

-----Original Message-----

From: Tim Harrington [mailto:Tim.Harrington@fcc.gov]
Sent: maandag 6 augustus 2007 2:55
To: Thomas Gulinck
Cc: Option Certification; Tim Harrington
Subject: RE: model 301

Hello Option Team

The overall goal is for applications to have valid data that is consistent with specific or similar procedures.

Following includes general re-statement of certain key items from jun06 FCC 3G SAR procedures, applicable for SAR evaluations of 3GPP devices since that time.

- The default test configuration is to measure SAR in WCDMA without HSDPA, with an established radio link between the DUT and a communication test set using a 12.2 kbps RMC (reference measurement channel) configured in Test Loop Mode 1; and

We clearly see that:

- For FDD5:

IMST report:

Highest SAR result on WCDMA comes from the combination of our datcard with Compaq nc6320 laptop. The same laptop is used for measuring HSDPA at IMST and HSUPA at TUV UK (refer to: 75901888 Report 01 Issue 2.pdf). We additionally tested SAR on HSDPA on the HSDPA-subtest that gave us the maximum Output power. (Refer to: 75901888 Report 01 Issue 2.pdf) This is just for your information to show FCC that SAR values for HSDPA are well below the 1.6 limit.

For FDD2:

IMST report:

Highest SAR result comes from the combination of our datcard with Acer travelmate laptop. The same laptop is used for measuring HSDPA and HSUPA at TUV UK (refer to: 75901888 Report 01 Issue 2.pdf). We additionally tested SAR on HSDPA on the HSDPA-subtest that gave us the maximum Output power. (Refer to: 75901888 Report 01 Issue 2.pdf) This is just for your information to show FCC that SAR values for HSDPA are well below the 1.6 limit.

- test HSDPA with an FRC (fixed reference channel) and a 12.2 kbps RMC using the highest SAR configuration in WCDMA; and

From 75901888 SAR Report Section 1.2:

The first part of the SAR testing was conducted at IMST and their SAR test results are contained in the IMST SAR report (reference: SAR Report_7layers_6620_631_FCC_Body_850_1900_WCDMA_II_V_Globetrotter Express_13.pdf). The maximum SAR obtained when the device was configured for

WCDMA in the IMST SAR report was 0.316W/kg (1-gram SAR average). The SAR values that we measured on HSDPA were 0,188 W/kg on FDD2 and 0,326W/kg on FDD5.

The HSDPA body SAR measurements were made using an FRC with H-set 1 and a 12.2kbps RMC configured in test loop mode 1. For FDD Band 2, SAR testing was conducted using the Acer TravelMate 4260 Series, which was the worst-case host found in the IMST SAR report [8]. For FDD Band 5, SAR testing was conducted using the HP Compaq nc 6320, which was the worst-case host found in the IMST SAR report [8].

The second part of SAR testing was performed at TUV UK. We refer to the TUV SAR report "75901888" for the measurements.

The channel and sub-test which gave rise to the highest conducted output power measurement for HSDPA and HSUPA in each bands was selected to be measured and the results are contained within the TUV UK test report. The output power measurements are contained within Section 1.3 of this report. The output power readings for HSPA did not exceed the WCDMA readings by 0.25dB and therefore, further measurements were not necessary.

- SAR is selectively confirmed for other physical channel configurations (DPCCH & DPDCH_n) according to output power, exposure conditions and device operating capabilities

The device is fully compliant with 3GPP standards and the defined UMTS spreading factors are as follows (included in section 1.2 of the 75901888 SAR Report):

- The DPCCH spreading factor is 256 per 3GPP TS 25.213 section 4.3.1.2.1.
- The DPDCH spreading factor is dependent on number of DPDCH channels and data range. For a single channel the spreading factor can range from 4 to 256. For more than one DPDCH channel the spreading factor is 4. Further details are defined by 3GPP in TS 25.213 section 4.3.1.2.1.
- HS-DPCCH spreading factor is 256. Further details can be found in 3GPP TS 25.213 section 4.3.1.2.2.

