SUPPLEMENTARY TEST REPORT

Co-Transmission Specific Absorption Rate Assessment of the Symbol MC9060 Mobile Computer.

Report Number: WS612324 – 001 issue 1.00 **May 2004**

TÜV PRODUCT SERVICE

BABT

TUV Product Service Ltd. Segensworth Road, Titchfield
Fareham, Hampshire, United Kingdom, PO15 5RH
Tel: +44(0)1329 443300, Fax: +44(0)1329 443331
www.tuvps.co.uk

REPORT ON: Co-Transmission Specific Absorption Rate Assessment of the Symbol MC9060 Mobile Computer.

Report No: WS612324 – 001 Issue 1.00

FCC ID: H9PMC9060B
IC: 1549D–MC9060B

PREPARED FOR: Symbol Technologies Inc.
One Symbol Plaza
Holtsville
NY 11742-1300
New York
United States of America

ATTESTATION: The wireless portable device described within this report has been shown to be capable of compliance for localised specific absorption rate (SAR) for General Population/Uncontrolled Exposure Limits as defined in the FCC standard Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01) and RSS-102 Issue 1 (Provisional) September 25, 1999 of 1.6 W/kg.

The measurements shown in this report were made in accordance with the procedures specified in Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01), RSS-102 Issue 1 (Provisional) September 25 and IEEE1528-2003.

All reported testing was carried out on a sample of equipment to demonstrate compliance with the above standards. The sample tested was found to comply with the requirements in the applied rules.

A. Miller
Senior SAR Test Engineer

APPROVED BY:

M J Hardy
Deputy Wireless Group Leader

DATED: 5th May 2004

DISTRIBUTION:

Symbol Technologies Inc.	Copy No:	1
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Note: The test results reported herein relate only to the item tested as identified above and on the Status Page.

CONTENTS

EXECUTIVE SUMMARY **3**

1.1 Status 4

1.2 Declaration of Build Status 5

1.3 Summary 6

1.4 Test Result Summary 7

TEST DETAILS **8**

2.1 Test Equipment 9

2.2 Test Software 9

2.3 Dielectric Properties of Simulant Liquids 10

2.4 Test Conditions 12

2.5 Measurement Uncertainty 12

2.6 SAR Measuring System 12
Probe and Amplifier Specification
Probe Calibration
SAR Measurement Procedure

2.7 OET65(c) Flat Phantom Test Position – Graphical Representation 12

2.8 SAR Distributions (Area Scans – 2D) 13

2.9 Test Positional Photographs 18

2.10 Record Photographs 19

2.11 User Information 20

2.12 Copyright Statement 21

EXECUTIVE SUMMARY

Co-Transmission Specific Absorption Rate Assessment of the Symbol MC9060 Mobile Computer.

PROJECT MANAGER: M. GLASSPOOL

1.1 STATUS

MANUFACTURING DESCRIPTION	Mobile Computer
STATUS OF TEST	Specific Absorption Rate Testing
APPLICANT	Symbol Technologies Inc
MANUFACTURER	Symbol Technologies Inc
TYPE NUMBER	MC9060
PART NUMBER	MC9060-SK0H9AEA7WW
SERIAL NUMBER	ALP76725
HARDWARE VERSION	Rev A
RADIO LAN	Symbol Main Terminal Module (MTM) with 802.11b embedded Radio.
TYPE	21-64436
POWER	+17dBm
BLUETOOTH MODULE	Symbol Bluetooth Module
TYPE	21-64381
CLASS	Class 1
POWER	+20dBm

TEST SPECIFICATIONS:

US Federal Government, Code of Federal Regulations, Title 47 Telecommunication, Chapter I Federal Communications Commission, part 2, section 1093.

Federal Communications Commission (FCC) OET Bulletin 65c, Edition 01-01, Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields – Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions

RSS-102 Issue 1 (Provisional) September 25, 1999: Evaluation Procedure for Mobile and Portable Radio Transmitters with respect to Health Canada's Safety Code 6 for Exposure of Humans to radio Frequency Fields

REFERENCES:

IEEE 1528 –2003: Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Body Due to Wireless Communications Devices: Experimental Techniques

BABT REGISTRATION NUMBER:	WS612324
RECEIPT OF TEST SAMPLES:	22nd March 2004.
START OF TEST:	30th March 2004.
FINISH OF TEST:	31st March 2004.

1.2 DECLARATION OF BUILD STATUS

MAIN EUT		
MANUFACTURING DESCRIPTION	Mobile Computer	
MANUFACTURER	Symbol Technologies Inc	
TYPE	MC9060	
PART NUMBER	MC9060-SK0H9AEA7WW	
SERIAL NUMBER	ALP76725, ALP76726,	
HARDWARE VERSION	Rev A	
COUNTRY OF ORIGIN	United States of America	
FCC ID	H9PMC9060B	
INDUSTRY CANADA ID	1549D-MC9060B	
TECHNICAL DESCRIPTION	The unit supplied for testing is a Symbol MC9060 Mobile Computer, which offers 2.4GHz 802.11b Wireless LAN and Bluetooth connectivity with the following options: Imager; Colour (touch) display; 128/64 memory option; 28 Key Keyboard; PPC2003; Audio; Bluetooth	
BATTERY/POWER SUPPLY		
MANUFACTURING DESCRIPTION	Lithium Battery	
MANUFACTURER	Symbol Technologies Inc.	
TYPE	N/A	
PART NUMBER	21-62960-01	
VOLTAGE	7.2V	
COUNTRY OF ORIGIN	USA	
MODULES		
MANUFACTURING DESCRIPTION	Main Terminal Module with Embedded RLAN Radio	Bluetooth Module
MANUFACTURER	Symbol Technologies Inc	Symbol Technologies Inc
COUNTRY OF ORIGIN	USA	USA
TYPE	21-64436	21-64381
POWER	7 - 16V	3.3V
TRANSMITTER OPERATING RANGE	2400 – 2483.5MHz	2400 – 2483.5MHz
TRANSMITTER POWER	50mW (+17dBm)	100mW (+20dBm)
RECEIVER OPERATING RANGE	2400 – 2483.5MHz	2400 – 2483.5MHz
INTERMEDIATE FREQUENCIES	374MHz	Direct Conversion
EMISSION DESIGNATOR	11M0F1D	1M00F1D
DHSS/FHSS/COMBINED	DSSS	FHSS
FCC ID	H9P2164436	H9P2164381
INDUSTRY CANADA ID	1549D-2164436	1549D-2164381
ANCILLARIES		
MANUFACTURING DESCRIPTION	Headset	
MANUFACTURER	VXI Corporation	
TYPE	VXI 61-SYB	
PART NUMBER	50-11300-050	
SERIAL NUMBER	Not Serialised	
HARDWARE VERSION	Rev A	
COUNTRY OF ORIGIN	USA	

Signature

Date 22 March 2004
D of B S Serial No OR612324

1.3 SUMMARY

This supplementary report covers additional test requirements for co-transmission between WLAN and Bluetooth radios caused by simultaneous transmission by two or more transmitters.

