

**Assessment Notes by BABT as TCB for the Symbol Technologies Inc MC9002D  
Mobile Computer.**

**For Symbol Technologies Inc. under FCC ID number H9PMC9002D**

**BABT file number US/000069**

I have reviewed the TÜV-PS SAR test report WS611528-001 issue 3.01 in respect of the above product and I have the following comments:

The expanded measurement uncertainty is shown on page 16 of the reports at 21.10%, which is acceptable for this kind of measurement. The head and body simulant fluids were correctly calibrated within 5% of the target values and the measurements were taken within 100MHz of the calibrated frequency of the fluids.

**Important note to FCC reviewer:**

The device is a portable computer intended to be normally hand-held and used for data entry applications. The device can also be used with a headset. The device incorporates a GSM Radio and is a sub-equipped version of the H9P9062B to which the above report refers. The testing programme adequately reflects this complexity and was performed using both head and body (box) phantoms and includes a representative set of headset and body-worn test configurations.

Summary of highest measured SAR Values in Abnormal Positions

Band	Position	Channel	Frequency (MHz)	Max Spot SAR (W/kg)	1g SAR (W/kg)	SAR drift dB	Area Scan (Figure #)
GSM/GPRS 900MHz	Rear to Phantom in Holster *	124	914.8	0.190	0.176	-0.070	Figure 21
GSM/GPRS 1800MHz	Rear to Phantom in Holster *	885	1784.8	0.59	0.462	0.243	Figure 25
GSM 1900MHz	Rear to Phantom in Holster *	661	1880.0	1.06	0.592	-0.030	Figure 29
<b>Limit for General Population (uncontrolled exposure) 1.6 W/kg (1g)</b>							
<b>* Note these are worse case results in a position not designated for normal use.</b>							

Summary of highest measured SAR Values in Normal Positions

Band	Position	Channel	Frequency (MHz)	Max Spot SAR (W/kg)	1g SAR (W/kg)	SAR drift dB	Area Scan (Figure #)
GSM/GPRS 900MHz	LCD to Phantom in Holster	37	897.4	0.05	0.046	-0.270	Figure 18
GSM/GPRS 1800MHz	LCD to Phantom in Holster	885	1784.8	0.02	0.020	0.00	Figure 24
GSM 1900MHz	LCD to Phantom in Holster	661	1880.0	0.01	0.012	0.00	Figure 27
Limit for General Population (uncontrolled exposure) 1.6 W/kg (1g)							
These figures are worst case in normally designated position.							

**Justification:**

The maximum measured SAR value for the GSM1900 is obtained at 1880.0 MHz and is 0.592W/kg for 1g averaging. This is less than the limit for the general population of 1.6W/kg averaged over 1g. This was obtained under the worst case positioning in the holster, which is not designated for normal use. Also it should be noted that these results are obtained under CW mode working which will not occur in practice.

The device will normally be hand-held but could be used with a headset. Measurements results for headset use are not shown but were found to be all below the noise floor. No special training is required to use the device to limit RF exposure therefore this equipment has been tested for general population usage. When carrying the device the user will either hand carry the equipment or use a belt-clip, which contains metal parts and maintains a distance of 4.0cm from the user's body. It is viewed that this device DOES MEET the SAR requirements for a body-worn device for use by the general population even allowing for worst-case measurement uncertainties. Appropriate Grant conditions have been applied to this submission.

I confirm that I have undergone SAR awareness training by the FCC at the TCB Council workshops in August 2001, February 2002, April 2002, October 2002 and May 2004.



Alan Binks  
 Certification Manager, BABT  
 6<sup>th</sup> August 2004