ITS Intertek Testing Services
ETL SEMKO

Specific Absorption Rate (SAR) Test Report

for

High Tech Computer Co.

on the

Pocket PC with Wireless Mobile Phone
Model Number: HTC Wallaby PW20
FCC ID: NM8SN

Test Report: 30179772
Date of Report: April 24, 2002
Revised: June 20, 2002
Revised: August 9, 2002

Job #: 3017977
Date of Test: January 19, 2002

Total No of Pages Contained in this Report: 46

Tested by:	Suresh Kondapali
Reviewed by: David Chernomordik	David Chernomordik, Ph.D., EMC Technical Manager

Review Date: 8/9/02

Intertek Testing Services NA, Inc.
1365 Adams Court, Menlo Park, CA 94025
Telephone 650-463-2900 Fax 650-463-2910 Home Page www.etlsemko.com

TABLE OF CONTENTS

High Tech Computer Co., Model No: HTC Wallaby PW20 Date of Test: January 19, 2002
FCC ID: NM8SN

STATEMENT OF COMPLIANCE

The High Tech Computer Co. sample device, model # HTC Wallaby PW20, FCC ID: NM8SN was evaluated in accordance with the requirements for compliance testing defined in FCC OET Bulletin 65, Supplement C (Edition 01-01). Testing was performed at the Intertek Testing Services facility in Menlo Park, California.

For the evaluation, the dosimetric assessment system DASY3 was used. The phantom employed was the "Generic Twin Phantom". The total uncertainty for the evaluation of the spatial peak SAR values averaged over a cube of 1g tissue mass had been assessed for this system to be ?23.5%.

The device was tested at their maximum output power declared by the High Tech Computer Co.

In summary, the maximum spatial peak SAR value for the Sample device averaged over 1g for left-hand and right-hand usage was found to be:

Phantom	**SAR_{1g}, mW/g**
Left-hand Cheek Position	1.13 mW/g.

In conclusion, the tested Sample device was found to be in compliance with the requirements defined in OET Bulletin 65, Supplement C (Edition 01-01) for head configurations.

1.0 JOB DESCRIPTION

1.1 Client Information

The HTC Wallaby PW20 has been tested at the request of:

Company: High Tech Computer Co.
9F, 6-3, Ban-Chian RD., Hsin-Tien
Taipei, Taiwan
China

Name of contact: Mr. Andy Hsu
Telephone: 886-2-89724138 Ext 8390
Fax: 886-2-89124136

1.2 Equipment under test (EUT)

Product Descriptions:

Equipment	Dual Band Cell Phone		
Trade Name	Wallaby	P/N.	HTC Wallaby PW20
FCC ID	FCC ID: NM8SN	S/N No.	Not Labeled
Category	Portable	RF Exposure	Uncontrolled Environment
Frequency Band (uplink)	1850 – 1910 MHz	System	GSM

EUT Antenna Description			
Type	Monopole	Configuration	Fixed
Dimensions	12.5 mm	Gain	-2 dBi
Location	Right Side		

Use of Product: The PW20 is a wireless phone with data link for GPRS mode and support E-GSM mode for 900/1800.

Manufacturer: High Tech Computer Co.

Production is planned: [X] Yes, [ ] No

EUT receive date: August 21, 2001

EUT received sample: Good working condition prototype. As declared by High Tech Computer Co. the device tested is identical to the production units.

Test start date: January 19, 2002

Test end date: January 19, 2002

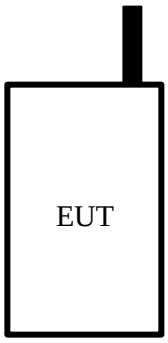
1.3 Test Plan Reference

FCC Rule: Part 2.1093, FCC OET Bulletin 65, Supplement C (Edition 01-01)

1.4 System Test Configuration

1.4.1 System Block Diagram & Support equipment

The diagram shown below details test configuration of the equipment under test.



