

FCC OET
Joe Dichoso
Kwok Chan

Jim Sponsler
Ericsson Inc.

Re: FCC ID AXATR-392-A2 (class II)

2-10-00

Correspondences: 11903,11698, 11904

731 Confirmation number: EA96292

Subject: Reply to the above 3 correspondences

This memo is in response to the three correspondences noted (11903,11698, 11904). The first section below deals with the 'power' concern and the remainder is in response to RF safety issues mentioned on correspondence 11698. If you have any questions, feel free to contact me. [Replies are in blue and are underlined within the body of the issues.](#)

[Power issue:](#)

11903/11904

The device proposes a software only change to deactivate the PCS operation. However, the output powers submitted do not agree with the original application. Please explain. An increase in output power requires a new application.

11698

1. This is a Class II Permissive change to include a variation of the original dual band (Part 22 & 24) device to operate under Part 22 only by firmware only and with no other changes. The original grant had 215 mW ERP for AMPS and TDMA modes for Part 22. The current Class II filing is requesting 220 mW ERP. Changes in output power would not qualify for Class II, should limit output to 215 mW ERP. The current filing is for Part 22 only but has included a Part 24 line item, indicating 546 mW EIRP. This is substantially different that what was previously granted (325 mW EIRP). Please clarify these accordingly.

[Reply: The declared power for the single band \(800 only\) mobile is identical to the original filing. I believe the confusion lies in the two SAR reports. The first SAR report lists a 'peak power nominal' value of 25.5dBm. The new SAR report accounts for the factory tolerances requested by Kwok and states a 'Maximum peak output power' of 25.75dBm. The difference is the factory tolerance of 0.25dBm. The only difference is the new report accounts for the factory tolerance. The listing of power on the grant, 215mw, is for both the dual band and single band mobile variants.](#)

[The current filing/grant lists both the Part 22 and Part 24, as the one grant will now cover both the single and dual band mobiles. This is what was agreed to by Frank Coperich, Rich Fabina and Ericsson.](#)

[Remainder of 11698 issues:](#)

[The following are RF safety issues only. A technical review will be done soon. Please submit the reply into the RF exposure info folder and Notify Kwok.](#)

Ericsson, EA 96292 (Class II) -

1. This is a Class II Permissive change to include a variation of the original dual band (Part 22 & 24) device to operate under Part 22 only by firmware only and with no other changes. The original grant had 215 mW ERP for AMPS and TDMA modes for Part 22. The current Class II filing is requesting 220 mW ERP. Changes in output power would not qualify for Class II, should limit output to 215 mW ERP. The current filing is for Part 22 only but has included a Part 24 line item, indicating 546 mW EIRP. This is substantially different that what was previously granted (325 mW EIRP). Please clarify these accordingly.

2. Section 3.1 of the SAR report references measurement uncertainty procedures submitted with a currently pending filing (EA 96056). SAR measurement uncertainty of up to 47% is indicated in the current filing for a K factor of 2. This filing indicates an offset of +15% but the referenced procedures indicates total offsets of more than 15%. Please clarify SAR compliance according to the highest measured SAR of 1.34 W/kg (1.39 W/kg claimed for maximum output) for this filing and address the measurement uncertainty issues, 47% claimed and 52% according to referenced procedures.

[Please see the responses below \(they are the same as the responses for EA 96056, since the questions are the same\).](#)

3. Measurement uncertainty and other SAR procedures for EA 96056, which is referenced in this filing should also be addressed for this filing (repeated here) -

(a) The measurement uncertainty information of sub-chapter 7 -

(i) the total phantom uncertainty does not compute to 10% as indicated, the 3% above it appears to be in error

[You are correct. This error has been corrected in the attachment.](#)

(ii) the offset indicated for phantom uncertainty and extrapolation+boundary effect sections are indicated as +/- offsets; offset errors are generally not bidirectional, please clarify

[This was an oversight. The offsets have been corrected to be positive.](#)

(iv) the "combined" and "expanded" uncertainty need to be re-computed

[We have re-computed them \(the final numbers are still the same, however, because the errors you found were typographical, not mathematical\).](#)

