



---

## **Response to TCB Correspondence**

### **Dosimetric Assessment of the Portable Device Wolfgang, Chi Mei Communication Systems, Inc. (FCC ID: QDJ-0208WAG01) According to the FCC Requirements**

October 18, 2002  
**IMST GmbH**  
**Carl-Friedrich-Gauß-Str. 2**  
**D-47475 Kamp-Lintfort**

Customer  
7 layers AG  
Borsigstr. 11  
D-40880-Ratingen

This response shall not be reproduced except in full without the written  
approval of the testing laboratory.

## 7 layers AG Ratingen received following TCB comment concerning SAR and radiated power measurements:

The report implies that the EIRP measurements were made at 7Layers, possibly at a different time than the SAR measurements. If the RF power measurements were performed in conjunction with the SAR test (either before, after or during) then please explain this and the issue will be clear. If the EIRP measurements were performed at a different time than the SAR measurements then we would need some level of assurance that the RF power of the phone was at the highest power. This could be accomplished by performing one SAR measurement along with an EIRP measurement which should be comparable to the EIRP and one of the SAR scans from the original report.

## Please find attached our responds to above comment:

To avoid additional delay we repeated the measurement of the worst case with the same sample:

Date of measurement	Phantom Configuration	Test Position	Radiated Power EIRP[dBm]	SAR <sub>1g</sub> [W/kg] (Drift[dB])	Temperature	
				Channel 661 1880.00 MHz	Ambient [° C]	Liquid [° C]
August 28, 2002	right	cheek	30.6	0.591 [-0.07]	23.4	21.1
October 17, 2002	right	cheek	30.8	0.614 [-0.16]	22.0	20.9

Table 1: Measured worst case head phantom results for PCS 1900 for the Chi Mei Communication Systems, Inc. Wolfgang.

## 1 Appendix

### 1.1 Administrative Data

Date of validation: 1900 MHz, Head: October 17, 2002  
Date of measurement: PCS 1900, Head: October 17, 2002

### 1.2 Device under Test and Test Conditions

MTE: Chi Mei Communication Systems, Inc. Wolfgang, Prototype  
Date of receipt: October 17, 2002  
IMEI: 350390010000150  
FCC ID: QDJ-0208WAG01  
Equipment class: Portable device  
Power Class (PCS 1900): Talk mode: 1, tested with power level 0  
GPRS mode: Measured values multiplied by 2 to simulate GPRS Class 10 due to the unavailability of the GPRS software  
RF exposure environment: General Population/Uncontrolled

Power supply:	Internal Battery; 3.7 V				
Antenna:	Antenna Typ: Integrated				
Measured Standards:	PCS 1900				
Method to establish a call:	PCS 1900: Basestation simulator, using the air interface				
Modulation:	GMSK				
Crest Factor:	PCS 1900: 8				
TX range:	PCS 1900 : 1850.2 MHz – 1909.8 MHz				
RX range:	PCS 1900 : 1930.2 MHz – 1989.8 MHz				
Used TX Channels:	PCS 1900: high: ch. 810				
Used Phantom:	SAM Twin Phantom V4.0, as defined by the IEEE SCC-34/SC2 group and delivered by Schmid & Partner Engineering AG				

### 1.3 Material Parameters

For the measurement of the following parameters the HP 85070B dielectric probe kit is used, representing the open-ended coaxial probe measurement procedure.

Frequency		$\epsilon_r$	$\sigma$ [S/m]	Temperature	
				Ambient [° C]	Liquid [° C]
1900 MHz (Head)	Recommended Value	$40.00 \pm 2.00$	$1.40 \pm 0.07$	20.0 - 26.0	-
	Measured Value	$38.30 \pm 1.90$	$1.46 \pm 0.15$	21.8	20.9

Table 2: Parameters of the tissue simulating liquids.

### 1.4 Simplified Performance Checking

The simplified performance check was realized using the dipole validation kit. The input power of the dipole antenna was 250 mW (cw signal) and it was placed under the flat part of the SAM phantom. The results are listed in the Table 3 and shown in Fig. 1. The target values were adopted from the manufactures calibration certificate.

Frequency		$SAR_{1g}$ [W/kg]	$\epsilon_r$	$\sigma$ [S/m]	Temperature	
					Ambient [° C]	Liquid [° C]
1900 MHz (Head)	Target Value	10.8	39.20	1.47	20.0 - 26.0	-
	Measured Value	11.5	38.30	1.46	21.8	20.9

Table 3: Validation results, 1900 MHz.

