CNAL No. L0442

Deutscher Akkreditierungs Rat DAR

No. DAT-P-114/01-10

TEST REPORT

No. SAR2005017

Test name	Electromagnetic Field (Specific Absorption Rate)
Product	GSM/PCS Dual Frequency with GPRS Function Mobile Phone
Model	Alcatel OT-C551a
FCC ID	RAD021
Client	Alcatel Suzhou Telecommunications Co.,Ltd., Shanghai Branch
Type of test	Entrusted

Telecommunication Metrology Center

of Ministry of Information Industry

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GENERAL SUMMARY

Product	GSM/PCS Dual Frequency with GPRS Function Mobile Phone	**Model** / **Trade mark**	Alcatel OT-C551a
Client	Alcatel Suzhou Telecommunications Co.,Ltd., Shanghai Branch	**Manufacturer**	TCL&Alcatel Mobile Phones
Type of test	Entrusted	**Arrival Date of sample**	July 7, 2005
Place of sampling	(Blank)	**Carrier of the samples**	Xianjin Gu
Quantity of the samples	One	**Date of product**	(Blank)
Base of the samples	(Blank)	**Items of test**	SAR
Series number	010574000022055		
Standard(s)	**ANSI C95.1–1999:** IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz **OET Bulletin 65 (Edition 97-01) and Supplement C (Edition 01-01):** Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits. **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.		
Conclusion	Localized Specific Absorption Rate (SAR) of this portable wireless equipment has been measured in all cases requested by the relevant standards cited in Clause 5.2 of this test report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report. General Judgment: **Pass** (Stamp) **Date of issue:** August 3, 2005		
Comment	TX Freq. Band: 824–849MHz (GSM) 1850–1910MHz (PCS) Max. Power: 2 Watt (GSM) 1 Watt (PCS) Antenna Character: / The test result only responds to the measured sample.		

Approved by (Lu Minniu) **Revised by** (Wang Hongbo) **Performed by** (Qi Dianyuan)

TABLE OF CONTENT

1 COMPETENCE AND WARRANTIES

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3 DESCRIPTION OF EUT

3.1 Addressing Information Related to EUT

Table 1: Applicant (The Client)

Name or Company	Alcatel Suzhou Telecommunications Co.,Ltd., Shanghai Branch
Address/Post	30-F, Times square, No.500 Zhangyang Road, Shanghai, PR China
City	Shanghai
Postal Code	200122
Country	China
Telephone	021-50544555-4308
Fax	/

Table 2: Manufacturer

Name or Company	TCL&Alcatel Mobile Phones
Address/Post	32 Avenue,Kleber
City	Colombes
Postal Code	92707
Country	France
Telephone	/
Fax	/

3.2 Constituents of EUT

Table 3: Constituents of Samples

Description	Model	Serial Number	Manufacturer
Handset	Alcatel OT-C551a	010574000022055	TCL&Alcatel Mobile Phones
Lithium Battery	Li-ion	3DS10241AAAA	SONY
AC/DC Adapter	SR	3DS09371AAAA	ASTEC

Figure 1: Constituents of the sample (Lithium Battery is in the Handset)

3.3 General Description

Equipment Under Test (EUT) is a model of GSM Phase II portable Mobile Station (MS) with integrated antenna. It consists of Handset and normal options: Lithium Battery and AC/DC Adapter as Table 3 and Fig. 1. Since it is a Dual-Band MS (GSM/PCS), SAR is tested respectively for two bands. It has the GPRS function, and class is 10.

The sample undergoing test was selected by the Client.
Components list please refer to documents of the manufacturer.

4 OPERATIONAL CONDITIONS DURING TEST

4.1 Schematic Test Configuration

During SAR test, EUT is in Traffic Mode (Channel Allocated) at Normal Voltage Condition. A communication link is set up with a System Simulator (SS) by air link, and a call is established. The Absolute Radio Frequency Channel Number (ARFCN) is allocated to 128, 190 and 251 respectively in the case of GSM 850 MHz, or to 512, 661 and 810 respectively in the case of PCS 1900 MHz. The EUT is commanded to operate at maximum transmitting power.

The EUT shall use its internal transmitter. The antenna(s), battery and accessories shall be those specified by the manufacturer. The EUT battery must be fully charged and checked periodically during the test to ascertain uniform power output. If a wireless link is used, the antenna connected to the output of the base station simulator shall be placed at least 50 cm away from the handset. The signal transmitted by the simulator to the antenna feeding point shall be lower than the output power level of the handset by at least 30 dB.

4.2 SAR Measurement Set-up

These measurements were performed with the automated near-field scanning system DASY4 from Schmid & Partner Engineering AG (SPEAG). The system is based on a high precision robot (working range greater than 0.9m) which positions the probes with a positional repeatability of better than ± 0.02mm. Special E- and H-field probes have been developed for measurements close to material discontinuity, the sensors of which are directly loaded with a Schottky diode and connected via highly resistive lines (length =300mm) to the data acquisition unit.