The unit supplied for testing is a Symbol Technologies MC9060 Mobile Computer, with a Symbol Bluetooth Module and embedded 2.4GHz 802.11b Wireless Radio.

This report must be read in conjunction with BABT report number WS611522 – 001, issued 03rd December 2003.

The Symbol Technologies MC9060 Mobile Computer does support co-located transmission WLAN + Bluetooth. For co-transmission SAR assessment the MC9060 was first placed with the dominant transmitter transmitting only and placed against the Flat Phantom with the dominant body simulant within. A SAR measurement was obtained with the diode compression settings set to a 20/20/20 (CW), the secondary transmitter was then activated. Another SAR measurement was obtained.

Prior to full SAR assessment, the device was placed into the appropriate test mode and an area scan was performed on each face of the device to ascertain the location of the transmitter to enable the SAR testing to be performed on the appropriate face. This was performed for each Radio Module fitted. This was carried out with and without both the Headset and Holster in position for the body assessment, this showed that there was no difference in SAR values and therefore testing was carried out without the headset or holster being used.

For Body worn assessment SAR testing was performed with the device set in the appropriate Test Mode for the Radio Module under test. The device was then placed in the supplied holster with the LCD facing the rear of the Holster. The Holster was then positioned with the belt clip in contact with the 2.0mm sidewall of the Flat Phantom. Flat Phantom dimensions 220mmx200mmx150mm and with a sidewall thickness of 2.0mm. The phantom was filled to a depth of 150mm with 2450MHz Body simulant liquid. The dielectric properties were in accordance with the requirements for the dielectric properties specified in Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01) the frequency under test.

SAR testing was carried out at the top, middle and bottom frequency of each of the device operating bands.

For WLAN SAR assessment the device was placed into a test mode using onboard software supplied by the client, which enabled the device to be placed into a CW test mode. The channels 1, 6 & 11 were selected in turn and the maximum SAR levels recorded

The following accessories were supplied for assessment with the device, these were: -

- Symbol Headset – Model Number VXI 61-SYB (p/n 50-11300-050)
- MC9062 Mobile Computer Holster[1] – Manufactured by AGORA (p/n 11-66061-01)

The maximum 1g volume averaged SAR level measured for all the tests performed did not exceed the limits for General Population/Uncontrolled Exposure (W/kg) Partial Body of 1.6 W/kg. Level defined in Supplement C (Edition 01-01) to OET Bulletin 65 (97-01).

[1]. The Holster was declared to be used in one position only on the end user, see section 2.11 for further details. SAR assessment of the Symbol Technologies MC9062 Mobile Computer was based upon this user configuration.

1.4 TEST RESULT SUMMARY

SYSTEM PERFORMANCE / VALIDATION CHECK RESULTS

Prior to formal testing being performed a System Check was performed in accordance with Appendix D IEEE1528-2003 Standard. The following results were obtained: -

Date	Dipole Used	Frequency (MHz)	Max 1g SAR (W/kg)	Percentage Drift on Reference	Max 10g SAR (W/kg)	Percentage Drift on Reference
11/03/2004	2450	2450	51.45*	-1.82%	24.10*	0.44%

*Normalised to a forward power of 1W

MAXIMUM SAR MEASUREMENT

The following is a summary of the maximum SAR values found during the assessment.

DSSS 2450 MHz & Bluetooth Specific Absorption Rate (Maximum SAR) 1g & 10g WLAN Results for Symbol Technologies MC9062 Mobile Computer.

Position	Channel Number	Frequency (MHz)	Max Spot SAR (W/kg)	Max 1g SAR (W/kg)	Max 10g SAR (W/kg)	SAR Drift dB	Area scan (Figure number)
LCD to Phantom in Holster WLAN Mode (CW Probe Calibration)	11	2462	0.02	0.015	0.008	0.00	Figure 1
LCD to Phantom in Holster Bluetooth Mode (CW Probe Calibration)	39	2441	0.02	0.018	0.010	0.00	Figure 2
LCD to Phantom in Holster WLAN + Bluetooth Mode First Hotspot (CW Probe Calibration)	11& 39	2462 & 2441	0.02	0.018	0.010	0.00	Figure 3
LCD to Phantom in Holster WLAN + Bluetooth Mode Second Hotspot (CW Probe Calibration)	11& 39	2462 & 2441	0.02	0.017	0.008	0.00	Figure 4
LCD to Phantom in Holster WLAN + Bluetooth Mode Third Hotspot (CW Probe Calibration)	11& 39	2462 & 2441	0.02	0.013	0.007	0.00	Figure 5
Limit for General Population (Uncontrolled Exposure) 1.6 W/kg (1g) & 2.0 W/kg (10g)							

1.3 TEST RESULT SUMMARY

OUTPUT POWER OF TEST DEVICE MEASUREMENT METHOD

For the Symbol Technologies MC9060 Mobile Computer.

The Spectrum Analyser was tuned to the test frequency. The device output power setting was controlled via the 'Test Mode' on each handset being set to the conditions specified in the Summary on page 5 of this document. The device was then rotated through 360 degrees until the highest power level was observed in both planes of polarisation. The device was then replaced with a substitution antenna, the signal to the antenna was adjusted to equal the related level detected from the device.

MAXIMUM POWER
Recorded from the Symbol Technologies MC9060 Mobile Computer S/N ALP76725.

