

In reply to your recent questions:

**A1.** This is a portable device. Therefore, SAR report was required. Please find the revised ID Label uploaded to AmericanTCB.com website per your request.

**A2.** This product has been tested for SAR and found to meet the requirements with no distance stipulation (EUT in contact with body tissue). Since the product inherently meets the RF exposure requirements, no users notice warning of exposure hazard is required.

**A3.** Probe calibration data

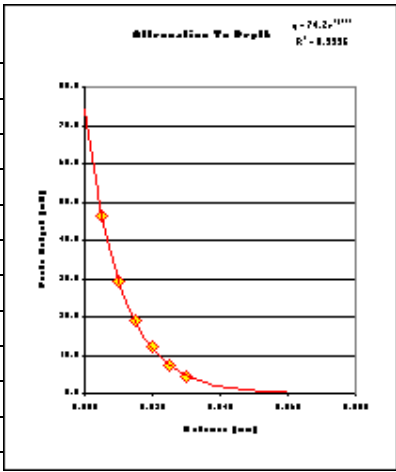
**Brain Tissue Calibration**

General Information		
Type	ETR	"ETR" for E-field triangular, "EI" for E-field I-Beam
M/N	ETR-UT	
S/N	0200-1	
Sensor Size	2.0	[mm]
Sensor Offset	2.00	[mm]
Sensor Factor to Power density in the air, $\square_{Pd}$	10.8	[mV/(mW/cm <sup>2</sup> )]
Sensor Factor to $ E ^2$ in the air, $\square_{E2}$	0.002865	[mV/(V/m) <sup>2</sup> ]

Freespace calibration		Calibration Date:	September 23, 2002
Uniform Field Generating Method	Waveguide	"TEM cell", "Waveguide" or "Horn Antenna"	
Frequency, f	1900	[MHz]	
Power Density, Pd	5	[mW/cm <sup>2</sup> ]	
Probe Insertion Depth	60	[mm]	
Probe Incident Angle to E-Field	90	[°]	
Max. Probe Output for Channel 1, P <sub>Omax1</sub>	3888		
Amplifier Setting 1, AS1	0.00925112		
Max. Probe Output for Channel 2, P <sub>Omax2</sub>	4248		
Amplifier Setting 2, AS2	0.00846713		
Max. Probe Output for Channel 3, P <sub>Omax3</sub>	3227		
Amplifier Setting 3, AS3	0.01114607		

Calibration with calculable field in waveguide		Calibration Date:	March 7, 2003
Frequency, f	1900	[MHz]	
Conductivity, $\sigma'$	1.43	[S/m]	
Dielectric Constant, $\epsilon$	40.9		
Penetration Depth from Tissue calibration, $\delta'$	0.024104	[m]	
Mass Density, $\rho$	992	[Kg/m <sup>3</sup> ]	
Specific Heat Capacity, c	3602	[J/Kg°C]	
Width of cross-section of Waveguide, a	0.109000	[m]	
Height of cross-section of Waveguide, b	0.054700	[m]	

Tissue Temperature in the lossy waveguide	21.0	[°C]
Input Power Measurement, P <sub>fw</sub> - P <sub>bw</sub>	0.222	[W]
Return Loss, better than	-33.1	[dB]
Probe Output [mV] at 5mm, PO(5)	46.2	[mV]
Probe Output [mV] at 10mm, PO(10)	29.5	[mV]
Probe Output [mV] at 15mm, PO(15)	19.1	[mV]
Probe Output [mV] at 20mm, PO(20)	12.0	[mV]
Probe Output [mV] at 25mm, PO(25)	7.5	[mV]
Probe Output [mV] at 30mm, PO(30)	4.6	[mV]
Conversion Factor, □	5.372	
Conversion Factor, CF (Obsolete)	1.001	[W/Kg/(mW/cm <sup>2</sup> )]



