

EMC Technologies Pty Ltd
ABN 82 057 105 549
57 Assembly Drive
Tullamarine Victoria Australia 3043

Ph: +613 9335 3333 Fax: +613 9338 9260 email: melb@emctech.com.au

FCC ID: EJE-WL0007 Date: 16<sup>th</sup> March 2004

EMC Reference: M040214, M040223

**Subject: Response to FCC Queries** 

1. Please supply Declaration of Conformity (DoC) form for the tablet PC.

*Please refer to required document attached.* The Mace LifeBook is the same as the unit tested to DoC requirements *in July 2003.* 

2. The antenna listed on Page 7 of the EMC report does not match the Part# in appendix M "Antenna Information". Please clarify.

This is a typographical error and has been corrected. Please refer to corrected report attached.

3. Please specify the label material.

The material is SS UPO and the label is glued to the product with permanent adhesive. It is the same label material and labelling method used as per our last approvals.

4. In Appendix A "Measurement Instrumentation" some of the equipment seems to be out of calibration. Have they been used during testing. Please clarify.

Testing began before the calibration due dates. Equipment was all in cal. when testing began.

5. In the SAR report the antenna type is shown as Monopole Ceramic chip YCE-5008. This doesn't match the antenna information Appendix M. Please clarify.

This is a typographical error and should read Monopole Dielectric Antenna, Part No DA120D-2545M-FJ01.

6. The conducted power readings listed in the EMC report and SAR report are significantly different from each other. Also the ratings listed on Page 4 of the SAR report is around 6dB higher than what's been measured (Section 2.3 - Page 5). Has the device not been configured for maximum power during SAR test? This power difference is a major concern. Please clarify.

The EUT was configured for maximum power setting - 802.11b = 18 dBm and 802.11g = 15 dBm and the following tests were performed:

As required by SAR Test Procedures, an Average Power measurement is required. An Average Power meter was used to measure the Average Power at the Antenna (source point) port.

To address your query:

a) If Average Power measured for both EMC & SAR, then the power levels would be the same

For the same tune up procedure used.

The power setting on the EUT was set to maximum rated peak (internally software limited maximum) – 802.11b = 18 dBm & 802.11g = 15 dBm for SAR AND EMC tests.

This was confirmed by performing the conducted measurements at the antenna port before and after the SAR tests.

Regarding the SAR report, the ratings listed on page 4 are the maximum peak power output as advised by the manufacturer. The conducted output power table in section 2.3 lists the actual measured "average" power and therefore is different to the theoretical peak value. The laptop was configured for maximum rated output power for all SAR tests.

7. Please supply a description/data sheet of probe measurement errors and definitions. Probe calibration sheet does not address any probe measurement errors.

See below data sheet for probe. A list of the probe errors can be found in table 16 "Uncertainty budget for DASY4". These are the probe errors defined by the manufacturer and are listed as uncertainty components (E2.1-E2.8 and E6.2-E6.3). The definitions for these errors can be found in extract from IEEE P1528 (attached).

## ET3DV6 / ET3DV6R ISOTROPIC E-FIELD PROBE FOR DOSIMETRIC MEASUREMENTS

**Construction** Symmetrical design with triangular core

Built-in optical fiber for surface detection system (ET3DV6

only)

Built-in shielding against static charges

PEEK enclosure material (resistant to organic solvents, e.g.,

DGBE)

**Calibration** Basic Broad Band Calibration in air: 10-3000 MHz

Conversion Factors (CF) for HSL 900 and HSL 1800

Additional CF for other liquids and frequencies upon request

Frequency 10 MHz to 3 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)

**Directivity**  $\pm$  0.2 dB in HSL (rotation around probe axis)

± 0.4 dB in HSL (rotation normal to probe axis)

**Dynamic Range** 5  $\mu$ W/q to > 100 mW/q; Linearity:  $\pm$  0.2 dB

**Optical Surface Detection**  $\pm$  0.2 mm repeatability in air and clear liquids over diffuse

reflecting surfaces (ET3DV6 only)

**Dimensions** Overall length: 330 mm (Tip: 16 mm)

Tip diameter: 6.8 mm (Body: 12 mm)

Distance from probe tip to dipole centers: 2.7 mm

**Application** General dosimetric measurements up to 2.5GHz

Compliance tests of mobile phones

Fast automatic scanning in arbitrary phantoms

8. Please specify probe tip diameter.

The probe tip diameter is 6.8mm (see attached data sheet)

9. Plot 5 of the SAR report shows some hot spots in Arm Held Position with AUX antenna during prescan. When this plot is compared to Plot 1, it actually seems to be worse. Please justify the reason why this configuration has not been investigated during final SAR measurements.

This configuration was investigated but was not included in the SAR report because the scans were performed with a zoom cube designated for 5GHz measurements (7x7x8). We took it upon ourselves to repeat only the worst-case SAR measurements with the traditional 7x7x7 cube (those listed in the SAR report) and found that there was little difference between the two (< 9%). These are the levels that appear in the report. Our supplier (SPEAG) has since confirmed that there is not a high error between the two cubes.

These additional scans can be provided if necessary to show the low SAR values encountered.