



February 21, 2011

Federal Communications Commission  
Authorization and Evaluation Division  
Office of Engineering and Technology Laboratory Division □  
7435 Oakland Mills Rd.  
Columbia MD 21046-1609

Re: Class II Change FCC ID: BCG-E2380B  
Correspondence Reference Number: 39553

**1) The op. desc. exhibit indicates maximum output for GPRS 2-slot transmissions is restricted by "1.5 dBm from the power setting listed in the original FCC Grant" It is assumed that the restriction does not apply to 1-slot. Is this just for hotspot mode or for all 2-slot GPRS operations? Please also include descriptions in SAR report (and other details in op. desc. if qualified for confid.) regarding how the power reduction is controlled. Please also revise all portions of filing where applicable to state the power reduction is 1.5 dB, not 1.5 dBm (1.4 mW).**

The Technical Exhibit did have a typo referencing the power backoff. The 1.5 dBm is incorrect and should have stated 1.5db. An updated Technical Exhibit will be uploaded.

The statement has been updated in the SAR Report Revision 5, Section 3.1 in the last row of the table labeled "Notes"

**2) Sec. 3.1 of SAR report indicates Software Revision: N/A. Because this Class II is for iOS software update, please revise to identify any applicable software version / revision number(s).**

This Software Revision can be found in the SAR Report Revision 5, Section 3.1 and 3.2.

The Baseband firmware version is 04.10.01/ 4.3 (8F166) . The user can check the Baseband Firmware version being used by the following menus: Settings, General, About, scrolling down to Version.

The power backoff of 1.5dB applies in the following configurations:

Band: GSM850 and EGSM900

Modulation: GMSK (CS1 – CS4 and MCS1 – MCS 4) Below the data from the Original report

Mode: GPRS and EGPRS

Number of uplink slots: 2

The power backoff is included in baseband firmware upgrade 04.10.01/ 4.3 (8F166) which Apple will make available for users via through the iTunes website sometime after the Class II change is approved.

**3) Please explain whether device supports 3GPP DTM, to confirm applicable test configurations. i.e. if not in SAR report already, consistent with FCC KDB pub 941225 D04 please list 3GPP terminal class, multislot class, - AND - DTM multislot class (i.e. as defined in 3GPP TS 43.055, 3GPP TS 45.002, etc)**

The iPhone 4 GSM device does not support Dual Transfer Mode (DTM) per 3GPP 51.010 specification.

This is stated in the updated SAR Report, Revision 5, Section 3.1 "DTM Multi-Slot Class"

**4) a) it is unclear whether and how the output power results in sec. 8.1 of SAR report demonstrate the 1.5 dB output reduction identified for 2-slot GPRS in this Class II filing. Need output measurement results for H, M, L channels for GPRS/EDGE modes to verify power reduction. Note also this and all future FCC and TCB filings must clearly apply uniform procedures, including e.g. KDB pub. 941225 D03: "In order to qualify for ... test reduction, the maximum burst-averaged output power for each mode (GMS/GPRS/EDGE) and the corresponding multi-slot class must be clearly identified in the SAR report for each frequency band. A summary of the specific procedures applied to arrive at the final test configurations must also be included along with the test data to support the test results."**

The output Power Measurements are stated in the updated SAR report, Revision 5, the Output Power Measurements table in Section 8.1.

#### Data from Original SAR report

##### GPRS (GMSK) - Coding Scheme: CS1

Band	Ch No.	f (MHz)	Avg burst Pwr (dBm)			
			1 slot	Frame Avg Pwr	2 slot	Frame Avg Pwr
GSM850	128	824.2	32.50	23.50	31.50	25.50
	190	836.6	32.40	23.40	31.50	25.50
	251	848.8	32.50	23.50	31.50	25.50
GSM1900	512	1850.2	30.40	21.40	28.60	22.60
	661	1880	30.40	21.40	28.70	22.70
	810	1909.8	30.30	21.30	28.70	22.70

#### Data from Hotspot Updated Report

##### GSM/(E)GPRS

Band	Channel	Frequency [MHz]	Average Power [dBm]				
			GSM	GPRS 1uplink timeslot	GPRS 2 uplink timeslots	EGPRS 1 uplink timeslot	EGPRS 2 uplink timeslots
GSM850	128	824.2	32.4	32.4	29.6	27.1	27.1
	190	836.6	32.4	32.4	29.6	27.1	27.1
	251	848.8	32.4	32.4	29.6	27.1	27.1
PCS1900	512	1850.2	30.5	30.5	28.5	26.1	26.1
	661	1880	30.3	30.3	28.4	26.0	26.0
	810	1909.8	30.2	30.2	28.4	25.9	25.9

4) b) SAR lab and applicant please also ensure to apply KDB pub. 291699, and ensuring reported output powers are consistent with as reported in the original filings under this FCC ID 4) c) Also please revise SAR to list H, M, L channel maximum output for Wi-Fi.