No Support Equipment was used. The test sample was operated in a test mode that allows control of the transmitter without the need to place actual phone calls. For the purposes of this test the device is commanded to test mode and manually set to the proper channel, transmitter power level and transmit mode of operation. The device was then placed in the SAR Measurement System with a fully charged battery.

1.4.2 Test Positions for Head

The HTC WALLABY PW20 was configured for testing in a typical fashion (as a customer would normally use it), and in the confines as outlined in C95.1 (1992) and Supplement C of OET 65 (2001). The HTC WALLABY PW20 was placed against the head phantom in 2 test positions as detailed in Figures 1 and 2 below.

Test Configuration for SAR

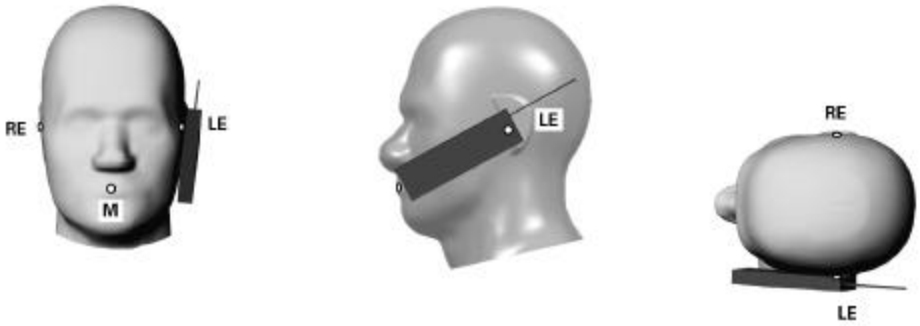


Figure 1 – Phone position 1, "cheek" or "touch" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated.

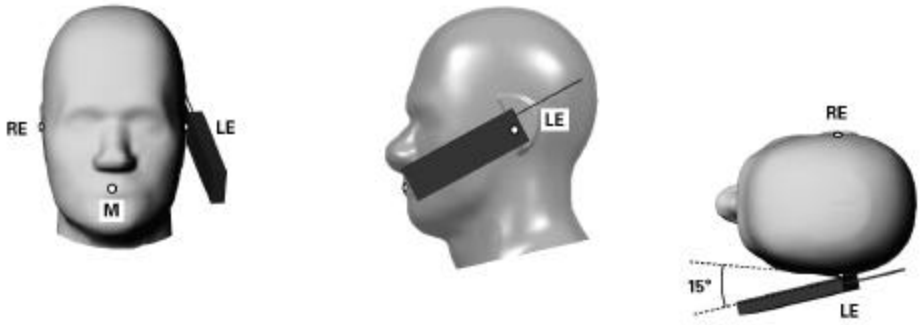


Figure 2 – Phone position 2, "tilted" position. The reference points for the right ear (RE), left ear (LE) and mouth (M), which define the reference plane for phone positioning, are indicated.

1.4.3 Positioning Procedure

The EUT was positioned in a normal operating position with the "test device reference point" located along the "vertical centerline" on the front of the device aligned to the "ear reference point". The "test device reference point" is located at the same level as the center of the earpiece region. The "vertical centerline" is bisecting the front surface of the handset at its top and bottom edges (see Figure 3a and 3b).