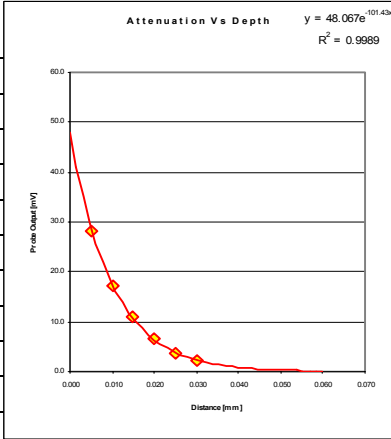
### Muscle Tissue Calibration

General Information		
Type	ETR	"ETR" for E-field triangular, "EI" for E-field I-Beam
M/N	ETR-UT	
S/N	0200-1	
Sensor Size	2.0	[mm]
Sensor Offset	2.00	[mm]
Sensor Factor to Power density in the air, □ <sub>Pd</sub>	10.8	[mV/(mW/cm <sup>2</sup> )]
Sensor Factor to  E  <sup>2</sup> in the air, □ <sub>E2</sub>	0.002865	[mV/(V/m) <sup>2</sup> ]

Freespace calibration		Calibration Date:	September 23, 2002
Uniform Field Generating Method	Waveguide	"TEM cell", "Waveguide" or "Horn Antenna"	
Frequency, f	1900	[MHz]	
Power Density, Pd	5	[mW/cm <sup>2</sup> ]	
Probe Insertion Depth	60	[mm]	
Probe Incident Angle to E-Field	90	[°]	
Max. Probe Output for Channel 1, POmax1	3888		
Amplifier Setting 1, AS1	0.00925112		
Max. Probe Output for Channel 2, POmax2	4248		
Amplifier Setting 2, AS2	0.00846713		
Max. Probe Output for Channel 3, POmax3	3227		
Amplifier Setting 3, AS3	0.01114607		

Calibration with calculable field in waveguide		Calibration Date:	March 8, 2003
Frequency, f	1900	[MHz]	
Conductivity, σ'	1.59	[S/m]	
Dielectric Constant, ε	53.5		
Penetration Depth from Tissue calibration, δ'	0.024689	[m]	

Mass Density, $\rho$	992	[Kg/m3]
Specific Heat Capacity, c	3602	[J/Kg/°C]
Width of cross-section of Waveguide, a	0.109000	[m]
Height of cross-section of Waveguide, b	0.054700	[m]
Tissue Temperature in the lossy waveguide	21.0	[°C]
Input Power Measurement, Pfw - Pbw	0.178	[W]
Return Loss, better than	-31.3	[dB]
Probe Output [mV] at 5mm, PO(5)	28.1	[mV]
Probe Output [mV] at 10mm, PO(10)	17.3	[mV]
Probe Output [mV] at 15mm, PO(15)	10.9	[mV]
Probe Output [mV] at 20mm, PO(20)	6.6	[mV]
Probe Output [mV] at 25mm, PO(25)	3.8	[mV]
Probe Output [mV] at 30mm, PO(30)	2.2	[mV]
Conversion Factor, $\square$	4.378	
Conversion Factor, CF (Obsolete)	1.368	[W/Kg/(mW/cm2)]



**A4.** Calculable waveguide calibration procedure specified in IEEE 1528 standards was employed to calibrate the specific probe in the solution at 1.9 GHz. Thermal transfer calibration procedure using dipole is only applied to the application below 1 GHz. For the calculable waveguide calibration result, please refer to page 68 in SAR report and Answer3 above. The reference verification dipole specification (dimension and return loss at target frequency) is listed at page 69 in SAR report as well.