**Dipole 1900 MHz**  
SAM PSC1900; Flat  
Probe: ET3DV6 - SN1579; ConvF(5.20,5.20,5.20); Crest factor: 1.0; Brain 1900MHz:  $\sigma = 1.46 \text{ mho/m}$   $\epsilon_r = 38.3$   $\rho = 1.00 \text{ g/cm}^3$   
Cubes (2): Peak:  $22.1 \text{ mW/g} \pm 0.01 \text{ dB}$ , SAR (1g):  $11.5 \text{ mW/g} \pm 0.01 \text{ dB}$ , SAR (10g):  $5.79 \text{ mW/g} \pm 0.00 \text{ dB}$ , (Worst-case extrapolation)  
Penetration depth:  $7.8 (7.4, 8.7) [\text{mm}]$   
Powerdift:  $-0.10 \text{ dB}$   
October 17, 2002; Ambient Temperature:  $21.8^\circ\text{C}$ ; Liquid Temperature:  $20.9^\circ\text{C}$ ; Liquid:  $16 \text{ cm}$

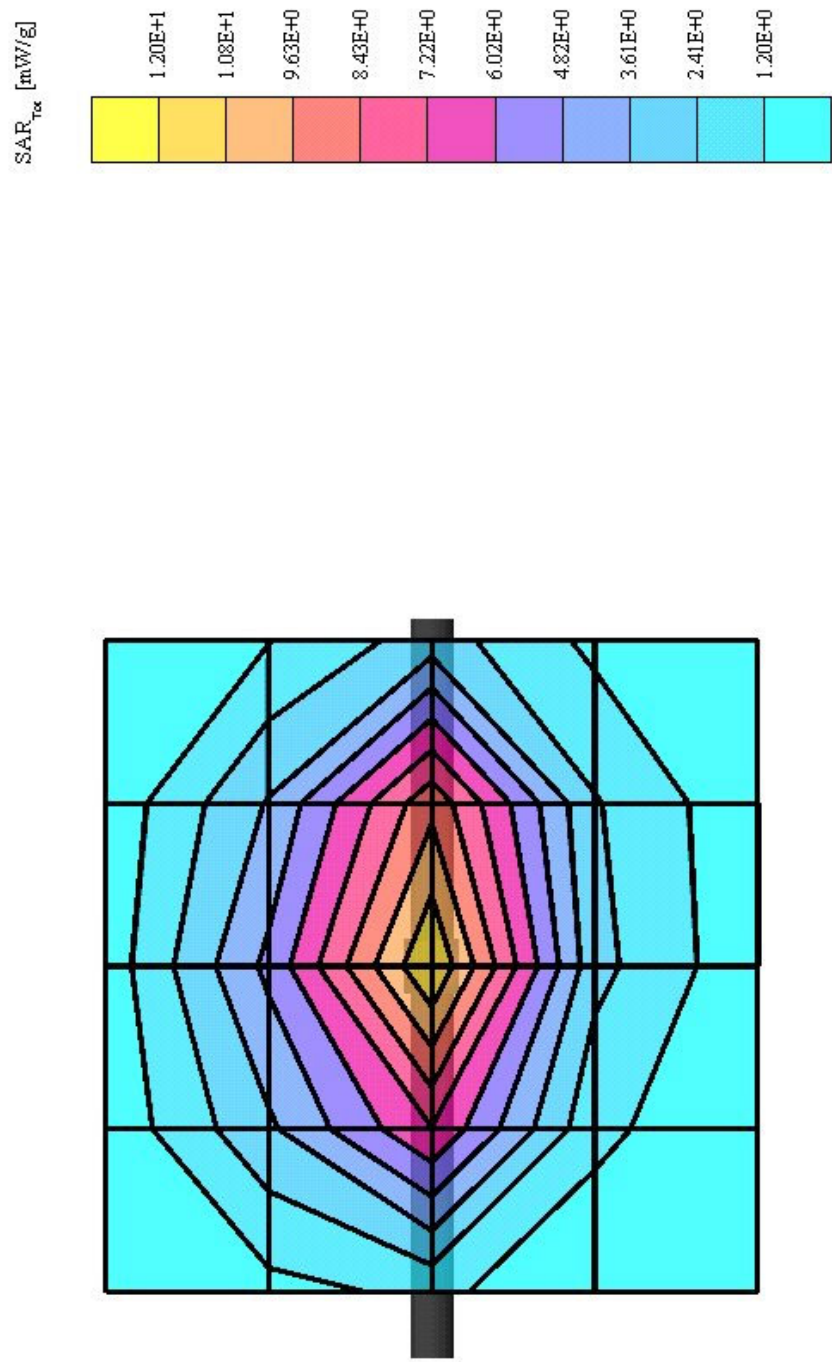


Fig. 1: Validation measurement 1900 MHz Head, coarse grid.