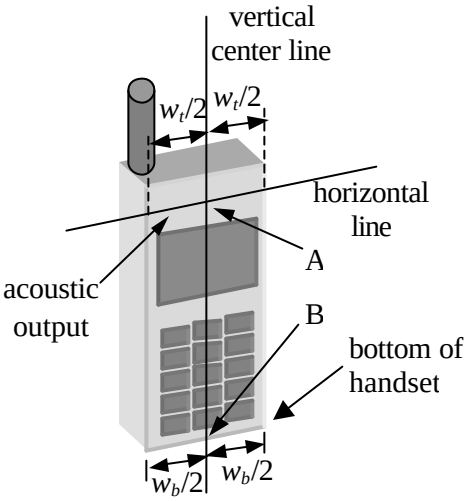


Figure 3.a– Handset vertical and horizontal reference lines – fixed case

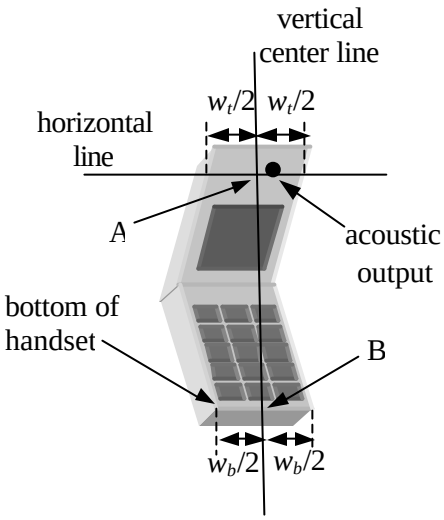


Figure 3.b– Handset vertical and horizontal reference lines – "clam-shell"

A "ear reference point" is located on the outer surface of the head phantom on each ear spacer. It is located 1.5 cm above the center of the ear canal entrance in the "phantom reference plane" defined by the three lines joining the center of each "ear reference point" (left and right) and the tip of the mouth.

The EUT is initially positioned with the earpiece region pressed against the ear spacer of a head phantom in "initial ear position". The "test device reference point" was aligned to the "ear reference point" on the head phantom and the "vertical centerline" was aligned to the "phantom reference plane". While maintaining these three alignments, the body of the handset is gradually adjusted to each of the following positions for evaluating SAR:

1. "Cheek/Touch Position" – the device is brought toward the mouth of the head phantom by pivoting against the "ear reference point". This test position is established:
   i) When any point on the display, keypad or mouthpiece portions of the handset is in contact with the phantom.

   or

   ii) When any portion of a foldout, sliding or similar keypad cover opened to its intended self-adjusting normal use position is in contact with the cheek or mouth of the phantom.

2. "Ear/Tilt Position" – With the handset aligned in the "Cheek/Touch Position":

i) If the earpiece of the handset is not in full contact with the phantom's ear spacer (in the "Cheek/Touch position") and the peak SAR location for the "Cheek/Touch" position is located at the ear spacer region or corresponds to the earpiece region of the handset, the device is returned to the "initial ear position" by rotating it away from the mouth until the earpiece is in full contact with the ear spacer.

otherwise

ii) The handset is moved (translated) away from the cheek perpendicular to the line passes through both "ear reference points" for approximate 2-3 cm. While it is in this position, the handset is tilted away from the mouth with respect to the "test device reference point" by 15°. After the tilt, it is then moved (translated) back toward the head perpendicular to the line passes through both "ear reference points" until the device touches the phantom or the ear spacer. If the antenna touches the head first, the positioning process is repeated with a tilt angle less than 15° so that the device and its antenna would touch the phantom simultaneously.

1.4.4 Test Condition

During tests, the worst case data (max. RF coupling) was determined with following conditions:

EUT Antenna	Fixed length	**Orientation**	Fixed length
Usage	Right hand and Left hand	**Distance between antenna and the phantom surface:**	Left Side: 3.2 mm, tilt position 6.3 mm, check position
			Right Side: 11.5 mm, tilt position 14.8 mm, check position
Simulating human Body/hand	No	**EUT Battery**	Fully charged
Conducted Peak Output Power	**Frequency MHz**		**Output Power dBm**
	1850		29.2
	1880		29.2
	1910		29.2

The spatial peak SAR values were accessed for lowest, middle and highest operating channels defined by the manufacturer.

Antenna port power measurement was performed, with the HP 435A power meter, before and after the SAR tests to ensure that the HTC Wallaby PW20 operated at the highest power level.

1.5 Modifications required for compliance

No modifications were implemented by Intertek Testing Services.

1.6 Additions, deviations and exclusions from standards

No additions, deviations or exclusions have been made from standard.