This has been included in the updated SAR report, Revision 5, Section 8.1.

**5) Please include simultaneous transmission SAR exclusion analyses for the applicable modes to qualify for SAR exclusion or include volume scans as applicable; also see next item.**

This item is addressed in the updated SAR report, Revision 5, Section 8.3, Page 20 of 26 in the SAR Report.

**6) Need to identify the simultaneous transmission configurations applicable for this device with respect to the voice & data transmissions for the different wireless mode operating configurations and exposure/use conditions (head, body-worn, hotspot etc.) WCDMA/HSDPA generally allows simultaneous voice and data, which would enable hotspot mode to transmit in conjunction with a voice call next to the ear. When this is the case, the earlier (original) head SAR data for all applicable modes (e.g. WCDMA/HSPA and Wi-Fi) relating to hotspot use at the head should be applied to determine simultaneous transmission SAR exclusion based on sum of 1-g or SAR to peak location ratio. If SAR exclusion does not apply, volume scan measurement may be necessary. If device allows DTM in GSM/GPRS/EDGE, similar issues may apply for hotspot in conjunction with voice call next to the ear. After addressing all these, the numbers at the end of sec. 8.2 may need revision. At minimum for all future filings for multi-transmitter portable devices, in general please ensure to address the following in SAR reports: For multi-transmitter portable devices, in general inquiries and test reports need to identify, typically in a tabulated format, the simultaneous voice/data transmission configurations and combinations for all applicable wireless operating modes, frequency bands and exposure conditions with respect to the following parameters and configurations. Relevant parameters and configurations for SAR evaluation include frequency bands, operating modes, device operating configurations and exposure conditions required by the applicable SAR measurement and KDB procedures; for example, voice and data modes in LTE, 1xRTT, WCDMA, GSM, EvDo, HSPA, GPRS/EDGE, WiMax, Wi-Fi, Bluetooth etc. for head (touch and tilt positions) and body-worn exposure conditions, antenna diversity configurations, handset flip-cover or slide-cover positions, modulations, channel bandwidths and resource allocations, such as data rate, zone type, symbol ratio / duty factor, data block size etc.**

See the chart on the next page of this reply.

<b>Simultaneous Transmission</b>				
	<b>GSM Voice</b>	<b>EGPRS or HSDPA but only one at a time</b>	<b>WiFi or Bluetooth but only one at a time</b>	<b>HotSpot Mode</b>
<b>GSM Voice</b>		Yes	Yes	Yes
<b>EGPRS or HSDPA but only one at a time</b>	Yes		Yes	Yes
<b>WiFi or Bluetooth but only one at a time</b>	Yes	Yes		Yes
<b>HotSpot Mode</b>	Yes	Yes	Yes	

**Notes:**

1) This device supports Simultaneous Transmission in the modes shown above.

2) The single antenna for cellular has a separation distance of 8.7cm to the WiFi/Bluetooth antenna.

**3) CONCLUSIONS:**

o Simultaneous transmission SAR is not required for 3G & WiFi because the sum of the 1-g SAR is

< 1.6 W/kg

o Simultaneous transmission SAR is not required for WiFi & 3G because the the sum of the 1-g

SAR is < 1.6 W/kg.

7) Sec. 4 of SAR report indicates "GSM 2G output power" is reduced by 1.5 dB; if it is only GPRS 2-slot maximum output that is reduced by 1.5 dB, please revise to say so. And/or please revise to explain whether, what, and how GPRS 1-slot and other GSM modes have any output power restrictions.

This has been updated in the SAR Report Revision 5, Section 3.1 in the last row of the table labeled "Notes".

8) Please include a diagram in sec. 8.3 to identify the antenna

**locations in the device, to support the test configurations.**

The following photos have been included in the updated SAR Report, Revision 5, Section 8.4





9) The measurement drifts identified in several of the SAR plots are above the 5% (~0.21 dB) threshold recommended by IEEE Std 1528-2003. The highest reported drift is about -1.43 dB. Please verify if such drifts are inherent to the device, or due to other measurement issues, and fully explain this in the SAR report, and/or re-test where appropriate. Please ensure applicable measurement protocols are applied in all future filings (see also below for additional measurement issues).

New measurements were performed to correct the previously reported data. In the updated SAR report, Revision 5, See plots: 10, 19, 20, 36, 39, 47, 59, 60.