A cell controller system contains the power supply, robot controller, teaches pendant (Joystick), and remote control, is used to drive the robot motors. The PC consists of the Micron Pentium III 800 MHz computer with Windows 2000 system and SAR Measurement Software DASY4, A/D interface card, monitor, mouse, and keyboard. The Stäubli Robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the PC plug-in card.

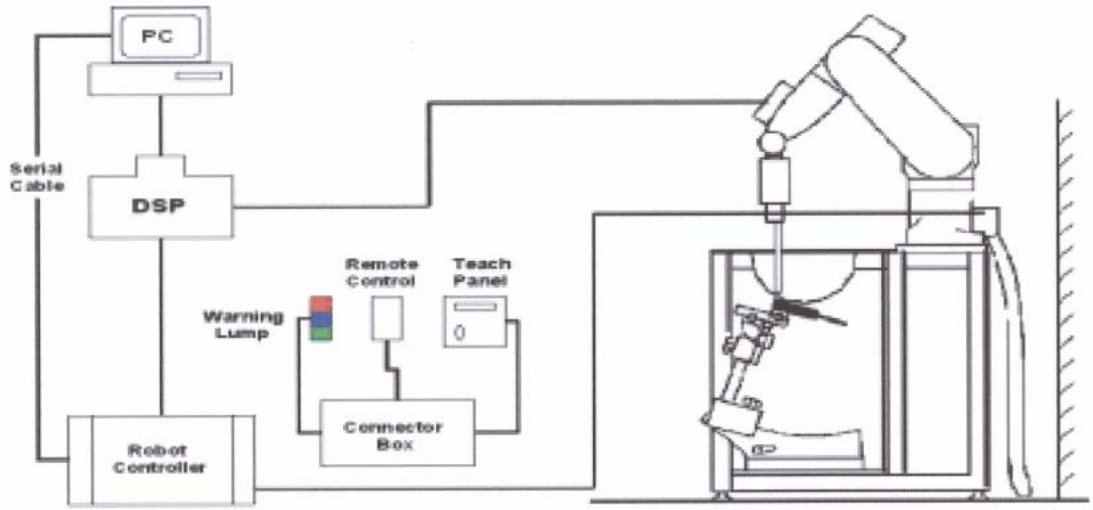


Figure 2. SAR Lab Test Measurement Set-up

The DAE3 consists of a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16 bit AD-converter and a command decoder and control logic unit. Transmission to the PC-card is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe mounting device includes two different sensor systems for frontal and sidewise probe contacts. They are also used for mechanical surface detection and probe collision detection. The robot uses its own controller with a built in VME-bus computer.

4.3 Dasy4 E-field Probe System

The SAR measurements were conducted with the dosimetric probe ET3DV6 (manufactured by SPEAG), designed in the classical triangular configuration and optimized for dosimetric evaluation. The probe has been calibrated according to the standard procedure with an accuracy of better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB.

ET3DV6 Probe Specification

Construction	Symmetrical design with triangular core Built-in optical fiber *for* surface detection System(ET3DV6 only) Built-in shielding against static charges PEEK enclosure material(resistant to organic solvents, e.q., glycol)
Calibration	In air from 10 MHz to 2.5 GHz In brain and muscle simulating tissue at frequencies of 450MHz, 900MHz and 1.8GHz (accuracy±8%) Calibration for other liquids and frequencies upon request
Frequency	I 0 MHz to > 6 GHz; Linearity: ±0.2 dB (30 MHz to 3 GHz)

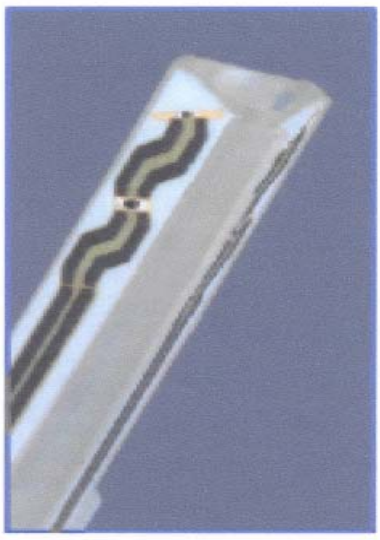


Figure 3. ET3DV6 E-field Probe

Directivity	±0.2 dB in brain tissue (rotation around probe axis)
	±0.4 dB in brain tissue (rotation normal probe axis)
Dynamic Range	5u W/g to > 100mW/g; Linearity: ±0.2dB
Surface Detection	±0.2 mm repeatability in air and clear liquids
	over diffuse reflecting surface(ET3DV6 only)
Dimensions	Overall length: 330mm
	Tip length: 16mm
	Body diameter: 12mm
	Tip diarneter: 6.8mm
	Distance from probe tip to dipole centers: 2.7mm
Application	General dosimetry up to 3GHz
	Compliance tests of mobile phones
	Fast automatic scanning in arbitrary phantoms