2.0 SAR EVALUATION

2.1 SAR Limits

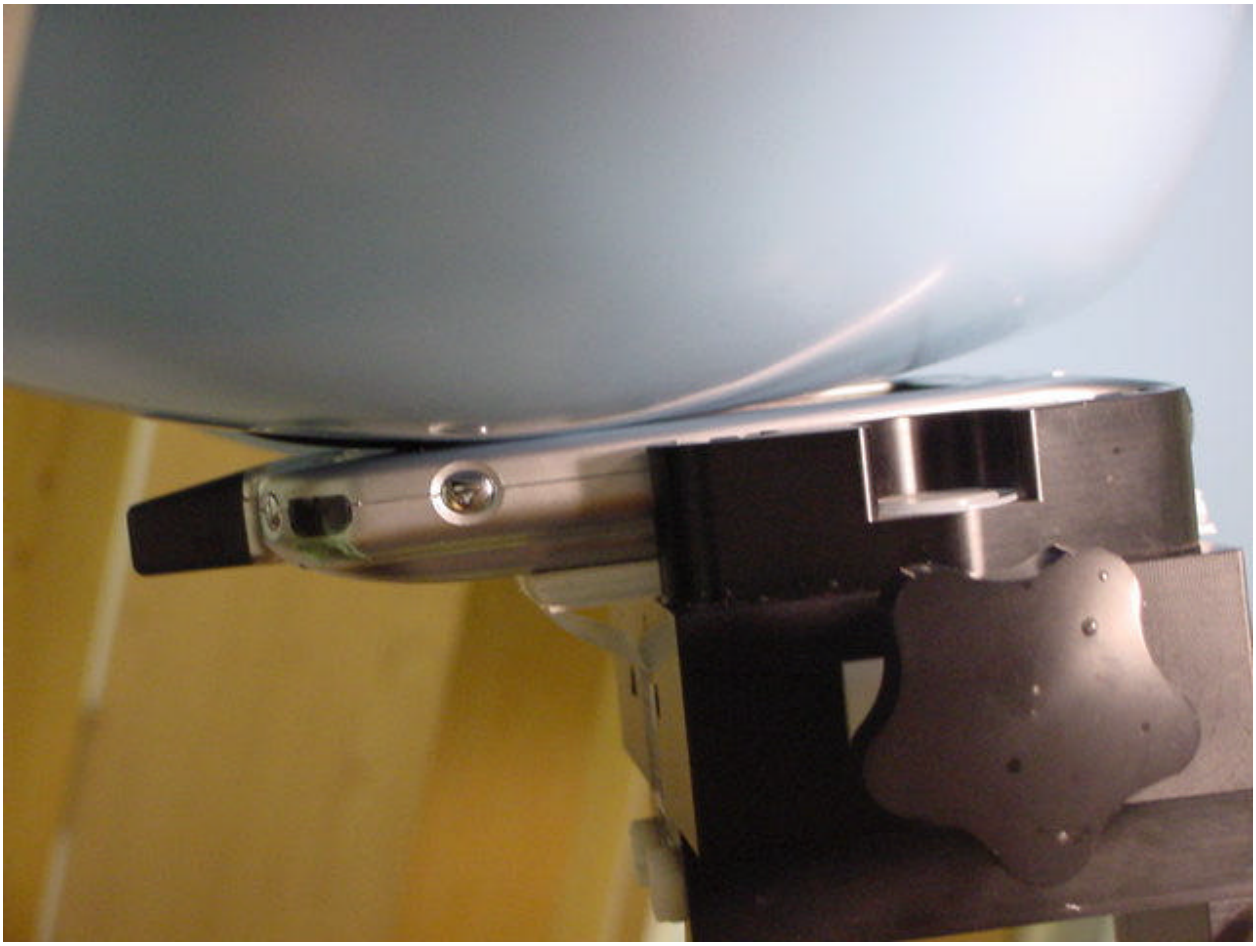
The following FCC limits for SAR apply to devices operate in General Population/Uncontrolled Exposure environment:

EXPOSURE (General Population/Uncontrolled Exposure environment)	**SAR (W/kg)**
Average over the whole body	0.08
Spatial Peak (1g)	1.60
Spatial Peak for hands, wrists, feet and ankles (10g)	4.00