**A5.** The Crest Factor is a parameter which describes the SAR systems ability to measure signals that have various peak to RMS ratios while still remaining within the system specifications. The crest factor is not provided for the 3D-EMC system and a verification test was carried out to determine that the SAR system is responding to the duty cycle waveform as an averaging system. A uniform field within a TEM cell is used to compare the output of the SAR system of a CW signal at the frequency of interest, with a pulse modulated carrier using the same pulse width and repetition rate as the EUT previously tested at 12.5%. An HP 437A Peak power meter is used to set the same peak power in both test conditions. The 3D-EMC system allows for a real-time monitoring of all amplifier channels. The summed output of the three amplifier channels from the probe is directly proportional to the  $|E|^2$  which is also directly proportional to SAR according to the equation:

$$SAR = \frac{\sigma \cdot |E|^2}{\rho}$$

The measured results from the monitor are:

SAR System Output for CW = 39.094

SAR System Output for 12.5% = 4.788

The ratio of the CW to Duty Cycle Field =  $4.788/39.094 \cdot 100\% = 12.3\%$

The above test verifies that the SAR system is correctly averaging the pulsed carrier and that the measured SAR values are time based average values.

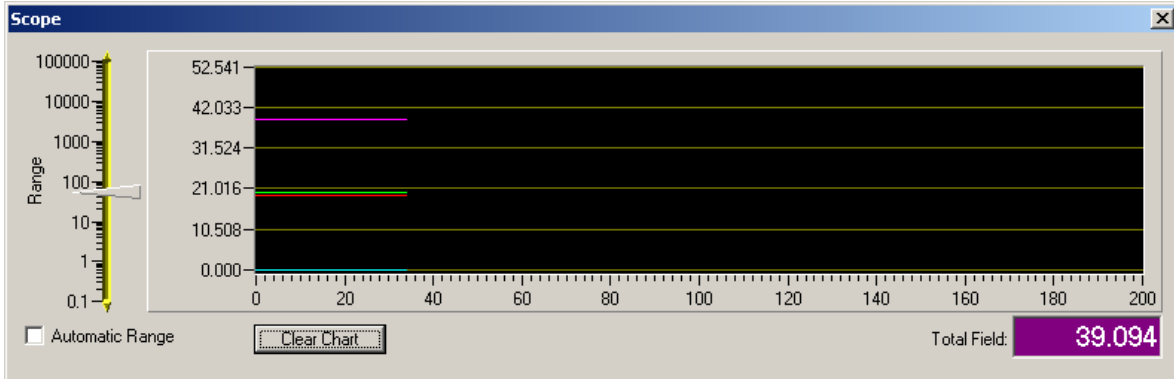


Figure 1. Amplifier channel real-time output monitor of SAR system for a CW signal

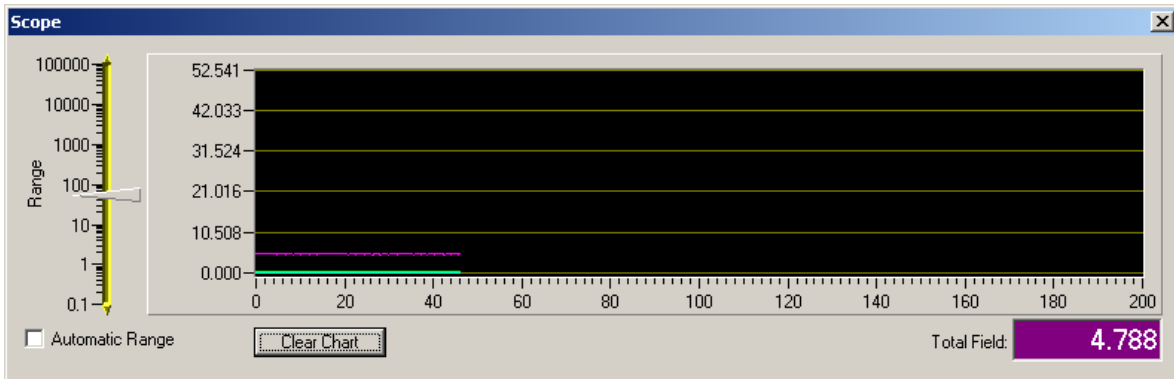


Figure 2. Amplifier channel real-time output monitor of SAR system for a 12.5% Pulse modulated Signal

**A6.** Refer to revised report for detailed conducted power measurements.

**A7.** The band edge requirement of 24.238 was demonstrated to be in compliance on the original grant for the RF modem FCC ID: O9EM2113.