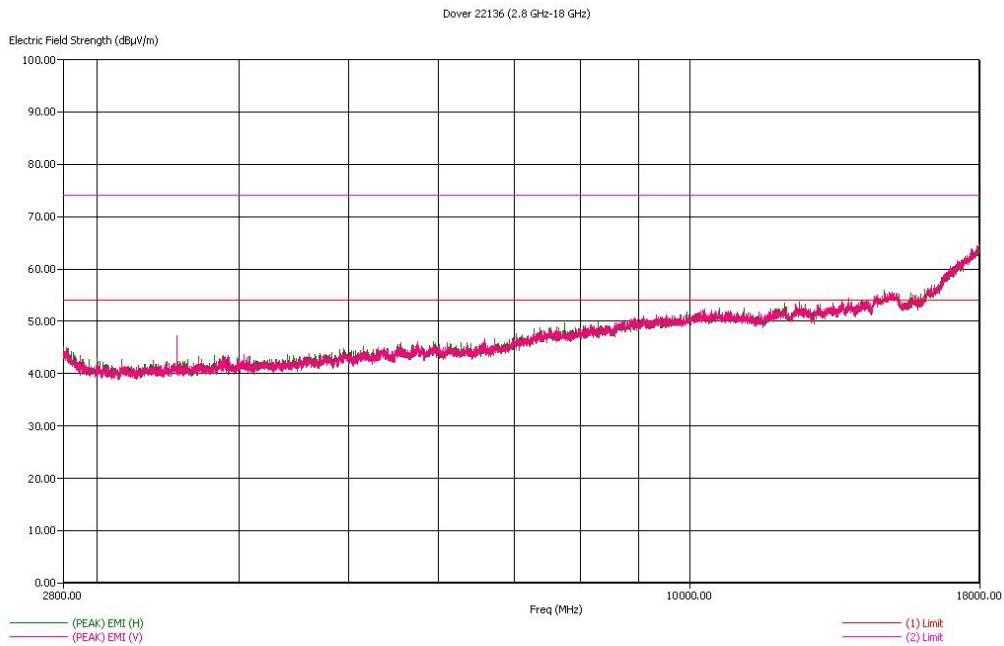


## Noise floor

Taken from test report:

Title: FCC 15.247(c)  
File: Dover 22136 (5.31)(ESIB) FCC15.247 BT2400 Tch-hgh\_Y 2008-06-20 - 3-18.set  
Operator: ADR\_AAL EMC\_TL1\_hkr001  
EUT Type: Dover, FCC ID: IHDP56JS1, IMEI: A000000213232E4  
EUT Condition: Board Rev: P3-1  
Comments: FCC 15.247(c)(1) Bluetooth (BT) emission in TCH mode.  
BT channel 78 (2480 MHz) up/do in test mode. Orientation Y=H  
EMCO 3115 antenna (3GHz - 18GHz).

20-06-2008 12:47:11  
Sequence: Preliminary Scan



### 3-18 GHz High Channel Dual Polarization Y

The detector used in our pre-scan tests is the peak detector. In the range from 3-18 GHz we cross the average limit line (54 dBµV/m) from approximately the 16.5 GHz to the 18 GHz range.

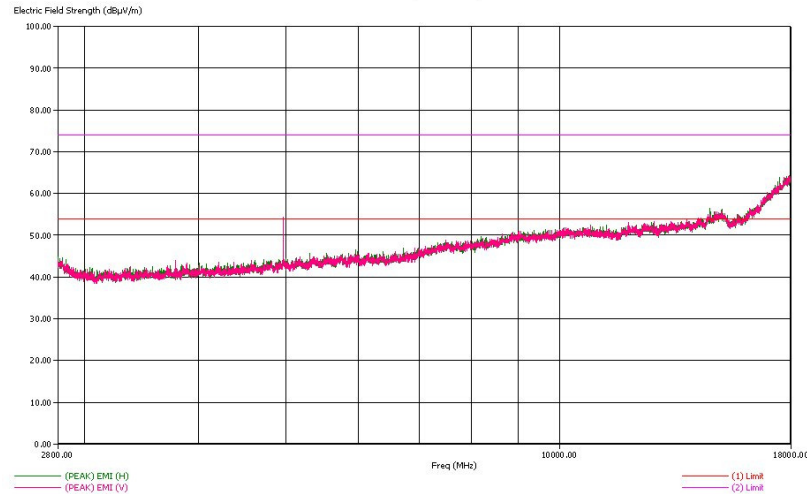
As we do not cross the peak detector limit line applied as per FCC part 15.35(b) shown at 74 dBµV/m, we still have margin to detect any emissions that may occur in the particular ranges. This can be seen from our chamber validation when we apply a signal generator as EUT in the chamber.

