

### **Tissue Parameters**

The recipes for the SAR liquids are not included in this report. The development of these liquids required significant time and expense from Cetecom Inc. We have experimented with some recipes that are being published and find that these are not valid recipes. Other companies are marketing 5 GHz SAR liquids, but will not divulge the recipes, even to their paying customers. Based on the competitiveness in this area we would prefer to keep our 5 GHz SAR liquid recipes confidential.

#### **5200 MHz Head liquid:**

Di-electric constants measured on 6/13/05. SAR measurements were made within 24 hours of the measurement of liquid parameters.

| <b>Freq.</b><br><b>(MHz)</b> | <b>Rel.</b><br><b>Perm.</b> | <b>Condy</b><br><b>(S/m)</b> |
|------------------------------|-----------------------------|------------------------------|
| 5250                         | 36.36                       | 5.01                         |

#### **5200 MHz Body liquid:**

Di-electric constants measured on 6/13/05. SAR measurements were made within 24 hours of the measurement of liquid parameters.

| <b>Freq.</b><br><b>(MHz)</b> | <b>Rel.</b><br><b>Perm.</b> | <b>Condy</b><br><b>(S/m)</b> |
|------------------------------|-----------------------------|------------------------------|
| 5180                         | 48.07                       | 5.393                        |
| 5260                         | 47.66                       | 5.462                        |
| 5320                         | 47.70                       | 5.470                        |

#### **5800 MHz Head liquid:**

Di-electric constants measured on 6/15/05. SAR measurements were made within 24 hours of the measurement of liquid parameters.

| <b>Freq.</b><br><b>(MHz)</b> | <b>Rel.</b><br><b>Perm.</b> | <b>Condy</b><br><b>(S/m)</b> |
|------------------------------|-----------------------------|------------------------------|
| 5800                         | 35.57                       | 5.41                         |

#### **5800 MHz Body liquid:**

Di-electric constants measured on 6/15/05. SAR measurements were made within 24 hours of the measurement of liquid parameters.

| <b>Freq.</b><br><b>(MHz)</b> | <b>Rel.</b><br><b>Perm.</b> | <b>Condy</b><br><b>(S/m)</b> |
|------------------------------|-----------------------------|------------------------------|
| 5745                         | 47.39                       | 6.435                        |
| 5765                         | 47.01                       | 6.431                        |
| 5825                         | 46.91                       | 4.433                        |

### **Dielectric measurement equipment verification**

Prior to measuring the dielectric parameters of the SAR liquids, reference liquids were measured. The conductivity and permittivity of Propanol and De-ionized water was measured and compared to published data. All of these measurements were within  $\pm$  1.5% of the published values.

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Appendix C Misc.

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**Environment: 6/13/05 & 6/15/05:**

Temperature: 20.1 °C – 23.9°C

Humidity: 45% \_ 55 %

### Test Equipment

| Instrument description        | Supplier / Manufacturer  | Model         | Serial No. | Calibration (date) | Calibration Due (date) |
|-------------------------------|--|---------------|------------|--------------------|------------------------|
| Bench top Robot               | Mitsubishi supplied by IndexSAR  | RV-E2         | EA1030108  | N/A                | N/A                    |
| SAM Phantom                   | Upright shell phantom made by Antennessa digitized and mounted by IndexSAR | SAM           | 03FT26     | 04/03              | N/A                    |
| Flat Phantom                  | IndexSAR   | HeadBox_Spout | N/A        | N/A                | N/A                    |
| Software                      | IndexSAR   | SARA2 v0.420  | N/A        | N/A                | N/A                    |
| 5200 MHz Head Tissue Simulant | Cetecom Inc.   | 5200 Head     | N/A        | 6/13/2005          | N/A                    |
| 5800 MHz Body Tissue Simulant | Cetecom Inc.   | 5800 Head     | N/A        | 6/15/2005          | N/A                    |
| 5200 MHz body Tissue Simulant | Cetecom Inc.   | 5200 Head     | N/A        | 6/13/2005          | N/A                    |
| 5800 MHz body Tissue Simulant | Cetecom Inc.   | 5800 Head     | N/A        | 6/15/2005          | N/A                    |
| 5250 MHz Dipole               | IEEE 1528 design   | 5250          | 001        | 07/20/2004         | 07/20/2005             |
| 5775 MHz Dipole               | IEEE 1528 design   | 5775          | 001        | 07/20/2004         | 07/20/2005             |
| Directional coupler           | Werlatone  | C6529         | 11249      | N/A                | N/A                    |
| RF Amplifier                  | Vectawave  | VTL5400       | N/A        | N/A                | N/A                    |
| SAR Probe                     | IndexSAR   | IXP-050       | S/N 0123   | 10/07/2004         | 10/07/2005             |
| Probe amplifier               | IndexSAR   | IXA-010       | S/N 043    | N/A                | N/A                    |
| Thermometer                   | Control Company  | 4039          | 20410549   | 11/20/2001         | 11/20/2005             |
| Dielectric Measurement Kit    | IndexSAR   | Di-Line       | N/A        | N/A                | N/A                    |