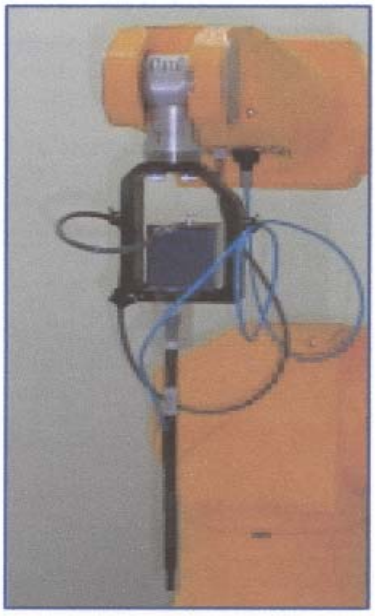


Figure 4. ET3DV6 E-field probe

4.4 E-field Probe Calibration

Each probe is calibrated according to a dosimetric assessment procedure with accuracy better than ± 10%. The spherical isotropy was evaluated and found to be better than ± 0.25dB. The sensitivity parameters (NormX, NormY, NormZ), the diode compression parameter (DCP) and the conversion factor (ConvF) of the probe are tested.

The free space E-field from amplified probe outputs is determined in a test chamber. This is performed in a TEM cell for frequencies bellow 1 GHz, and in a wave guide above 1 GHz for free space. For the free space calibration, the probe is placed in the volumetric center of the cavity and at the proper orientation with the field. The probe is then rotated 360 degrees.

E-field temperature correlation calibration is performed in a flat phantom filled with the appropriate simulated brain tissue. The measured free space E-field in the medium correlates to temperature rise in a dielectric medium. For temperature correlation calibration a RF transparent thermistor-based temperature probe is used in conjunction with the E-field probe.

$$\mathbf{SAR} = \mathbf{C}\frac{\Delta T}{\Delta t}$$

Where: Δt = Exposure time (30 seconds),

C = Heat capacity of tissue (brain or muscle),

ΔT = Temperature increase due to RF exposure.

Or

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

Where:

σ = Simulated tissue conductivity,

ρ = Tissue density (kg/m3).

4.5 Other Test Equipment

4.5.1 Device Holder for Transmitters

In combination with the Generic Twin Phantom V3.0, the Mounting Device (POM) enables the rotation of the mounted transmitter in spherical coordinates whereby the rotation points is the ear opening. The devices can be easily, accurately, and repeat ably positioned according to the FCC and CENELEC specifications. The device holder can be locked at different phantom locations (left head, right head, flat phantom).

Figure 5. Device Holder

4.5.2 Phantom

The Generic Twin Phantom is constructed of a fiberglass shell integrated in a wooden table. The shape of the shell is based on data from an anatomical study designed to determine the maximum exposure in at least 90% of all users. It enables the dosimetric evaluation of left and right hand phone usage as well as body mounted usage at the flat phantom region. A cover prevents the evaporation of the liquid. Reference markings on the Phantom allow the complete setup of all predefined phantom positions and measurement grids by manually teaching three points in the robot.

Shell Thickness	2±0. l mm
Filling Volume	Approx. 20 liters
Dimensions	810 x l000 x 500 mm (H x L x W)
Available	Special

4.6 Equivalent Tissues

The liquid used for the frequency range of 800-2000 MHz consisted of water, sugar, salt and Cellulose. The liquid has previously been proven to be suited for worst-case. The Table 4 shows the detail solution. It's satisfying the latest tissue dielectric parameters requirements proposed by the IEEE 1528.

Figure 6. Generic Twin Phantom

Table 4. Composition of the Head Tissue Equivalent Matter

MIXTURE%	FREQUENCY 835MHz (Brain)
Water	40.29
Sugar	57.90
Salt	1.38
Preventol	0.18
Cellulose	0.24
Dielectric Parameters Target Value	f=835MHz ε=41.5 σ=0.90

MIXTURE %	FREQUENCY 1900MHz(Brain)
Water	55.242
Glycol monobutyl	44.452
Salt	0.306
Dielectric Parameters Target Value	f=1900MHz ε=40.0 σ=1.40

Table 5. Composition of the Body Tissue Equivalent Matter

MIXTURE %	FREQUENCY 835MHz(Body)
Water	52.4
Sugar	45.0
Salt	1.4
Preventol	0.1
Cellulose	1.0
Dielectric Parameters Target Value	f=835MHz ε=55.2 σ=0.97

MIXTURE %	FREQUENCY 1900MHz(Body)
Water	69.91
Glycol monobutyl	29.96
Salt	0.13
Dielectric Parameters Target Value	f=1900MHz ε=53.3 σ=1.52

4.7 System Specifications

4.7.1 Robotic System Specifications

Specifications

Positioner: Stäubli Unimation Corp. Robot Model: RX90L

Repeatability: ±0.02 mm

No. of Axis: 6

Data Acquisition Electronic (DAE) System

Cell Controller

Processor: Pentium III
Clock Speed: 800 MHz
Operating System: Windows 2000
Data Converter
Features: Signal Amplifier, multiplexer, A/D converter, and control logic
Software: DASY4 software
Connecting Lines: Optical downlink for data and status info.
Optical uplink for commands and clock

5 CHARACTERISTICS OF THE TEST

5.1 Applicable Limit Regulations

ANSI C95.1–1999: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
It specifies the maximum exposure limit of **1.6 W/kg** as averaged over any 1 gram of tissue for portable devices being used within 20 cm of the user in the uncontrolled environment.

