FCC ID: NCMOGE0301
Correspondence Reference Number: 33326
731 Confirmation Number: EA171488
Date of Original E-Mail: 7/5/2007
Subject: info request - cont.
---

1) As mentioned in previous corresp. but not addressed in response, this filing has requested short-term
confidentiality for external photos. Besides External Photos exhibit, this filing presently has external views of device in Test Setup Photos, Test Report, and RF Exposure Info exhibits. For all EMC and SAR test exhibits, please submit new exhibits with blank-spaces at photo locations. Alternatively, please submit revised confidentiality letter to remove External Photos request.

Added as separate response to FCC

2) As mentioned in previous corresp., radiated power data is requested to be in accordance with FCC-TCB-testlab guidance eg KDB pub. 442401, 497522. KDB pub 497522 says:
"For both integral-antenna and connectorized devices, the grant shall report conducted and maximum radiated powers measured in the various hosts, and restrict use to the specific antennas tested for the filing. Compliance to radiated limits must be shown if applicable for specific FCC rule parts, as based on radiated not conducted tests." Test setup with card in fixture instead of host-product is not in accordance with FCC procedure - please revise.

Test report will be added as separate response to FCC

3) Concerning item 7 in preceding corresp. 33260/33261, response appears to be from a third-party not listed as part of this application - please submit new response to the item 7 as provided only from applicant or agent

Original question in correspondence 33260/33261 for reference: "7) Per FCC 3G procedures to verify power using sec. 5.2 of 3GPP TS 34.121, please describe all configurations not supported by DUT or that cannot be measured due to technical or equipment limitations."

The DUT is fully compliant with the 3GPP standard and supports all test configurations referenced in TS 34.121. The test equipment used for HSUPA tests was capable of supporting all test configurations defined in 3GPP 34.121 for RF testing.

Please also see the answers to questions "5a" and "5b" in this response for detailed information on the configurations tested and parameters used.

4) Further to item 7 in preceding corresp. 33260/33261, please explain implementation of Maximum Power Reduction according to Cubic Metric (CM) requirements.

The Device Under Test (DUT) incorporates maximum power reduction as described in 3GPP standards to meet emissions requirements as needed. The DUT calculates the CM for the transmitted waveform and then applies the appropriate power reduction if required to meet all emissions requirements.

5a) Concerning item 5 in preceding corresp. 33260/33261, response states "This doesn't cause the UE to go into a special test loop" 3GPP requires tests in all loopback modes, such that all test parameters are established accordingly. Please demonstrate that proper loopback modes were used, or revise test data where appropriate.

The CMU200 was properly configured for all WCDMA tests in respect to the 3GPP 34.121.

For Rel99, the connection used a Test Mode 1 loop back with a 12.2kbps RMC channel. For HSDPA, the connection was established using Test Mode 1 loop back with both a 12.2kbps RMC channel and an H-SET1 FRC channel.

The HSUPA loop back configures the DUT to transmit a Release 99 loop back call using Test Mode 1 (12.2kbps RMC) and also configures a HSDPA H-Set1 fixed reference channel (FRC). The HSUPA loop back then configures the E-DPCCH and E-DPDCH to loop back the HDSDPA date as required by 3GPP 34.121.

The beta factors for each HSUPA Subtest were configured per 3GPP 34.121 Table C.11.13 copied below for reference. The general WCDMA, HSUPA and HSDPA CMU200 setup parameters used for testing are listed in the following table below. 3GPP 34.121 measurement procedures were used for all measurements.

		WCDMA Mode						
	CMU200 Configurable Parameter	Rel99	HSDPA	HSUPA				
	Subtest	Not Applicable	1	1	2	3	4	5
WCDMA General Settings	Loopback Mode	Test Mode 1	Test Mode 1	Test Mode 1				
	Rel99 RMC	12.2kbps RMC	12.2kbps RMC	12.2kbps RMC				
	HSDPA FRC	Not applicable	H-Set1	H-Set1				
	HSUPA Test Mode	Not Applicable	Not Applicable	HSUPA Loopback				
	Power Control Algorithm	Algorithm2	Algorithm2	Algorithm2				
	βc	8	2	11	6	15	2	15
	βd	15	15	15	15	15	15	15
HSDPA Specific Settings	ΔACK	Not Applicable	8	8				
	ΔNAK	Not Applicable	8	8				
	ΔCQI	Not Applicable	8	8				
	Ack-Nack repetition factor	Not Applicable	3	3				
	CQI Feedback (Table 5.2B.4)	Not Applicable	4ms	4ms				
	CQI Repetition Factor (Table 5.2B.4)	Not Applicable	2	2				
HSUPA Specific Settings	#E-TFCI	Not Applicable	Not Applicable	5	5	3	5	5
	E-DCH TTI	Not Applicable	Not Applicable	10 ms				
	Δ E-DPCCH	Not Applicable	Not Applicable	6	8	8	5	7
	ΔHARQ	Not Applicable	Not Applicable	0	0	0	0	0
	AG Index	Not Applicable	Not Applicable	20	12	15	17	21
	Reference E-TFCI's	Not Applicable	Not Applicable	E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27		E-TFCI 11 E-TFCI PO 4 E-TFCI 92 E-TFCI PO 18		E-TFCI 11 E-TFCI PO 4 E-TFCI 67 E-TFCI PO 18 E-TFCI 71 E-TFCI PO 23 E-TFCI 75 E-TFCI PO 26 E-TFCI 81 E-TFCI PO 27