Radio Device	Frequency (MHz)	Raw Result (dBm)	Substitution Level (dBm)	Substitution Antenna Gain (dB)	Result EIRP (dBm)	Result EIRP (mW)
2.4GHz DSSS WLAN Radio	2412	-26.9	8.2	9.1	17.3	53.7
2.4GHz DSSS WLAN Radio	2437	-27.6	7.4	9.2	16.6	45.7
2.4GHz DSSS WLAN Radio	2462	-28.0	7.1	9.2	16.3	42.7
Symbol Bluetooth Module	2402	-33.2	1.9	9.1	11.0	12.6
Symbol Bluetooth Module	2441	-31.7	3.4	9.2	12.6	18.2
Symbol Bluetooth Module	2480	-30.7	4.4	9.2	13.6	22.9

TEST DETAILS

Co-Transmission Specific Absorption Rate Assessment of the
Symbol MC9060 Mobile Computer.

TEST ENGINEERS: A. MILLER

2.1 TEST EQUIPMENT

The following test equipment was used at BABT:

INSTRUMENT DESCRIPTION	MANUFACTURER	MODEL TYPE	INVENTORY NO.	SERIAL NUMBER	CALIBRATION DATES
Bench-top Robot	Mitsubishi	RV-E2	4691	EA009006	N/A
SAM Phantom	Antennessa	SAM	N/A	04/02 FT04	N/A
2450 MHz Head Tissue Simulant	BABT	Batch 4	N/A	N/A	18/03/04*
2450 MHz Head Tissue Simulant	BABT	Batch 4	N/A	N/A	18/03/04*
2450 MHz Dipole	IndexSAR	IEEE1528	N/A	N/A	29/03/04
RF Pre-Amplifier	Vectawave	10M-2.5G	4697	N/A	N/A
Bi-Directional Coupler	Krytar	1850	4561	N/A	15/04/04
20dB Attenuator	Weinschel	46-20-34	4653	AT9195	24/05/04 (due)
Power Meter	Rohde and Schwarz	NRV	2472	860327/025	22/05/04 (due)
Hygrometer	Rotronic	-	3230	N/A	04/10/04 (due)
Thermometer	Digitron	T208	3178	N/A	16/06/04 (due)
SAR Probe	IndexSAR	IXP- 050	N/A	84	17/04/04 (due)
Flat Phantom box (200mm cube)	SARTest Ltd.	N/A	N/A	N/A	N/A

* Verified at time of test.

2.2 TEST SOFTWARE

The following software was used to control the BABT SARA2 System:

INSTRUMENT	VERSION NO.	DATE
SARA2 system	v.2.3 VPM	29/02/2004
Mitsubishi robot controller firmware revision	RV-E2 Version C9a	-
IXA-10 Probe amplifier	Version 2.5	-

2.3 DIELECTRIC PROPERTIES OF SIMULANT LIQUIDS

The fluids were calibrated in our Laboratory and re-checked prior to any measurements being made against reference fluids stated in IEEE 1528-2003 of 0.9% NaCl (Salt Solution) at 23ºC and also for Dimethylsulphoxide (DMS) at 21ºC.

The fluids were made at BABT under controlled conditions from the following OET(65)c formulae and reference made to Standard IEEE 1528-2003. The composition of ingredients may have been modified accordingly to achieve the desired target tissue parameters required for routine SAR evaluation:

OET 65(c) Recipes

Ingredients (% by weight)	**Frequency (MHz)**									
	450		835		915		1900		2450	
Tissue Type	Head	Body	Head	Body	Head	Body	Head	Body	Head	Body
Water	38.56	51.16	41.45	52.4	41.05	56.0	54.9	40.4	62.7	73.2
Salt (NaCl)	3.95	1.49	1.45	1.4	1.35	0.76	0.18	0.5	0.5	0.04
Sugar	56.32	46.78	56.0	45.0	56.5	41.76	0.0	58.0	0.0	0.0
HEC	0.98	0.52	1.0	1.0	1.0	1.21	0.0	1.0	0.0	0.0
Bactericide	0.19	0.05	0.1	0.1	0.1	0.27	0.0	0.1	0.0	0.0
Triton X-100	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	36.8	0.0
DGBE	0.0	0.0	0.0	0.0	0.0	0.0	44.92	0.0	0.0	26.7
Dielectric Constant	43.42	58.0	42.54	56.1	42.0	56.8	39.9	54.0	39.8	52.5
Conductivity (S/m)	0.85	0.83	0.91	0.95	1.0	1.07	1.42	1.45	1.88	1.78

IEEE 1528 Recipes

Frequency (MHz)	**300**	**450**		**835**	**900**			**1450**	**1800**				**1900**		**1950**	**2000**	**2100**		**2450**		**3000**
Recipe #	**1**	**1**	**3**	**1**	**1**	**2**	**3**	**1**	**1**	**2**	**2**	**3**	**1**	**2**	**4**	**1**	**1**	**2**	**2**	**3**	**1**
Ingredients (% by weight)																					
1,2-Propanediol						64.81															
Bactericide	0.19	0.19	0.5	0.1	0.1		0.5					0.5								0.5	
Diacetin			48.9				49.2					49.43								49.75	
DGBE								45.41	47	13.84	44.92		44.92	13.84	45	50	50	7.99	7.99		7.99
HEC	0.98	0.98		1	1																
NaCl	5.95	3.95	1.7	1.45	1.48	0.79	1.1	0.67	0.36	0.35	0.18	0.64	0.18	0.35				0.16	0.16		0.16
Sucrose	55.32	56.32		57	56.5																
Triton X-100										30.45				30.45				19.97	19.97		19.97
Water	37.56	38.56	48.9	40.45	40.92	34.4	49.2	53.82	52.64	55.36	54.9	49.43	54.9	55.36	55	50	50	71.88	71.88	49.75	71.88
Measured dielectric parameters																					
ε_r'	46	43.4	44.3	41.6	41.2	41.8	42.7	40.9	39.3	41	40.4	39.2	39.9	41	40.1	37	36.8	41.1	40.3	39.2	37.9
σ **(S/m)**	0.86	0.85	0.9	0.9	0.98	0.97	0.99	1.21	1.39	1.38	1.4	1.4	1.42	1.38	1.41	1.4	1.51	1.55	1.88	1.82	2.46
Temp. (°C)	22	22	20	22	22	22	20	22	22	21	22	20	21	21	20	22	22	20	20	20	20
Target dielectric parameters (Table 5-1)																					
ε_r'	45.3	43.5		41.5	41.5			40.5	40								39.8		39.2		38.5
σ **(S/m)**	0.87	0.87		0.9	0.97			1.2	1.4								1.49		1.8		2.4

2.3 DIELECTRIC PROPERTIES OF SIMULANT LIQUIDS

The dielectric properties of the tissue simulant liquids used for the SAR testing at BABT are as follows:-

FLUID TYPE AND FREQUENY	RELATIVE PERMITTIVITY εr (ε') TARGET	RELATIVE PERMITTIVITY εr (ε') MEASURED	CONDUCTIVITY σ TARGET	CONDUCTIVITY σ MEASURED
Head 2450MHz	39.2	**37.57**	1.80 S/m	**1.870**
Body 2450MHz	52.7	**50.84**	1.95 S/m	**2.006**

Fluid Mass Density, ρ = 1000 kg/m^3

2.4 TEST CONDITIONS

TEST LABORATORY CONDITIONS

Ambient Temperature: Within +15°C to +35°C at 20% RH to 75% RH.
The actual Temperature during the testing ranged from 22.0°C to 23.3°C.
The actual Humidity during the testing ranged from 30.5% to 33.6% RH.