5.2 Applicable Measurement Standards

OET Bulletin 65 (Edition 97-01) and Supplement C (Edition 01-01): Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits.
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.

They specify the measurement method for demonstration of compliance with the SAR limits for such equipments.

5.3 Character of the Test

Handsets that are held on the side of a person's head next to the ear have been tested using realistic-shaped head phantoms.

Since it may be used for body-worn situation, the mobile phone is tested with the flat phantom to simulate this case.

Since it has the GPRS function, the measurements were performed with 2 TX slots with the flat phantom.

6 LABORATORY ENVIRONMENT

Table 6: The Ambient Conditions during EMF Test

Temperature	Min. = 15 °C, Max. = 30 °C
Relative humidity	Min. = 30%, Max. = 70%
Ground system resistance	< 0.5 Ω
Ambient noise is checked and found very low and in compliance with requirement of standards. Reflection of surrounding objects is minimized and in compliance with requirement of standards.	

7 TEST RESULTS

7.1 Dielectric Performance

Table 7: Dielectric Performance of Head Tissue Simulating Liquid

Measurement is made at temperature 22.5 °C and relative humidity 49%. Liquid temperature during the test: 21.4°C			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	41.5	0.90
	1900 MHz	40.0	1.40
Measurement value (Average of 10 tests)	835 MHz	41.5	0.93
	1900 MHz	40.27	1.45

Table 8: Dielectric Performance of Body Tissue Simulating Liquid

Measurement is made at temperature 22.6 °C and relative humidity 51%. Liquid temperature during the test: 22.0°C			
/	**Frequency**	**Permittivity ε**	**Conductivity σ (S/m)**
Target value	835 MHz	55.2	0.97
	1900 MHz	53.3	1.52
Measurement value (Average of 10 tests)	835 MHz	53.84	1.00
	1900 MHz	55.85	1.55

7.2 System Validation

Table 9: System Validation

Measurement is made at temperature 23.3 °C, relative humidity 47%, input power 250 mW. Liquid temperature during the test: 22.6°C					
Liquid parameters		**Frequency**	**Permittivity ε**		**Conductivity σ (S/m)**
		835 MHz	41.2		0.93
		1900 MHz	39.66		1.46
Verification results	**Frequency**	**Target value (W/kg)**		**Measurement value (W/kg)**	
		10 g Average	**1 g Average**	**10 g Average**	**1 g Average**
	835 MHz	1.55	2.375	1.52	2.35
	1900 MHz	5.125	9.925	4.91	9.8

7.3 Conducted Power

Table 10: Conducted Power

	Conducted Power		
	Channel 128 (824.2MHz)	**Channel 190 (836.4MHz)**	**Channel 251 (848.8MHz)**
TCH (1TX)	32.6	32.5	32.4
GPRS (2TX)	32.6	32.5	32.4

	Conducted Power		
	Channel 512 (1850.2 MHz)	**Channel 661 (1880.0 MHz)**	**Channel 810 (1909.8 MHz)**
TCH (1TX)	30.6	30.0	29.5
GPRS (2TX)	30.6	30.0	29.5

The above mentioned values are conducted values. They were provided by TCL&Alcatel Mobile Phones. These values are within 5% tolerance with the power measured.

To control the output power stability during the SAR test the used DASY4 system calculates the power drift by measuring the e-field at the same location at the beginning and at the end of the measurement for each test position. These drift values can be found in the above tables labeled as: (Drift [dB]). This ensures that the power drift during one measurement is within 5%. Please note that we add the measured “power drift” values from the DASY4 system since the used CMU200 delivers only 1 usable position after decimal point and therefore only one power level is listed in the above tables.

7.4 Summary of Measurement Results (Head, GSM850 MHz Band)

Table 11: SAR Values (GSM 850 MHz Band, head)