Chi Mei Wolfgang

SAM PCS 1900; Right Hand

Probe: ET3DV6 - SN1579, ConvF(5.20,5.20); Crest factor: 8.0; Brain 1900MHz:  $\sigma = 1.46$  mho/m  $\epsilon_r = 38.3$   $\rho = 1.00$  g/cm<sup>3</sup>

Cube 7x7x7: Peak: 1.19 mW/g, SAR (1g): 0.614 mW/g, SAR (10g): 0.298 mW/g, SAR (Worst-case extrapolation)

Penetration depth: 8.0 (7.7, 8.6) [mm]

Powerdrift: -0.16 dB

October 17, 2002; Ambient Temperature: 22.0 °C; Liquid Temperature: 20.9 °C; Liquid: 16 cm

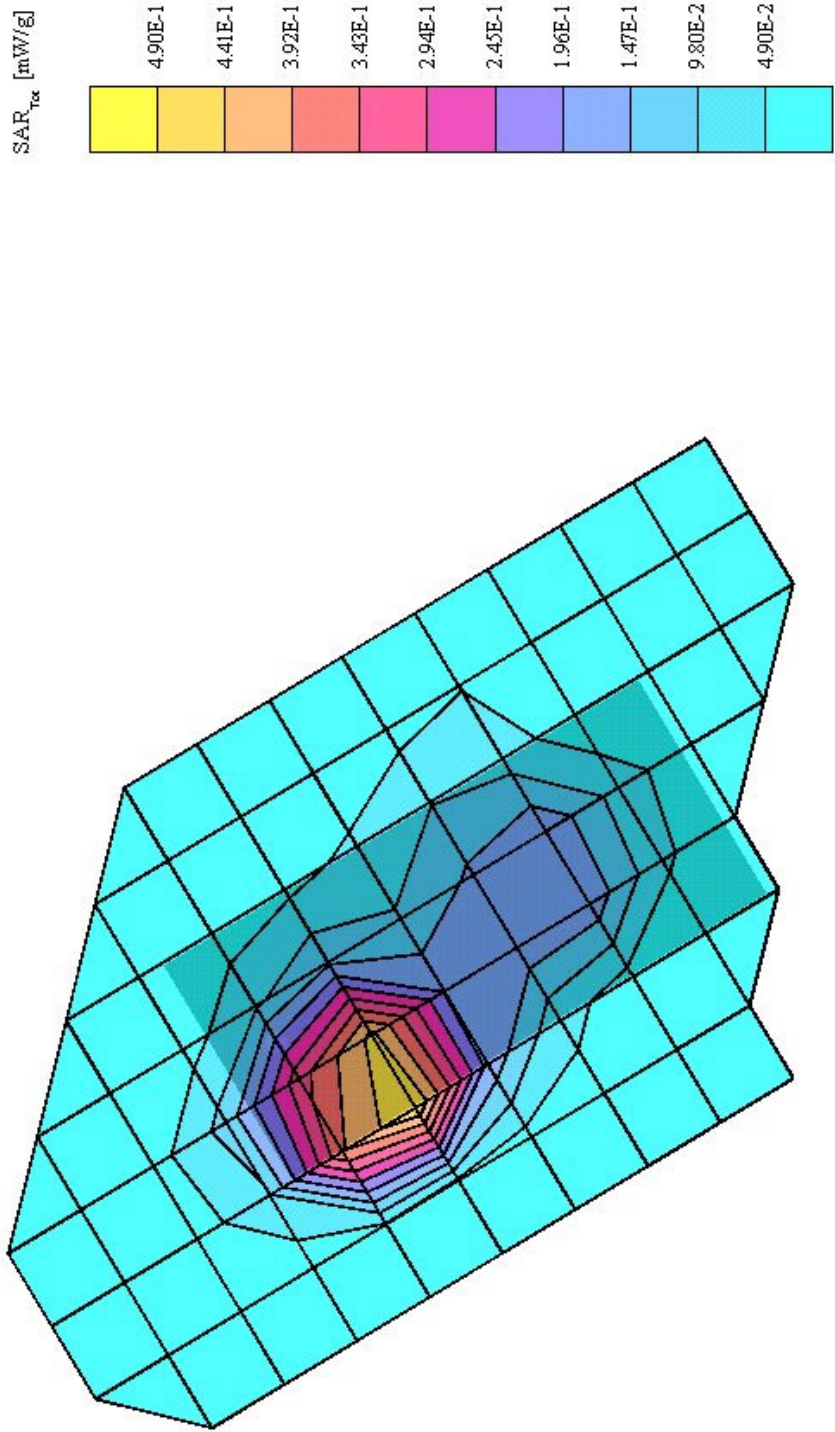


Fig. 2: Repeated worst case measurement 1900 MHz Head, right head, tilted position.