TEST FLUID TEMPERATURE RANGE

TISSUE SIMULATING LIQUID TEMPERATURE: +20°C TO +25°C.		
FREQUENCY	2450 MHz	2450 MHz
BODY / HEAD FLUID	HEAD	BODY
MIN TEMPERATURE	22.1	21.8
MAX TEMPERATURE	23.1	22.0

SAR DRIFT

SAR Drift during scans. The maximum SAR Drift, drift due to the mobile phone electronics, was recorded as 0.0% (0.0 db) for all of the testing.

2.5 MEASUREMENT UNCERTAINTY

Please refer to report number BABT Report WS611522 – 001 issued 03rd December 2003 for full details

2.6 SAR MEASUREMENT SYSTEM

Please refer to report number BABT Report WS611522 – 001 issued 03rd December 2003 for full details

2.7 TEST POSITIONS

Please refer to report number BABT Report WS611522 – 001 issued 03rd December 2003 for full details

2.8 TEST RESULTS INCLUDING SAR DISTRIBUTIONS (AREA SCANS – 2D)

SYSTEM / SOFTWARE:	SARA2 / 2.3 VPM	**INPUT POWER DRIFT:**	0.0 dB
DATE / TIME:	31/03/2004 17:19:33	**DUT BATTERY MODEL/NO:**	BATMOD
FILENAME:	612324_005.txt	**PROBE SERIAL NUMBER:**	0084
AMBIENT TEMPERATURE:	22.7°C	**LIQUID SIMULANT:**	2450 Body
DEVICE UNDER TEST:	Symbol MC9060	**RELATIVE PERMITTIVITY:**	50.84
RELATIVE HUMIDITY:	31.8%	**CONDUCTIVITY:**	2.006
PHANTOM S/NO:	HeadBox01.csv	**LIQUID TEMPERATURE:**	21.8°C
PHANTOM ROTATION:	0°	**MAX SAR Y-AXIS LOCATION:**	-52.80 mm
DUT POSITION:	LCD facing in holster	**MAX SAR Z-AXIS LOCATION:**	-120.65 mm
ANTENNA CONFIGURATION:	Fixed internal	**MAX E FIELD:**	3.09 V/m
TEST FREQUENCY:	2462MHz (WLAN Mode)	**SAR 1g:**	0.015 W/kg
AIR FACTORS:	500 / 410 / 385	**SAR 10g:**	0.008 W/kg
CONVERSION FACTORS:	0.468 / 0.468 / 0.468	**SAR START:**	0.003 W/kg
TYPE OF MODULATION:	CW	**SAR END:**	0.003 W/kg
MODN. DUTY CYCLE:	100%	**SAR DRIFT DURING SCAN:**	0.00 dB
DIODE COMPRESSION FACTORS (V*200):	20 / 20 / 20	**PROBE BATTERY LAST CHANGED:**	29/03/04
INPUT POWER LEVEL:	100mW	**EXTRAPOLATION:**	poly4