Limit of SAR (W/kg)	1 g Average	Power Drift (dB)
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average	
Left hand, Touch cheek, Bottom frequency (See fig 1 in annex C)	0.409	-0.00
Left hand, Touch cheek, Mid frequency (See fig 3 in annex C)	0.578	0.016
Left hand, Touch cheek, Top frequency (See fig 5 in annex C)	0.815	-0.068
Left hand, Tilt 15 Degree, Bottom frequency (See fig 7 in annex C)	0.345	0.072
Left hand, Tilt 15 Degree, Mid frequency (See fig 9 in annex C)	0.470	-0.022
Left hand, Tilt 15 Degree, Top frequency (See fig 11 in annex C)	0.642	-0.00
Right hand, Touch cheek, Bottom frequency (See fig 13 in annex C)	0.329	0.020
Right hand, Touch cheek, Mid frequency (See fig 15 in annex C)	0.458	0.01
Right hand, Touch cheek, Top frequency (See fig 17 in annex C)	0.628	-0.022
Right hand, Tilt 15 Degree, Bottom frequency(See fig 19 in annex C)	0.313	0.048
Right hand, Tilt 15 Degree, Mid frequency (See fig 21 in annex C)	0.436	0.01
Right hand, Tilt 15 Degree, Top frequency (See fig 23 in annex C)	0.617	-0.054

7.5 Summary of Measurement Results (Head, PCS 1900 MHz Band)

Table 12: SAR Values (PCS 1900 MHz Band, head)

Limit of SAR (W/kg)	1 g Average	Power Drift (dB)
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average	
Left hand, Touch cheek, Bottom frequency (See fig 25 in annex C)	0.557	-0.034
Left hand, Touch cheek, Mid frequency (See fig 27 in annex C)	0.451	-0.097
Left hand, Touch cheek, Top frequency (See fig 29 in annex C)	0.337	0.038
Left hand, Tilt 15 Degree, Bottom frequency (See fig 31 in annex C)	0.600	-0.185
Left hand, Tilt 15 Degree, Mid frequency (See fig 33 in annex C)	0.465	-0.070
Left hand, Tilt 15 Degree, Top frequency (See fig 35 in annex C)	0.370	-0.159
Right hand, Touch cheek, Bottom frequency (See fig 37 in annex C)	0.418	-0.188
Right hand, Touch cheek, Mid frequency (See fig 39 in annex C)	0.377	-0.168
Right hand, Touch cheek, Top frequency (See fig 41 in annex C)	0.253	-0.047
Right hand, Tilt 15 Degree, Bottom frequency(See fig 43 in annex C)	0.443	-0.189
Right hand, Tilt 15 Degree, Mid frequency (See fig 45 in annex C)	0.377	-0.147
Right hand, Tilt 15 Degree, Top frequency (See fig 47 in annex C)	0.323	-0.133

7.6 Summary of Measurement Results (Body-Worn, GSM850 MHz Band, distance 20mm)

Table 13: SAR Values (GSM850 MHz Band, body-worn, distance 20mm)

Limit of SAR (W/kg)	1 g Average	Power Drift (dB)
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average	
Display of EUT toward the phantom, Bottom Frequency (See fig 49 in annex C)	0.166	-0.021
Display of EUT toward the phantom, Mid Frequency (See fig 51 in annex C)	0.238	-0.035
Display of EUT toward the phantom, Top Frequency (See fig 53 in annex C)	0.351	-0.038
Display of EUT toward the ground, Bottom frequency (See fig 55 in annex C)	0.494	0.01
Display of EUT toward the ground, Mid frequency (See fig 57 in annex C)	0.624	0.036
Display of EUT toward the ground, Top frequency (See fig 59 in annex C)	0.639	0.01

7.7 Summary of Measurement Results (Body-Worn, GSM+GPRS 850 MHz Band, distance 20mm)

Table 14: SAR Values (GSM+GPRS 850 MHz Band, body-worn, distance 20mm)

Limit of SAR (W/kg)	1 g Average	Power Drift (dB)
	1.6	
Test Case	Measurement Result (W/kg)	
	1 g Average	
Display of EUT toward the phantom, Bottom Frequency (See fig 73 in annex C)	0.295	-0.039

Display of EUT toward the phantom, Mid Frequency (See fig 75 in annex C)	0.434	-0.091
Display of EUT toward the phantom, Top Frequency (See fig 77 in annex C)	0.663	-0.133
Display of EUT toward the ground, Bottom frequency (See fig 79 in annex C)	0.963	0.00
Display of EUT toward the ground, Mid frequency (See fig 81 in annex C)	1.23	-0.109
Display of EUT toward the ground, Top frequency (See fig 83 in annex C)	1.22	0.050

7.8 Summary of Measurement Results (Body-Worn, PCS 1900 MHz Band, distance 20mm)

Table 15: SAR Values (PCS 1900 MHz Band, body-worn, distance 20mm)

Limit of SAR (W/kg)	**1 g Average**	**Power Drift (dB)**
	1.6	
Test Case	**Measurement Result (W/kg)**	
	1 g Average	
Display of EUT toward the phantom, Bottom Frequency (See fig 61 in annex C)	0.082	-0.089
Display of EUT toward the phantom, Mid Frequency (See fig 63 in annex C)	0.074	-0.093
Display of EUT toward the phantom, Top Frequency (See fig 65 in annex C)	0.072	0.049
Display of EUT toward the ground, Bottom frequency (See fig 67 in annex C)	0.184	-0.130
Display of EUT toward the ground, Mid frequency (See fig 69 in annex C)	0.154	-0.038