2.2 Configuration Photographs

SAR Measurement Test Setup

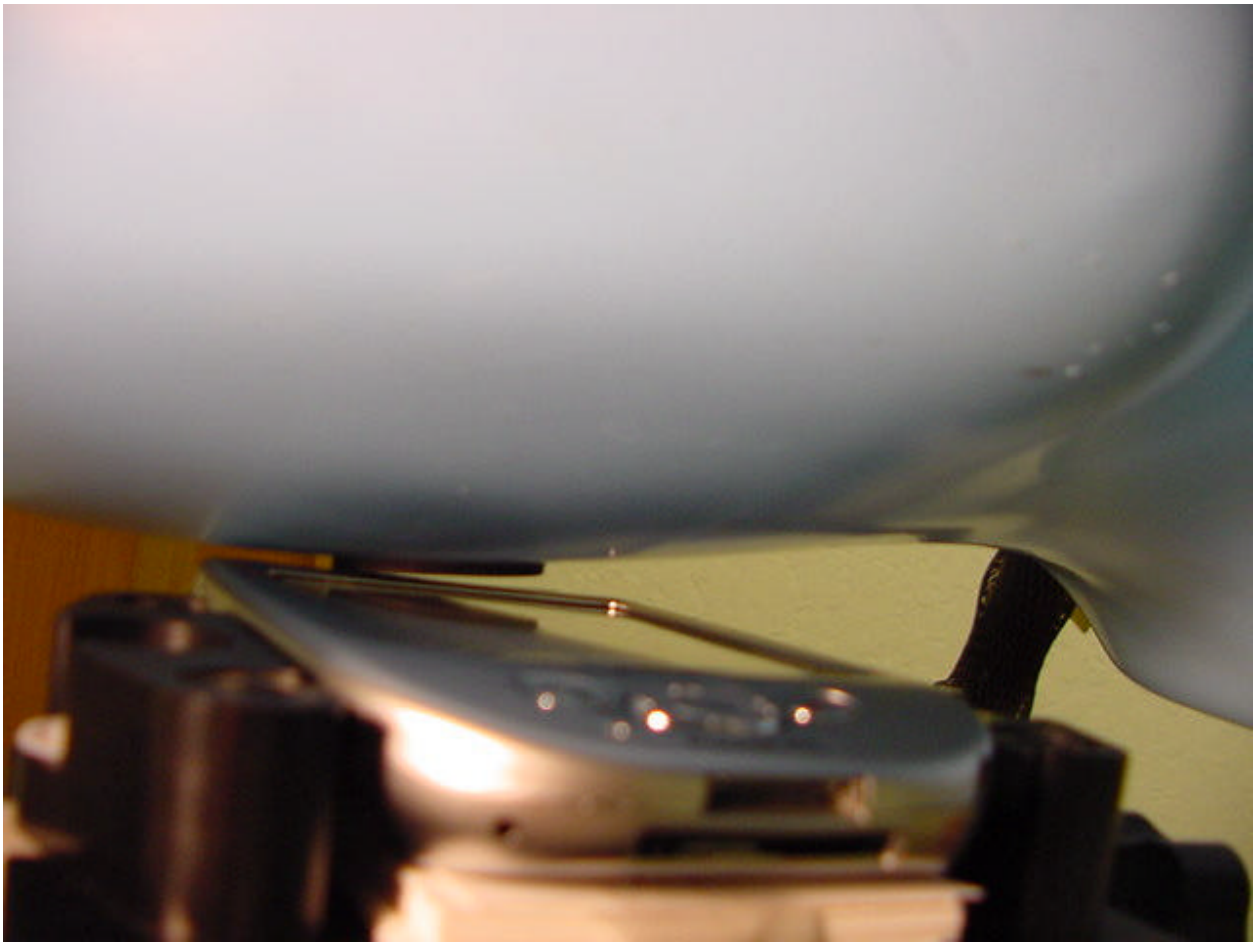
Left Cheek Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