3GPP 34.121 Table C.11.13

Sub-test	β_c	β_d	β_d (SF)	β_c/β_d	β_{HS} (Note1)	β_{ec}	β_{ed} (Note 5) (Note 6)	β_{ed} (SF)	β_{ed} (Codes)	CM (dB) (Note 2)	MPR (dB) (Note 2)	AG Index (Note 6)	E-TFCI
1	11/15 (Note 3)	15/15 (Note 3)	64	11/15 (Note 3)	22/15	209/225	1309/225	4	1	1.0	0.0	20	75
2	6/15	15/15	64	6/15	12/15	12/15	94/75	4	1	3.0	2.0	12	67
3	15/15	9/15	64	15/9	30/15	30/15	$\beta_{ed}1$: 47/15 $\beta_{ed}2$: 47/15	4 4	2	2.0	1.0	15	92
4	2/15	15/15	64	2/15	4/15	2/15	56/75	4	1	3.0	2.0	17	71
5	15/15 (Note 4)	15/15 (Note 4)	64	15/15 (Note 4)	30/15	24/15	134/15	4	1	1.0	0.0	21	81

5b) Please provide additional info about which specific 3GPP transmitter tests are implemented by "non-commercialized SW" along with corresponding test parameters and ranges

The "non-commercialized SW" comment was in reference to the commercial availability status of the CMU200 HSUPA communications set. At the time of test, the CMU200 used pre-release firmware that fully supports 3GPP 34.121 HSUPA configurations (parameters and functionality addressed in "5a" response) for RF conformance testing. The comment's intent was not to indicate that the CMU200 did not allow the DUT to be configured for the proper HSUPA subtest configurations required to support RF testing.

Internal CMU200 3GPP 34.121 test capabilities were not used to generate the reported data. The CMU200 was only used to configure the DUT into the proper HSUPA subtest configurations so that all measurements could be completed using a spectrum analyzer.

6) Further to item 8 in preceding corresp. 33260/33261, please explain specific test parameter settings used per HSDPA and HSUPA UE categories.

Please see response "5a" for the specific test parameter settings for 3GPP subtests.

The required 3GPP subtest configurations are the same for all equipment categories. If a DUT device's category does not support a subtest configuration, then that subtest is omitted per 3GPP 34.121. For example, a Category 1 device cannot support Subtest 3 and is thus not tested in subtest configuration 3 per 34.121 Table C.11.13.

Option's DUT is HSUPA Category 5 and HSDPA Category 8 and therefore supports all HSUPA subtest configurations required.

7) Concerning item 7 in preceding corresp. 33260/33261, SAR evaluations are recommended for low crest- factor modes, whereas subtest 4 has MPR and therefore may not be worst case. Please provide other info to support worst case, or revise to use subtest 5 where appropriate.

Per the "Interim SAR Procedures for Release 6 HSPA devices", which was unavailable at the time of testing, HSUPA SAR data is not required for this device because the HSUPA maximum transmit power is less then the Release99 maximum transmit power results and all SAR results for all modes of operation (GPRS/WCDMA/HSPA) is less then 75% of the SAR limit (1.6mW/g). Based on these criteria, the data in question represents additional test data providing an added level of confidence that the DUT meets FCC SAR requirements and is not a mandatory data reporting requirement.

In reviewing the DUT SAR results, GPRS has more then 2dB of margin and all WCDMA modes have 6.9dB or greater margin to the FCC SAR limit while transmitting with more power then the HSUPA configurations. Although there is higher measurement uncertainty associated with the HSUPA Subtest 4

waveform and its higher crest factor, the fact that the HSUPA SAR results are well below 7 dB of FCC limit outweighs any concerns that Subtest 4 was not the appropriate worst configuration to test.

Therefore since 1) The FCC HSPA interim test procedure excludes reporting HSPA data for this device based on the HSPA transmit power test results, 2) HSUPA Subtest 4 had the highest reported transmit power for HSUPA configurations, 3) HSUPA Subtest 4 transmit power results were less then Rel99 transmit power, and 4) the SAR margin for all WCDMA modes exceeds 6dB of margin to FCC limit, Option has determined that the FCC has been presented with a SAR report adequately representing the worst case SAR data from the DUT and that the device is safe for operation by end users.