Obtained from other products we have the following graphs:



Title: FCC 15.247(c)  
 File: Burns 22103 (5.31)(ESIB) FCC15.247 BT2400 Tch-hgh\_Z 2008-06-26 - 3-18.set  
 Operator: ADR AAL EMC TL1 usv001  
 EUT Type: Burns FCC ID: IHDP56JP1 ESN: 02DB627B  
 EUT Condition: Board Rev: P2, Closed  
 Comments: FCC 15.247(c)(1) Bluetooth (BT) emission in TCH mode.  
 BT ch: 7B (2480 MHz) up/do in test mode. Orientation Z=H/V  
 EMCO 3115 antenna (3GHz - 18GHz). Peak detector used.

27-06-2008 10:48:05  
 Sequence: Preliminary Scan



Title: FCC 15.247(c)  
 File: Burns 22103 (5.31)(ESIB) FCC15.247 BT2400 Tch-hgh\_Z 2008-06-26 -3-18 -AV.set  
 Operator: ADR AAL EMC TL1 usv001  
 EUT Type: Burns FCC ID: IHDP56JP1 ESN: 02DB627B  
 EUT Condition: Board Rev: P2, Closed  
 Comments: FCC 15.247(c)(1) Bluetooth (BT) emission in TCH mode.  
 BT ch: 7B (2480 MHz) up/do in test mode. Orientation Z=H/V  
 EMCO 3115 antenna (3GHz - 18GHz). AV detector used.

27-06-2008 11:05:11  
 Sequence: Final Measurements

Burns 22103, hgh-Z - Table

| Freq (MHz) | Freq (Max) (MHz) | (AVG) EMI (dBµV/m) | (1) Limit (dBµV/m) | (AVG) Margin Lim1 (dB) | Ttbl Agl (deg) | Pol |
|------------|------------------|--------------------|--------------------|------------------------|----------------|-----|
| 4960.00    | 4960.11          | 43.22              | 54.00              | -10.78                 | 211.70         | H   |
| 4960.00    | 4959.99          | 42.09              | 54.00              | -11.91                 | 360.00         | V   |
| 18000.00   | 17998.50         | 51.71              | 54.00              | -2.29                  | 358.30         | H   |

### 3-18 GHz High Channel Dual Polarization Z

The test above in the range from 3-18 GHz shows that for a final measurement using the average detector we still have 2.29 dB margins to the average limit line at 18 GHz.

#### Conclusion:

Even though the noise floor looks high in certain frequency ranges the level is measured using peak detector giving satisfied margin to the average emission requirement specified in FCC part 15.209.

We monitor the performance on a regular basis and we also execute update programs to improve performance for our measurements.

In the range from 3 GHz to 18 GHz we currently used our spare antenna as our preferred antenna is out for the yearly calibration cycle and the noise floor measured with this antenna is a little worse than measured with the preferred antenna, however still valid for FCC testing according to the limits specified in FCC part 15.209.