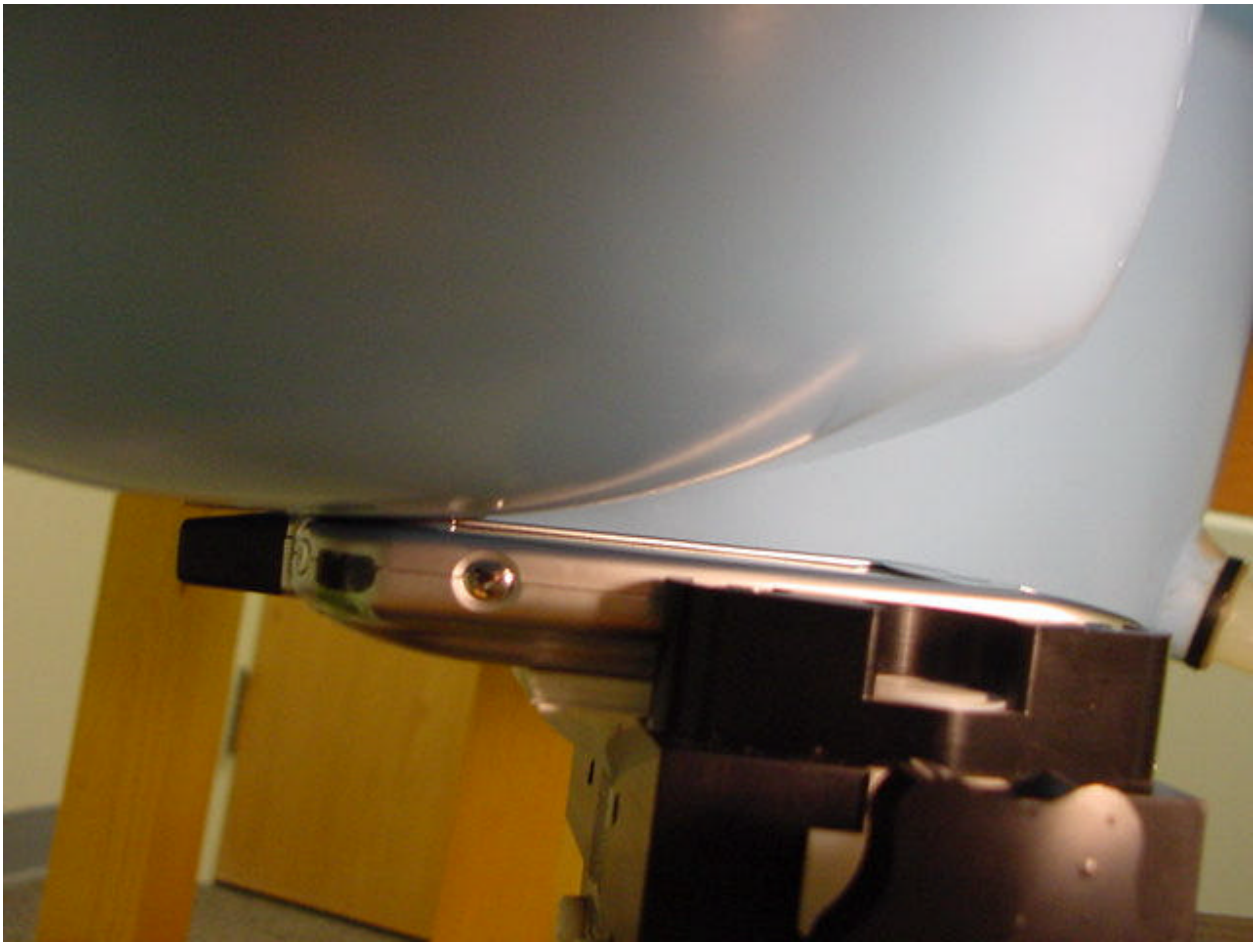
Left Tilt Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

Left Tilt Position



2.2 Configuration Photographs (Continued)

SAR Measurement Test Setup

Right Tilt Position