To: Kwok Chan 2-2-00
Joe Dichoso
FCC Application Processing Branch

Subject: Reply to RF safety issues

Re: FCC ID AXATR-395-A2
Applicant: Ericsson Inc
Correspondence Reference Number: 11570
731 Confirmation Number: EA96056
Date of Original E-Mail: 01/19/2000

Good day Kwok and Joe,

Our replies are denoted in blue and are underlined for ease of reference as the comments are within your noted issues.

EA 96056 -

1. The operators manual describes an external antenna connector on the back of the phone. Please clarify the types of external antennas that may be used for this phone. External antennas will need to satisfy MPE requirements of 2.1091. Depending on antenna gain and installation requirements, supporting information to qualify for MPE categorical exclusion for routine evaluation or MPE evaluations should be included for external antennas.

The connector on the back of the mobile is mainly used for testing purposes. Europe does a vehicle kit that utilizes this connector for connection to an external antenna. This external antenna is on the outside of the automobile and greater than 20cm from the user.

MPE limits are satisfied, since MPE limits are based on SAR limits (as per paragraph 3 of FCC 96-326). The SAR measurements provided in our report represent the worst case SAR exposure for a user.

2. With respect to section 1.3 of the SAR report and the test procedures included in the SAR report, please address the following:

(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 ±12.2% for K = 1, or ±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 that this is sufficient.

(vii) please also explain how the re-calculated uncertainty analysis would affect compliance for the worst case SAR results of 1.49 W/kg determined for this device.

Given that the measurement uncertainty (not including phantom uncertainty) is within ±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.

3. 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 in future filings. I apologize for the inconvenience.