10) Numerous plots are showing high SAR regions clipped from area scans, which typically would not enable all peak locations to be determined for applicable zoom scan measurements to calculate the

**highest 1-g SAR. SAR measurement protocols require the regions within the projection of a device (onto the phantom) to be measured. It does not appear the required measurement protocol has been followed. Please verify that none of these have measured 1-g SAR greater than 0.8 W/kg; otherwise, such measurements should be repeated.**

New measurements were performed to correct the previously reported data. In the updated SAR report, Revision 5, See plots: 38, 39, 41, 43, 44, 48, 49, 50, 51, 53, 54.

**11) Plot # 39 is showing some unusual activity during the SAR measurement, with drifts of -1.43 dB. It appears the output or battery might have dropped off in the middle of the SAR measurement. Please repeat this measurement with respect to the required measurement procedures and protocols (see related items above).**

New measurements were performed to correct the previously reported data. In the updated SAR report, Revision 5, See plot: 39

**12) FYI: For Plot 53, zoom scans are required for all secondary peaks within x dB from the highest peak (see IEEE Std 1528-2003 for exact value). Please follow protocols in future filings.**

New measurements were performed to correct the previously reported data. In the updated SAR report, Revision 5, See plot: 53

**13) Plot 54: the 1-g SAR value is missing. Also see last item (# 11).**

New measurements were performed to correct the previously reported data. In the updated SAR report, Revision 5, See plot: 54

**14) A few of the photo captions in Appendix B are showing 0 mm test distance, which do not seem to be agree with the 10 mm test distance used.**

See Appendix B, Photos 4, 5, and 6.



15) As we understand, fccids BCG-E2380A and BCG-E2380B have identical parts 22/24 components/functions, but differ in WLAN/BT component - in such cases all applications submitted to TCBs or FCC need to ensure to apply FCC rules about reporting test results for maximum output conditions and in accordance with OET Lab policies and procedures such as KDB pub. 291699 that power results and tune-up targets need to be consistent across all exhibits and Form-731. As is generally needed for all application reviews, we prepared a summary table of radiated and conducted powers shown in the original filings for fccids BCG-E2380A and BCG-E2380B, and our findings are that those original filings had problematic non-negligible variations across results from the several test labs and test samples indicated in those reports. For the purposes of this filing, documentation is needed to support SAR results and related to the op. desc. statement: "1.5 dBm [sic] from the power setting listed in the original FCC Grant" i.e. please provide in this filing listings of the specific radiated and conducted rated maximum output powers from the original filings, and as intended to be used as the reference for the 1.5 dB reduction. as feasible/appropriate, please also submit tune-up target info for this device, i.e. consistent with OET Lab policy (Apr 2010 FCC-TCB conference notes): - a test device must be representative of the production units, with respect to §2.908; for example, within specified - - production tolerance, electrical and mechanical tolerances - - performance specifications etc - the measured maximum output power must be within - - the specified tune-up tolerance range for production units - the test results must demonstrate compliance - - for all applicable limits, including maximum output power, RF exposure and various EMC requirements - - when results are extrapolated to the upper tune-up tolerance limit, with respect to the maximum measured output power of the test sample, to ensure all production units are compliant - - to alleviate potential inconsistencies in determining compliance

To clarify again the Operational Description has a typographical error. The 1.5 dBm is incorrect and should have stated 1.5db. An updated Technical Exhibit will be uploaded.

Original test samples were in accordance with rule part 2.907 and with KDB 291699. As shown in the updated tune-up procedure, the output power has a tolerance of -1.5dB to +0.5dB. The test samples, and measurements are within the tune-up specification. Maximum output power, RF exposure, and other EMC requirements remain in compliance when extrapolated to the upper tune-up tolerance limit.

The conducted power measurement data can be found in the updated SAR report, Revision 5, Section 8.1, Power Measurements.

The Tune up procedure with conducted power table will be uploaded to amend the Tune up procedure on file.

**16) Further also to preceding item(s) about "A" and "B" fccids are understood to have same WWAN operations, SAR report has power results for HSDPA, but need to also report HSPA; i.e. for this and all future filings please ensure to clearly and fully apply KDB pub 941225 D01 and D02, etc**

To clarify, FCC ID: BCG-E2380A and BCG-E2380B have the same WWAN circuits, components, and operations.

This item is addressed in the updated SAR report, Revision 5, Section 8.1, Power Measurements.

**17) The original filing for this FCC ID contained only a minimal "regulatory" info excerpt of user instructions; for this filing (and all future filings) TCB and/or applicant and/or agent please ensure to submit complete device operating instructions as will be furnished to users [2.1033(b)(3), 2.1033(c)(3)].**

The updated User Guide has been uploaded to the FCC.

Sincerely,

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