New SAR report does not appear to have followed this active-since-jun06 procedure.

jun07 FCC Interim HSPA procedures also use a similar test sequence, therefore applicants, test labs, and TCBs are expected to be very familiar with and apply this type of sequence for individual SAR evaluations.

The configuration used for SAR testing is in accordance with the operating capability of the device. Page 5 of the original 75901888 SAR Report contains the reference to the Interim SAR procedures which were followed: "7. FCC OET Interim SAR Procedures for Release 6 HSPA Devices - Preliminary Draft, 06/06/2007"

Before determining which HSPA configurations need SAR evaluation, FCC 3G SAR procedures explain that various mean output power tests must be done and reported, including WCDMA Rel99, HSDPA Rel5 or Rel6, and HSUPA Rel6.

- maximum output power test results per 3GPP TS 34.121 for all applicable physical channel configurations **should be tabulated in the test report**; all applicable (DPCCH, DPDCH_n and spreading codes, HS-DPCCH) as described in

table at pg 61 Appdx C of kdb941225, and for HS-DPCCH in Appdx D of kdb941225; and/or using jun07 Interim HSPA guidance

Section 1.4 of the SAR Report contains the Channel Parameters used during testing and section 1.3 RF Power Output contains the output power results for which the device was configured in HSDPA mode or HSUPA mode as required. Output power measurements were made in accordance with the 3GPP 34.121-1 standard.

- Regardless of how the connection is established, ... the output conditions of the test device should be closely monitored with applicable equipment, communication test set, analyzers or power meters, to ensure the required code channel and output conditions are satisfied during the SAR measurement.

- The device operating parameters described in the test procedures should be closely followed and fully documented in the test report to enable the tests to be repeated easily and with sufficient accuracy.

The output conditions of the device were monitored before and after test to ensure that the set-up was correct, and transmission was in the appropriate mode and configuration. The Anritsu 8815B Radio Communications Analyzer was initially configured with default settings and the parameters described in 3GPP TS 34.121-1 were applied.

So far, and as discussed already, test reports in this application do not appear to have included sufficient info to confirm these principles were applied and therefore device were operating and tested correctly.

We will check it again, but meanwhile if not in exhibits already also please explain device capability for number of physical channels, bit rates, symbol rates, spreading factors, spreading codes.

Same issues as items 6) to 11) sent aug3 in NCMOGE0301E appear to remain applicable for contents of application NCMOGE0301.

7) In SAR plots please clarify Tx-antenna position within device and host location relative to plots

Figure 4 and 5 (plots) of the report shows the GE0301 card inserted into the HP Compaq laptop and the plot has a black outline of the card inserted into the laptop. The corresponding photograph which was taken for figures 4 and 5 are shown in Figure 8. Figure 6 and 7 (plots) of the report shows the GE0301 card inserted into the Acer laptop and the plot has a black outline of the card inserted into the laptop. The corresponding photograph which was taken for figures 6 and 7 are shown in Figure 9. There are additional positional photographs in Figures 10-13.

- 3GPP subtests 1,3,5 were used - not in accordance with jun07 FCC Interim HSPA procedures

I refer to the IMST SAR report where we followed the guidelines from FCC for HSDPA. At the time when we started testing, no guideline was available from FCC for HSUPA, so we followed the way Qualcomm suggested to do:

The channel and sub-test which gave rise to the highest conducted output power measurement for HSUPA in each band was selected to be measured and the

results are contained within the TUV UK test report. The output power measurements are contained within Section 1.3 of this report.

When we found the worst case scenarios for FDD2 and FDD5, we tested SAR on these worst-case subtests on our datacard: subtest 1 for FDD5 and subtest 5 for FDD2. Because these worst case limits are well below the 1.6W/kg limit, we are quite certain that all subtest configurations on HSUPA will stay below that limit! FCC can find the SAR results on page 9 of the TUV UK test report.