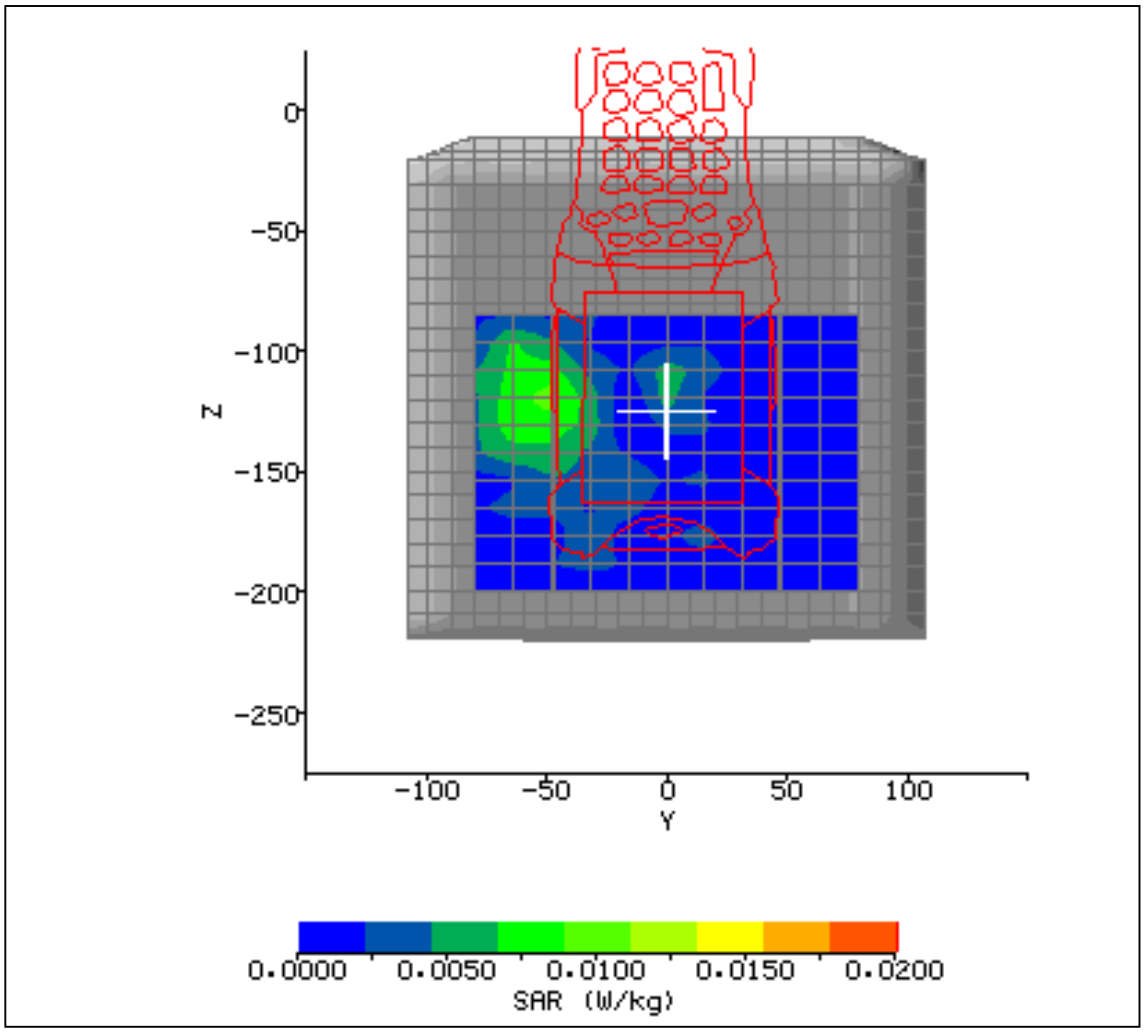

Figure 1

2.8 TEST RESULTS INCLUDING SAR DISTRIBUTIONS (AREA SCANS – 2D)

SYSTEM / SOFTWARE:	SARA2 / 2.3 VPM	**INPUT POWER DRIFT:**	0.0 dB
DATE / TIME:	31/03/2004 18:07:49	**DUT BATTERY MODEL/NO:**	BATMOD
FILENAME:	612324_006.txt	**PROBE SERIAL NUMBER:**	0084
AMBIENT TEMPERATURE:	23.2°C	**LIQUID SIMULANT:**	2450 Body
DEVICE UNDER TEST:	Symbol MC9060	**RELATIVE PERMITTIVITY:**	50.84
RELATIVE HUMIDITY:	30.8%	**CONDUCTIVITY:**	2.006
PHANTOM S/NO:	HeadBox01.csv	**LIQUID TEMPERATURE:**	21.8°C
PHANTOM ROTATION:	0°	**MAX SAR Y-AXIS LOCATION:**	51.20 mm
DUT POSITION:	LCD facing in holster	**MAX SAR Z-AXIS LOCATION:**	-121.80 mm
ANTENNA CONFIGURATION:	Fixed internal	**MAX E FIELD:**	3.34 V/m
TEST FREQUENCY:	2441MHz (BT Mode)	**SAR 1g:**	0.018 W/kg
AIR FACTORS:	500 / 410 / 385	**SAR 10g:**	0.010 W/kg
CONVERSION FACTORS:	0.468 / 0.468 / 0.468	**SAR START:**	0.005 W/kg
TYPE OF MODULATION:	CW	**SAR END:**	0.005 W/kg
MODN. DUTY CYCLE:	100%	**SAR DRIFT DURING SCAN:**	0.00 dB
DIODE COMPRESSION FACTORS (V*200):	20 / 20 / 20	**PROBE BATTERY LAST CHANGED:**	29/03/04
INPUT POWER LEVEL:	100mW	**EXTRAPOLATION:**	poly4