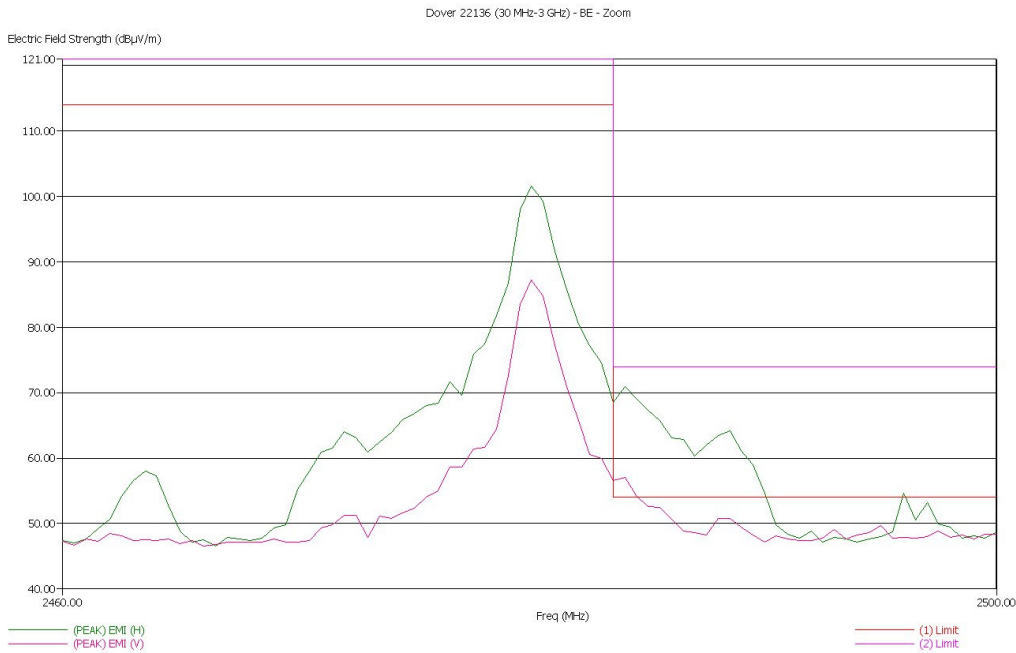


## High band edge

Taken from the test report:

Title: FCC 15.247(c)  
 File: Dover 22136 (5.31)(ESIB) FCC15.247 BT2400 Tch-hgh\_X 2008-06-19 -3 -22.5grader.set  
 Operator: ADR\_AAL EMC\_TL1, hkr001  
 EUT Type: Dover, FCC ID: IHDP56JS1. IMEI: A000000213232E4  
 EUT Condition: Board Rev: P3-1  
 Comments: FCC 15.247(c)(1) Bluetooth (BT) emission in TCH mode.  
 BT channel 78 (2480 MHz) up/do in test mode. Orientation X=H  
 HLP 3003C antenna (30MHz - 3 GHz).

02-07-2008 13:18:30  
 Sequence: Preliminary Scan



### Authorized Band Emissions High Channel Dual Polarization X

## Marker-Delta Method

The Bluetooth low 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 Step-1 using and RBW (6 dB)=VBW=1MHz – Peak detector and RBW(6 dB)=VBW=1MHz – Average detector.

Title: FCC 15.247(c)  
 File: Dover 22136 (5.31)(ESU) FCC15.247 BT2400 Tch-hgh\_X 2008-06-19 Carrier -PK.set  
 Operator: ADR\_AAL EMC\_TL1, hkr001  
 EUT Type: Dover, FCC ID: IHDP56JS1. IMEI: A000000213232E4  
 EUT Condition: Board Rev: P3-1  
 Comments: FCC 15.247(c)(1) Bluetooth (BT) emission in TCH mode.  
 BT channel 39 (2441 MHz) up/do in test mode. Orientation X=H  
 HLP 3003C antenna (30MHz - 3 GHz). Peak detector used.