Display of EUT toward the ground, Top frequency (See fig 71 in annex C)	0.135	-0.188

7.9 Summary of Measurement Results (Body-Worn, PCS+GPRS 1900 MHz Band, distance 20mm)

Table 16: SAR Values (PCS+GPRS 1900 MHz Band, body-worn, distance 20mm)

Limit of SAR (W/kg)	**1 g Average**	**Power Drift (dB)**
	1.6	
Test Case	**Measurement Result (W/kg)**	
	1 g Average	
Display of EUT toward the phantom, Bottom Frequency (See fig 85 in annex C)	0.134	0.056
Display of EUT toward the phantom, Mid Frequency (See fig 87 in annex C)	0.085	-0.037
Display of EUT toward the phantom, Top Frequency (See fig 89 in annex C)	0.075	-0.170
Display of EUT toward the ground, Bottom frequency (See fig 91 in annex C)	0.259	0.182
Display of EUT toward the ground, Mid frequency (See fig 93 in annex C)	0.154	-0.101
Display of EUT toward the ground, Top frequency (See fig 95 in annex C)	0.133	-0.095

7.10 Conclusion

Localized Specific Absorption Rate (SAR) of this portable wireless device has been measured in all cases requested by the relevant standards cited in Clause 5.2 of this report. Maximum localized SAR is below exposure limits specified in the relevant standards cited in Clause 5.1 of this test report.

8 Measurement Uncertainty

SN	*a*	*Type*	*c*	*d*	*e = f(d,k)*	*f*	*h = c x f / e*	*k*
	Uncertainty Component		Tol. (± %)	Prob. Dist.	Div.	c_i (1 g)	1 g u_i (±%)	v_i
1	System repetivity	A	0.5	N	1	1	0.5	9
	Measurement System							
2	Probe Calibration	B	5	N	2	1	2.5	∞
3	Axial Isotropy	B	4.7	R	$\sqrt{3}$	$(1\text{-}cp)^{1/2}$	4.3	∞
4	Hemispherical Isotropy	B	9.4	R	$\sqrt{3}$	$\sqrt{c_p}$		∞
5	Boundary Effect	B	0.4	R	$\sqrt{3}$	1	0.23	∞
6	Linearity	B	4.7	R	$\sqrt{3}$	1	2.7	∞
7	System Detection Limits	B	1.0	R	$\sqrt{3}$	1	0.6	∞
8	Readout Electronics	B	1.0	N	1	1	1.0	∞
9	RF Ambient Conditions	B	3.0	R	$\sqrt{3}$	1	1.73	∞
10	Probe Positioner Mechanical Tolerance	B	0.4	R	$\sqrt{3}$	1	0.2	∞
11	Probe Positioning with respect to Phantom Shell	B	2.9	R	$\sqrt{3}$	1	1.7	∞
12	Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	B	3.9	R	$\sqrt{3}$	1	2.3	∞
	Test sample Related							
13	Test Sample Positioning	A	4.9	N	1	1	4.9	*N*-1

14	Device Holder Uncertainty	A	6.1	N	1	1	6.1	*N*-1
15	Output Power Variation - SAR drift measurement	B	5.0	R	$\sqrt{3}$	1	2.9	∞
	Phantom and Tissue Parameters							
16	Phantom Uncertainty (shape and thickness tolerances)	B	1.0	R	$\sqrt{3}$	1	0.6	∞
17	Liquid Conductivity - deviation from target values	B	5.0	R	$\sqrt{3}$	0.64	1.7	∞
18	Liquid Conductivity - measurement uncertainty	B	5.0	N	1	0.64	1.7	*M*
19	Liquid Permittivity - deviation from target values	B	5.0	R	$\sqrt{3}$	0.6	1.7	∞
20	Liquid Permittivity - measurement uncertainty	B	5.0	N	1	0.6	1.7	*M*
	Combined Standard Uncertainty			RSS			11.25	
	Expanded Uncertainty (95% CONFIDENCE INTERVAL)			*K=2*			22.5	

9 MAIN TEST INSTRUMENTS

Table 19: List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	Agilent 8753E	US38433212	September 1, 2004	One year
02	Dielectric Probe Kit	Agilent 85070C	US99360113	No Calibration Requested	
03	Power meter	HP 436A	2101A11858	September 12, 2004	One year
04	Power sensor	HP 8481H	2349A07289		
05	Signal Generator	MG 3633A	M73386	No Calibration Requested	
06	Amplifier	AT 50S1G4A	26549	No Calibration Requested	
07	Validation Kit 835MHz	SPEAG D 835V2	443	December 9, 2003	Two years
08	Validation Kit 1900MHz	SPEAG D 1900V2	541	December 12, 2003	Two years
09	BTS	CMU 200	100680	September 13, 2004	One year
10	E-field Probe	SPEAG ET3DV6	1600	January 20, 2005	One year
11	DAE	SPEAG DAE3	589	October 21, 2004	One year

10 TEST PERIOD

The test is performed from July 14, 2005 to July 21 2005.