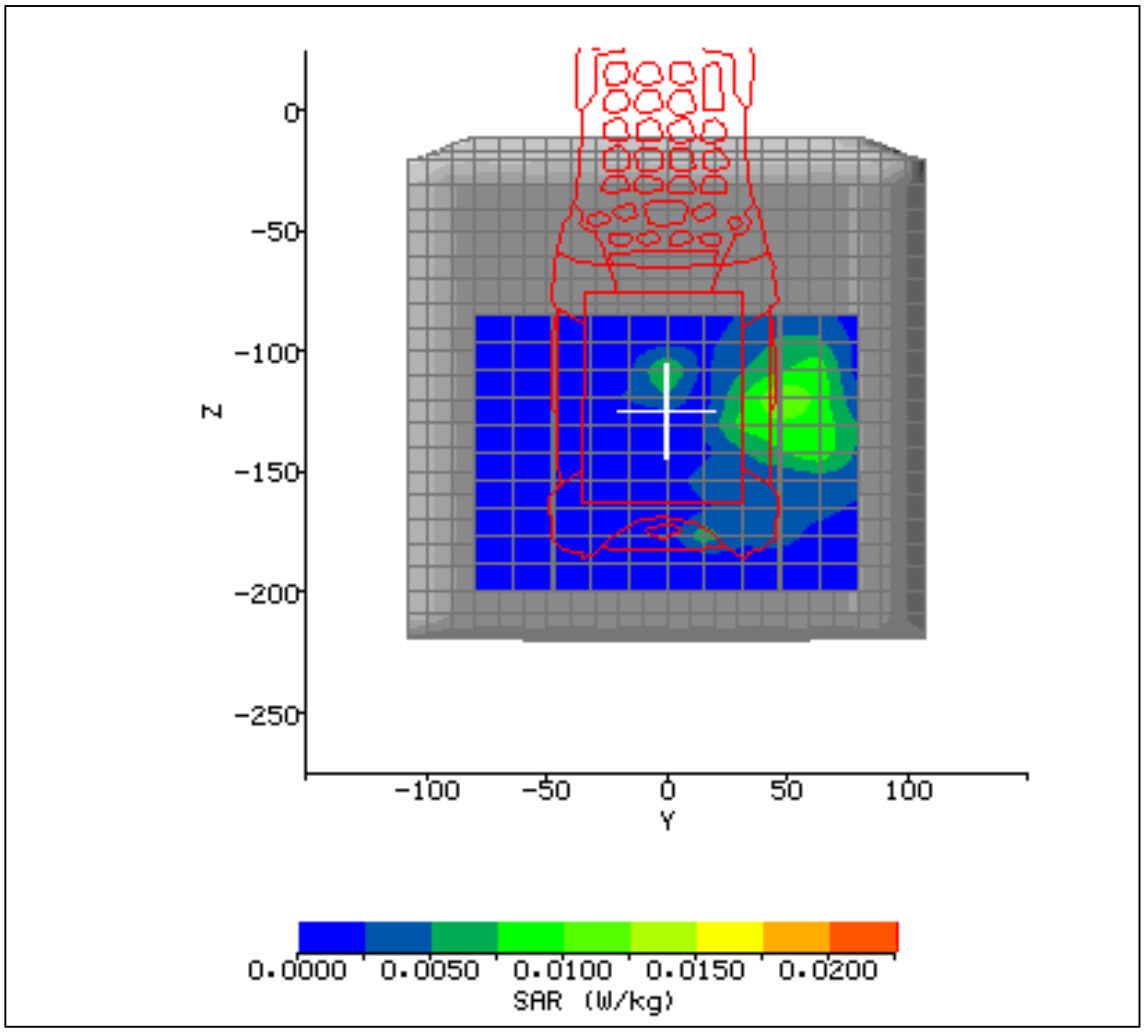

Figure 2

2.8 TEST RESULTS INCLUDING SAR DISTRIBUTIONS (AREA SCANS – 2D)

SYSTEM / SOFTWARE:	SARA2 / 2.3 VPM	**INPUT POWER DRIFT:**	0.0 dB
DATE / TIME:	31/03/2004 19:21:01	**DUT BATTERY MODEL/NO:**	BATMOD
FILENAME:	612324_007.txt	**PROBE SERIAL NUMBER:**	0084
AMBIENT TEMPERATURE:	23.3°C	**LIQUID SIMULANT:**	2450 Body
DEVICE UNDER TEST:	Symbol MC9060	**RELATIVE PERMITTIVITY:**	50.84
RELATIVE HUMIDITY:	30.5%	**CONDUCTIVITY:**	2.006
PHANTOM S/NO:	HeadBox01.csv	**LIQUID TEMPERATURE:**	21.8°C
PHANTOM ROTATION:	0°	**MAX SAR Y-AXIS LOCATION:**	51.20 mm
DUT POSITION:	LCD facing in holster	**MAX SAR Z-AXIS LOCATION:**	-121.80 mm
ANTENNA CONFIGURATION:	Fixed internal	**MAX E FIELD:**	3.34 V/m
TEST FREQUENCY:	2441 & 2462MHz	**SAR 1g:**	0.018 W/kg
AIR FACTORS:	500 / 410 / 385	**SAR 10g:**	0.010 W/kg
CONVERSION FACTORS:	0.468 / 0.468 / 0.468	**SAR START:**	0.002 W/kg
TYPE OF MODULATION:	CW (WLAN) & CW (Bluetooth)	**SAR END:**	0.002 W/kg
MODN. DUTY CYCLE:	100%	**SAR DRIFT DURING SCAN:**	0.00 dB
DIODE COMPRESSION FACTORS (V*200):	20 / 20 / 20	**PROBE BATTERY LAST CHANGED:**	29/03/04
INPUT POWER LEVEL:	100mW	**EXTRAPOLATION:**	poly4