04-08-2008 15:36:02  
 Sequence: Final Measurements

Dover 22136 - Table

| Freq (MHz) | Freq (Max) (MHz) | (PEAK) EMI (dBµV/m) | (1) Limit (dBµV/m) | (PEAK) Margin Lim1 (dB) | Ttbl Agl (deg) | Pol | (PEAK) Trace (dBµV) |
|------------|------------------|---------------------|--------------------|-------------------------|----------------|-----|---------------------|
| 2480.00    | 2480.06          | 103.15              | 114.00             | -10.85                  | 302.90         | H   | 95.88               |
| 2480.00    | 2480.08          | 87.27               | 114.00             | -26.73                  | 313.50         | V   | 80.00               |



**Carrier Y-Orientation-RBW(6 dB)=VBW=1MHz – PK detector**

The frequency 2480.06 was selected as peak reference point in order to minimize the span of the Step-2 measurement.

In 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.

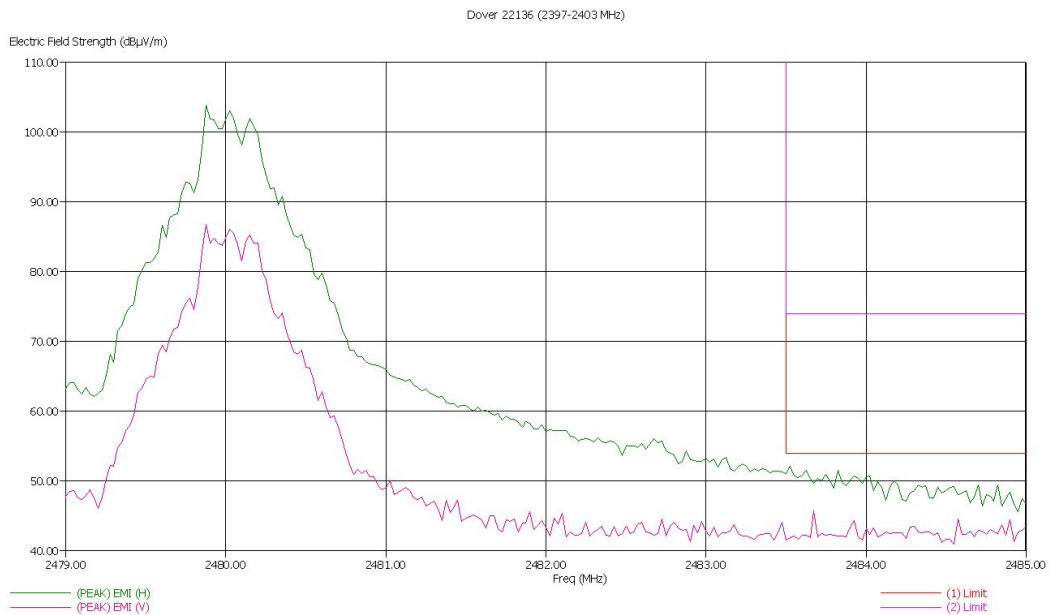
The carrier peak was detected and the delta marker function was used to record the maximum peak in the frequency range from 2483.5 MHz to 2485.5 MHz.

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Title: FCC 15.247(c)
File: Dover 22136 (5.31) (ESU) FCC15.247 BT2400 Tch-hgh_X 2008-06-19 -PK -RBW=50K -VBW=Auto.set
Operator: ADR_AAL_EMC_TL1_hkr001
EUT Type: Dover, FCC ID: IHDP56JS1. IMEI: A000000213232E4
EUT Condition: Board Rev: P3-1
Comments: FCC 15.247(c)(1) Bluetooth (BT) emission in TCH mode.
BT channel 78 (2480 MHz) up/do in test mode. Orientation X=H
HLP 3003C antenna (30MHz - 3 GHz).

Turntable fixed at 303 deg. & Transducer fixed at Horizontal
Carrier PK: 2479.88MHz @ 103.84dBuV/m
Marker freq: 2483.52MHz @ 52.15dBuV/m -> Delta-51.69dB
    
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04-08-2008 15:53:57  
Sequence: Preliminary Scan



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

Reading the graph indicates the worst case value to -51.69 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 103.06 dBuV/m – 51.69 dB = 52.37 dBuV/m => PASS.