11 TEST LOCATION

The test is performed at Radio Communication & Electromagnetic Compatibility Laboratory of Telecommunication Metrology Center of Ministry of Information Industry

END OF REPORT BODY

ANNEX A: MEASUREMENT PROCESS

The evaluation was performed with the following procedure:

Step 1: Measurement of the SAR value at a fixed location above the ear point was measured and was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of the head was measured at a distance of 3.9 mm from the inner surface of the shell. The area covered the entire dimension of the head and the horizontal grid spacing was 20 mm x 20 mm. Based on this data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point, a volume of 32 mm x 32 mm x 34 mm was assessed by measuring 7 x 7x 7 points. On this basis of this data set, the spatial peak SAR value was evaluated with the following procedure:

a. The data at the surface were extrapolated, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.2 mm. The extrapolation was based on a least square algorithm. A polynomial of the fourth order was calculated through the points in z-axes. This polynomial was then used to evaluate the points between the surface and the probe tip.

b. The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1g or 10g) were computed using the 3D-Spline interpolation algorithm. The 3D-spline is composed of three one-dimensional splines with the "Not a knot"-condition (in x ~ y and z-directions). The volume was integrated with the trapezoidal algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

c. All neighboring volumes were evaluated until no neighboring volume with a higher average value was found.

Step 4: Re-measurement the SAR value at the same location as in Step 1. If the value changed by more than 5%, the evaluation is repeated.

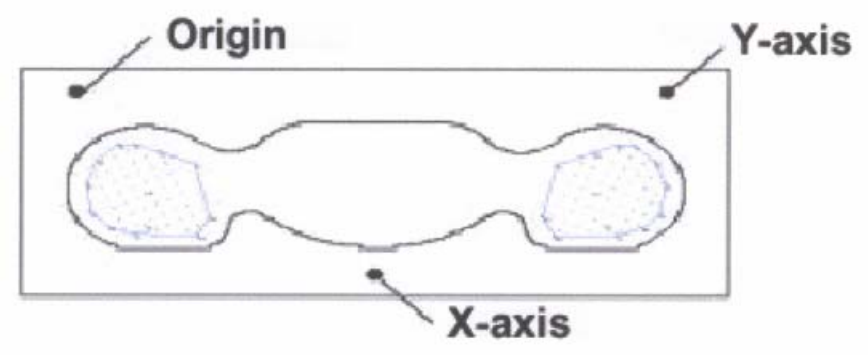
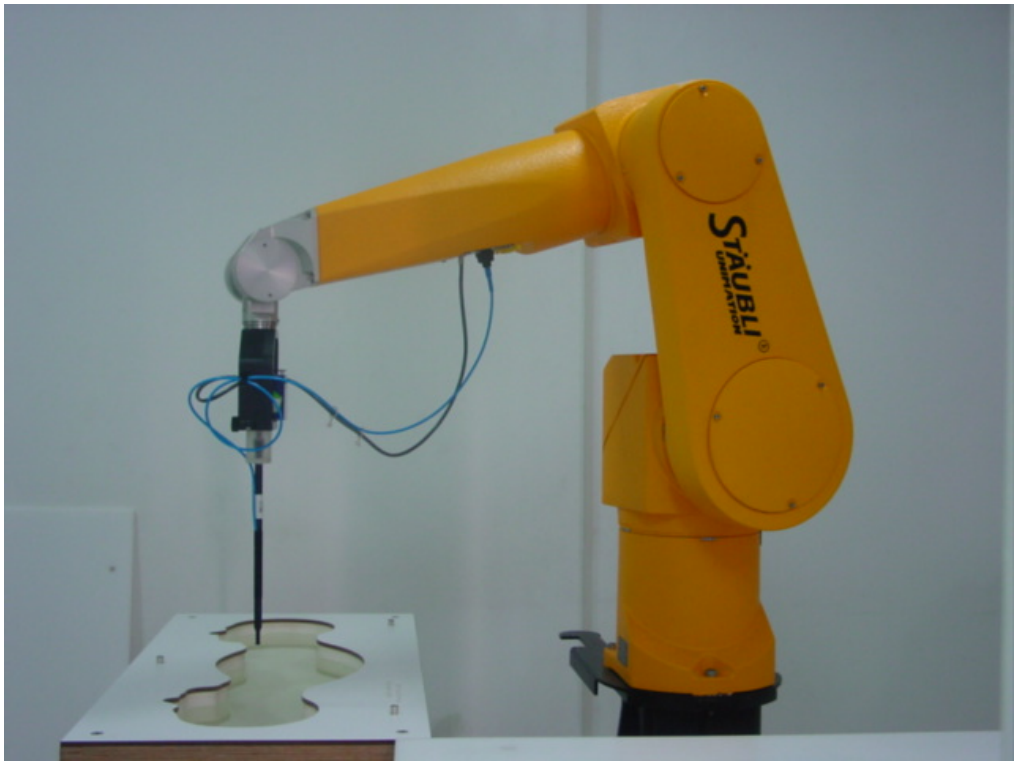
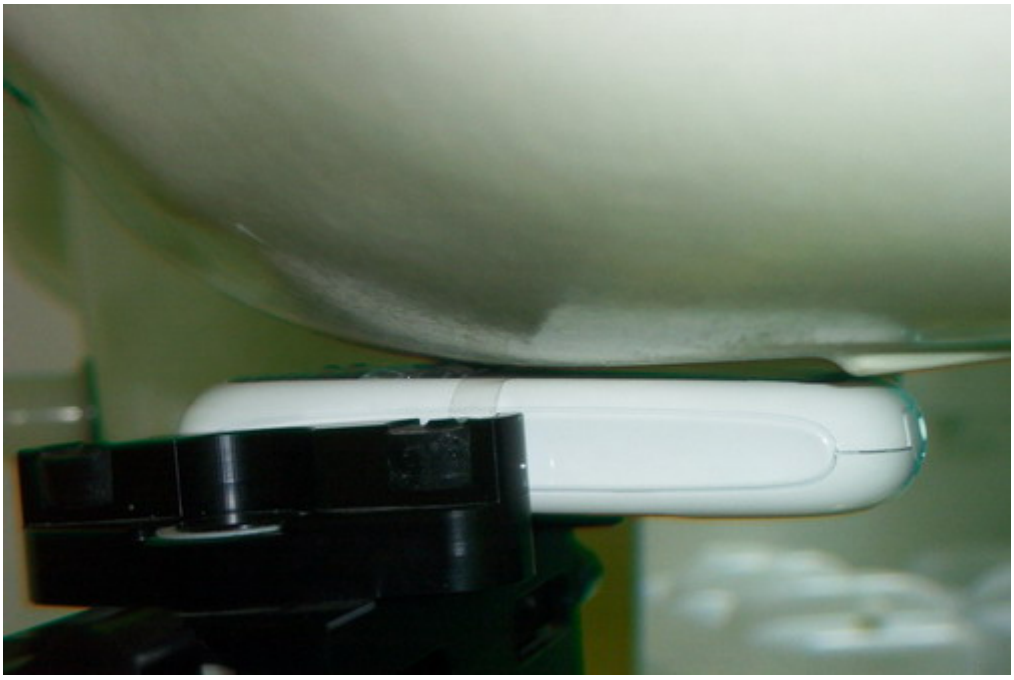