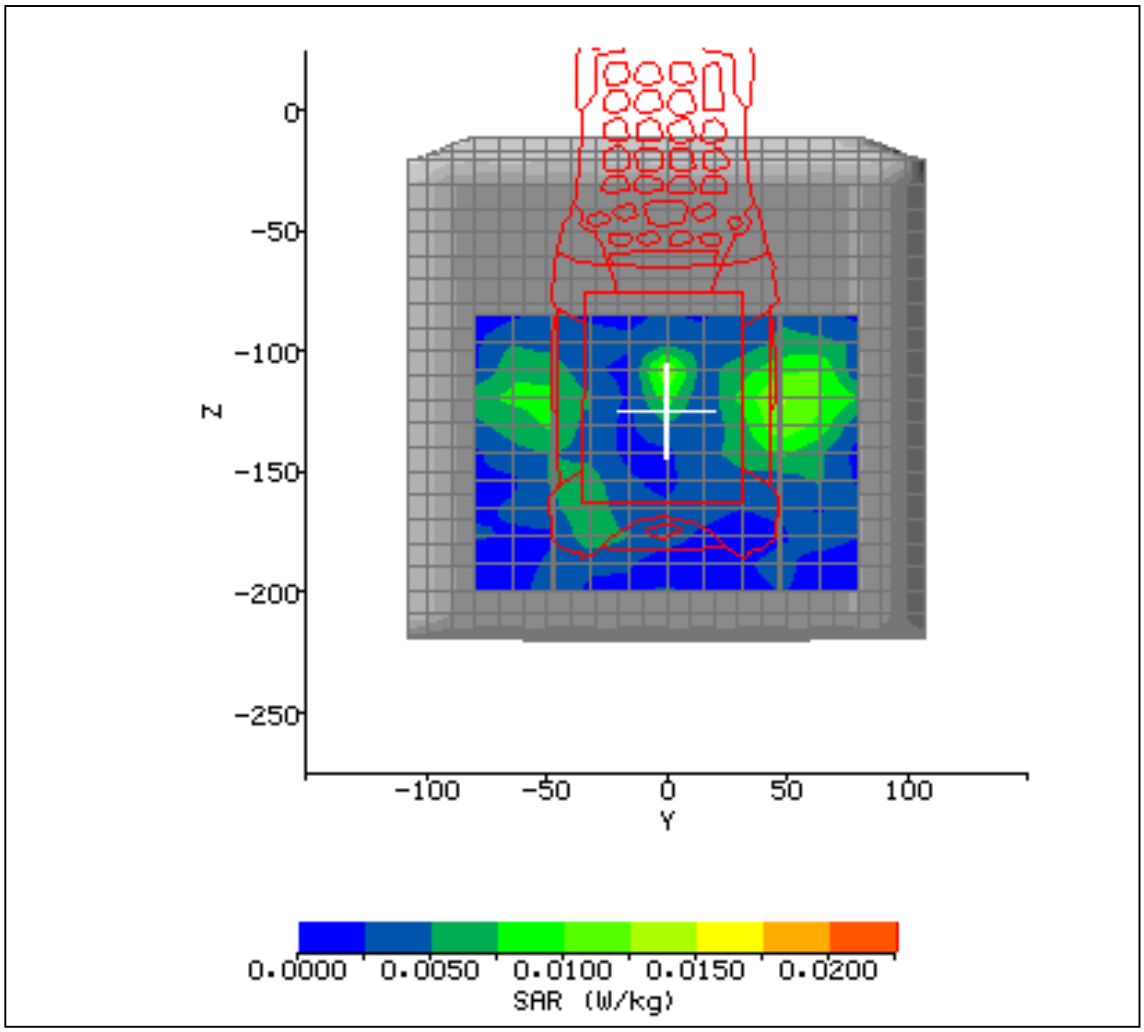

Figure 3– First peak identified Right Hand Side of device

2.8 TEST RESULTS INCLUDING SAR DISTRIBUTIONS (AREA SCANS – 2D)

SYSTEM / SOFTWARE:	SARA2 / 2.3 VPM	**INPUT POWER DRIFT:**	0.0 dB
DATE / TIME:	31/03/2004 20:02:17	**DUT BATTERY MODEL/NO:**	BATMOD
FILENAME:	612324_008.txt	**PROBE SERIAL NUMBER:**	0084
AMBIENT TEMPERATURE:	23.2°C	**LIQUID SIMULANT:**	2450 Body
DEVICE UNDER TEST:	Symbol MC9060	**RELATIVE PERMITTIVITY:**	50.84
RELATIVE HUMIDITY:	31.3%	**CONDUCTIVITY:**	2.006
PHANTOM S/NO:	HeadBox01.csv	**LIQUID TEMPERATURE:**	21.8°C
PHANTOM ROTATION:	0°	**MAX SAR Y-AXIS LOCATION:**	0.00 mm
DUT POSITION:	LCD facing in holster	**MAX SAR Z-AXIS LOCATION:**	-112.60 mm
ANTENNA CONFIGURATION:	Fixed internal	**MAX E FIELD:**	3.45 V/m
TEST FREQUENCY:	2441 & 2462MHz	**SAR 1g:**	0.017 W/kg
AIR FACTORS:	500 / 410 / 385	**SAR 10g:**	0.008 W/kg
CONVERSION FACTORS:	0.468 / 0.468 / 0.468	**SAR START:**	0.005 W/kg
TYPE OF MODULATION:	CW (WLAN) & CW (Bluetooth)	**SAR END:**	0.005 W/kg
MODN. DUTY CYCLE:	100%	**SAR DRIFT DURING SCAN:**	0.00 dB
DIODE COMPRESSION FACTORS (V*200):	20 / 20 / 20	**PROBE BATTERY LAST CHANGED:**	29/03/04
INPUT POWER LEVEL:	100mW	**EXTRAPOLATION:**	poly4