(v) for a typical DASY3 system, the offsets are positive which typically results in an expanded uncertainty of about -12% to +52% for a K factor of 2 (for 900 MHz band)

[At the July, 1998 IEEE SCC34 SC-2 meeting, Thomas Schmid and Niels Kuster provided an uncertainty estimate for the DASY3 system that gave a total expanded uncertainty of -12% to +52%, as you have indicated. This is what our table is based on.](#)

[However, since the July 1998 meeting, there have been some minor adjustments to this evaluation. In an e-mail from SPEAG dated November 5, 1999:](#)

["the uncertainty budget is practically the same as before, the only correction is that the total measurement uncertainty should be +/-10.2 \(not 10.1\) and we took away the +5% offset; that means that combined uncertainty will be +/- 16 \(+15% offset - from phantom\) resulting in +/- 32 \(+15%\) for k=2."](#)

[In further communication with SPEAG, they indicated that the +5% offset was taken away from the extrapolation and boundary effect. This is reflected in the attached revision. SPEAG has not made any further changes to this evaluation since then. That is how we arrived at a total expanded uncertainty \(K = 2\) of -17% to +47%.](#)

[It is worth mentioning that included in the uncertainty is "Uncertainty of covering the exposure of 80% of the entire user group" which, strictly speaking, is not measurement uncertainty. However, we decided to keep it in for completeness. If we neglect the "phantom uncertainty," the DASY3 measurement uncertainty becomes \$\pm 12.2\%\$ for \$K = 1\$, or \$\pm 24.4\%\$ for \$K = 2\$ \(with no offset\). This agrees with Niels Kuster's statements at the last IEEE SCC34 meeting that the DASY measurement uncertainty is approximately 25%.](#)

(vi) a number of the indicated standard uncertainty values are typically dependent on specific conditions and assumptions which have not been described or indicated, please address accordingly so that the provided uncertainty numbers are meaningful

In the new text, we have added a reference to the IEEE SCC34 SC-2 contribution of Thomas Schmid and Niels Kuster in July, 1998 meeting. I hope this is sufficient.

(vii) please also explain how the re-calculated uncertainty analysis would affect compliance for the worst case SAR results of 1.39 W/kg determined for this device.

Given that the measurement uncertainty (not including phantom uncertainty) is within $\pm 30\%$, the SAR numbers should be compared directly with the limit, as per a motion at the last IEEE SCC34 SC-2 meeting. Uncertainty is not added to the measured value in this case.

(b) FYI - the total amount (assuming it is weight) indicated in sub-chapter 2 section 3 for the tissue recipes appear to be incorrect.

The total amount is actually a volume, in liters (6.7 liters). If this is confusing, we can change it for future filings.

(c) FYI - sub-chapter 3 section 4, 10% is indicated; please note currently SCC-34 is proposing 5% which may affect your evaluation procedures.

We have updated the document to reflect SCC34 proposals.

(d) FYI - sub-chapter 5 section 4.1, 5 cm separation for testing push-to-talk device may not always be appropriate, it is dependent on the design and operating configuration of an individual device. Same page, first line in section 3.3, typo, "ne" should be "be"

For push-to-talk devices, this distance is specified in the user's manuals. That is where that number came from. If the number is not appropriate in a future product, we will certainly change it in the Measurement Specification.

The typo has been corrected in the new version.

4. FYI - SAR plots should occupy at least 3/4 of the page, descriptions of test parameters and conditions on existing plots are hardly readable. Plots that are too small or not readable will not be accepted for future filings.

These figures will be enlarged for future filings. I apologize for the inconvenience.

Proposed Grant Comment - Tested SAR compliance for device operating with (permanent) firmware that restricts its operations to Part 22 only with no other changes to the original dual band device. ?? Grantee must ensure device complies with all FCC requirements when subsequent firmware is loaded to reconfigure a device for single or dual band operations; or it is disallowed? Check with Frank on this ??

We discussed how to submit this request and what was required for submittal with both Frank and Rich. Both indicated all that was required was the SAR report, description of change and a request to modify the grant. If you have any questions, feel free to contact me- Jim Sponsler.