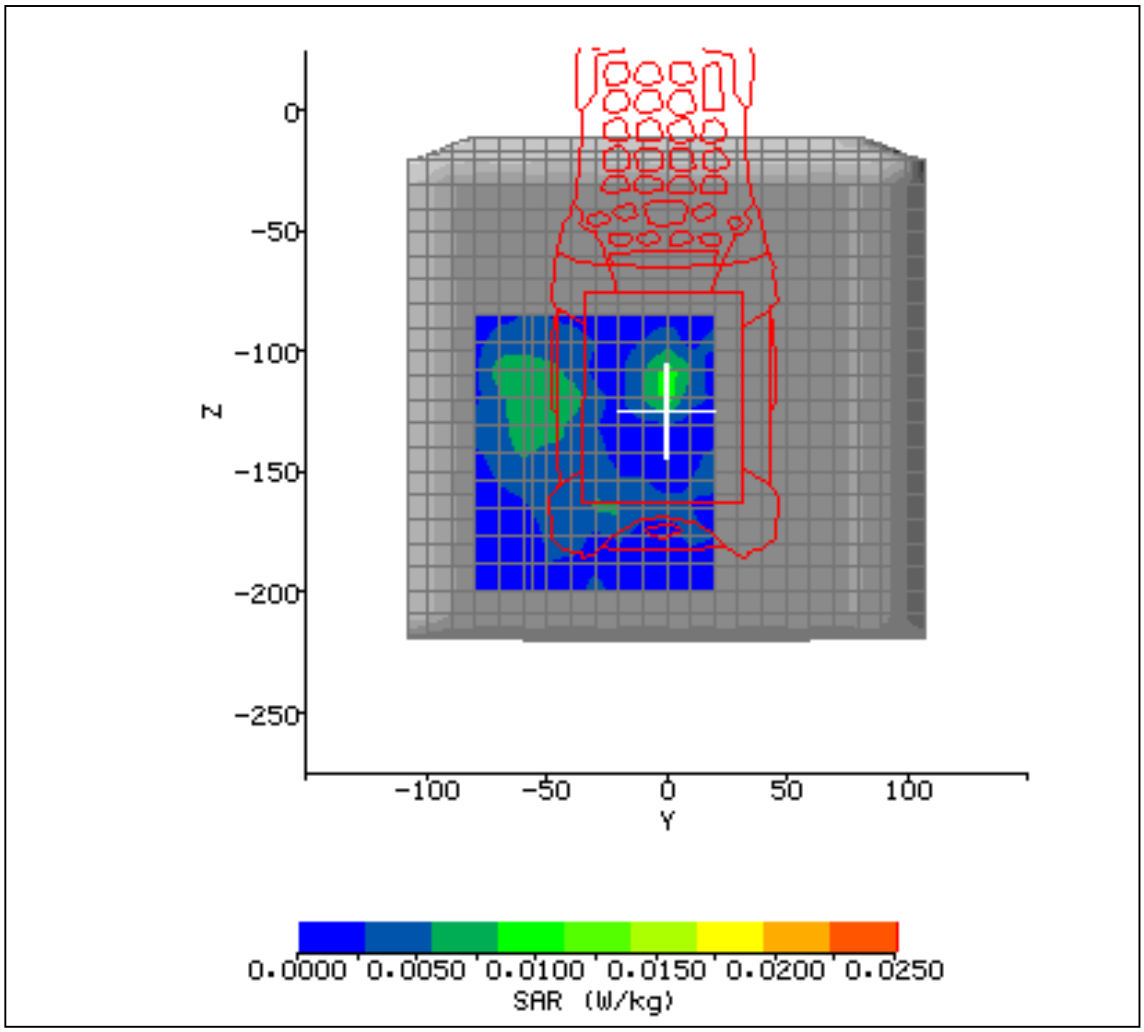

Figure 4– Second peak identified in figure 3

2.8 TEST RESULTS INCLUDING SAR DISTRIBUTIONS (AREA SCANS – 2D)

SYSTEM / SOFTWARE:	SARA2 / 2.3 VPM	**INPUT POWER DRIFT:**	0.0 dB
DATE / TIME:	31/03/2004 16:17:07	**DUT BATTERY MODEL/NO:**	BATMOD
FILENAME:	612324_004.txt	**PROBE SERIAL NUMBER:**	0084
AMBIENT TEMPERATURE:	22.0°C	**LIQUID SIMULANT:**	2450 Body
DEVICE UNDER TEST:	Symbol MC9060	**RELATIVE PERMITTIVITY:**	50.84
RELATIVE HUMIDITY:	33.6%	**CONDUCTIVITY:**	2.006
PHANTOM S/NO:	HeadBox01.csv	**LIQUID TEMPERATURE:**	22.0°C
PHANTOM ROTATION:	0°	**MAX SAR Y-AXIS LOCATION:**	-56.00 mm
DUT POSITION:	LCD facing in holster	**MAX SAR Z-AXIS LOCATION:**	-128.70 mm
ANTENNA CONFIGURATION:	Fixed internal	**MAX E FIELD:**	2.89 V/m
TEST FREQUENCY:	2462 & 2441MHz	**SAR 1g:**	0.013 W/kg
AIR FACTORS:	500 / 410 / 385	**SAR 10g:**	0.007 W/kg
CONVERSION FACTORS:	0.468 / 0.468 / 0.468	**SAR START:**	0.001 W/kg
TYPE OF MODULATION:	CW (WLAN) & CW (Bluetooth)	**SAR END:**	0.001 W/kg
MODN. DUTY CYCLE:	100%	**SAR DRIFT DURING SCAN:**	0.00 dB
DIODE COMPRESSION FACTORS (V*200):	20 / 20 / 20	**PROBE BATTERY LAST CHANGED:**	29/03/04
INPUT POWER LEVEL:	100mW	**EXTRAPOLATION:**	poly4

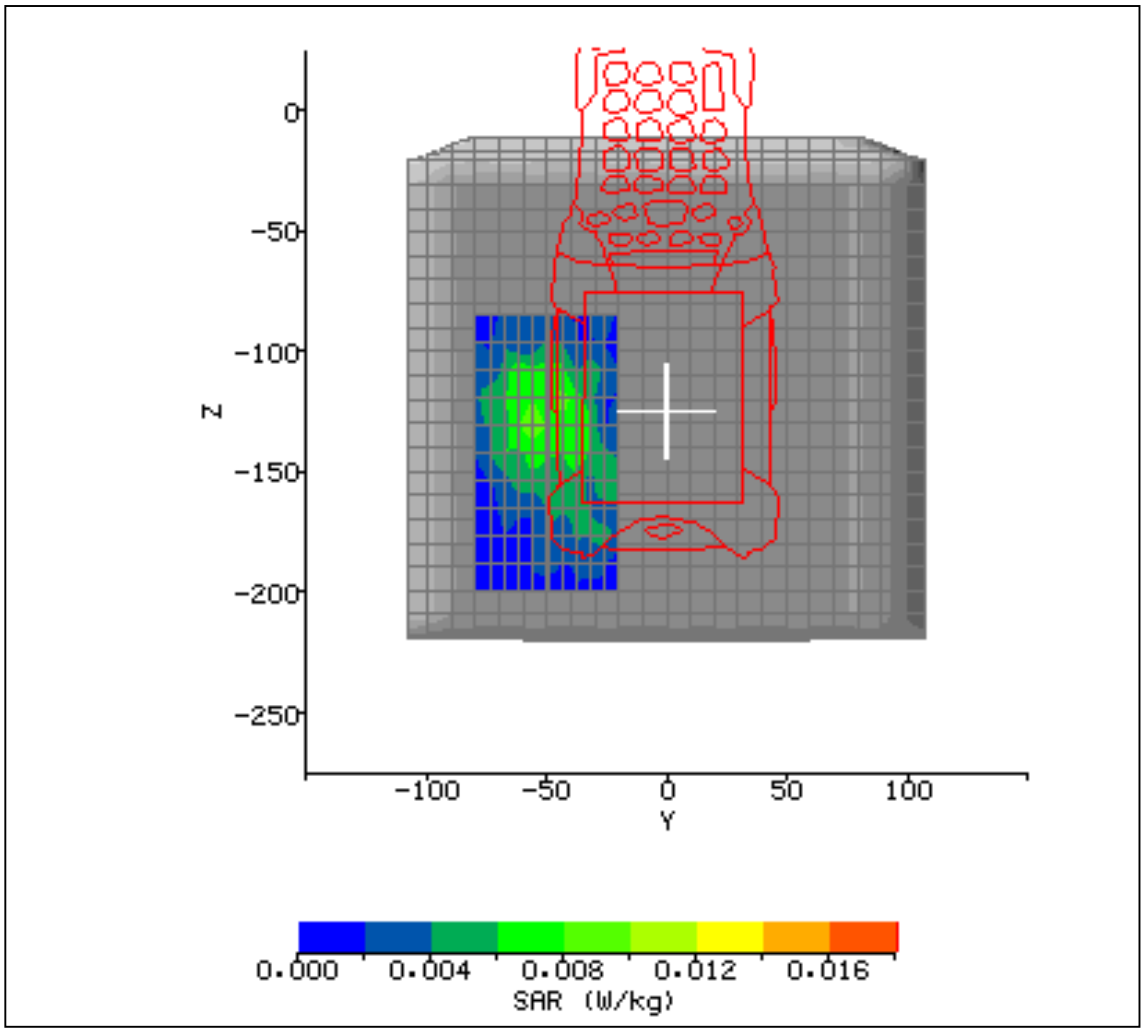

Figure 5 – Third peak identified in figure 3

2.9 TEST POSITIONAL PHOTOGRAPHS

Figure 6 – With the device in a Mobile Computer Holster With the LCD side facing the rear of the Holster and the belt Clip in contact with the flat phantom

2.10 RECORD PHOTOGRAPHS

Figure 7. Front View

2.11 USER INFORMATION

The holster in normal operation will be placed on the belt at the side of the body. This position has been assessed for SAR compliance.

The following SAR statement will be included in the Regulatory Guide for the MC9060.

‘ This device was tested for typical body-worn operation with the LCD facing the user when stored in the Holster. A minimum separation distance of 1.0 cm must be maintained between this device and the body. The use of third-party belt-clips, holsters, and similar accessories should not contain metallic components in its assembly. The use of these accessories that do not satisfy these requirements may not comply with FCC RF exposure compliance requirements, and should not be used.’

2.12 COPYRIGHT

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