Figure 2 SAR Measurement Points in Area Scan

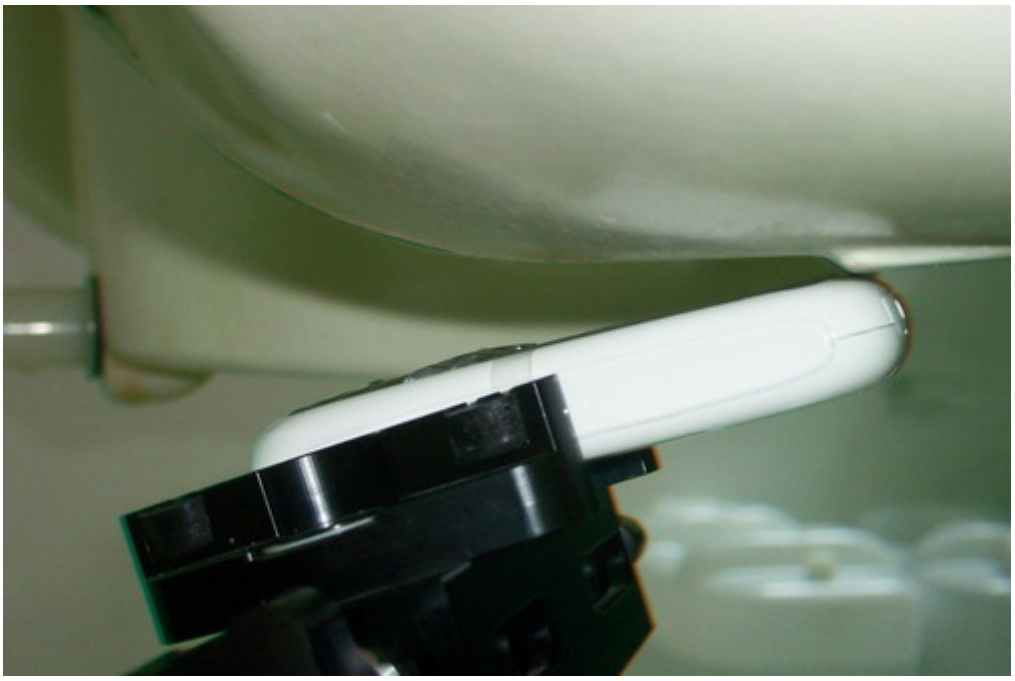
ANNEX B： TEST LAYOUT



Picture 1 Specific Absorption Rate Test Layout



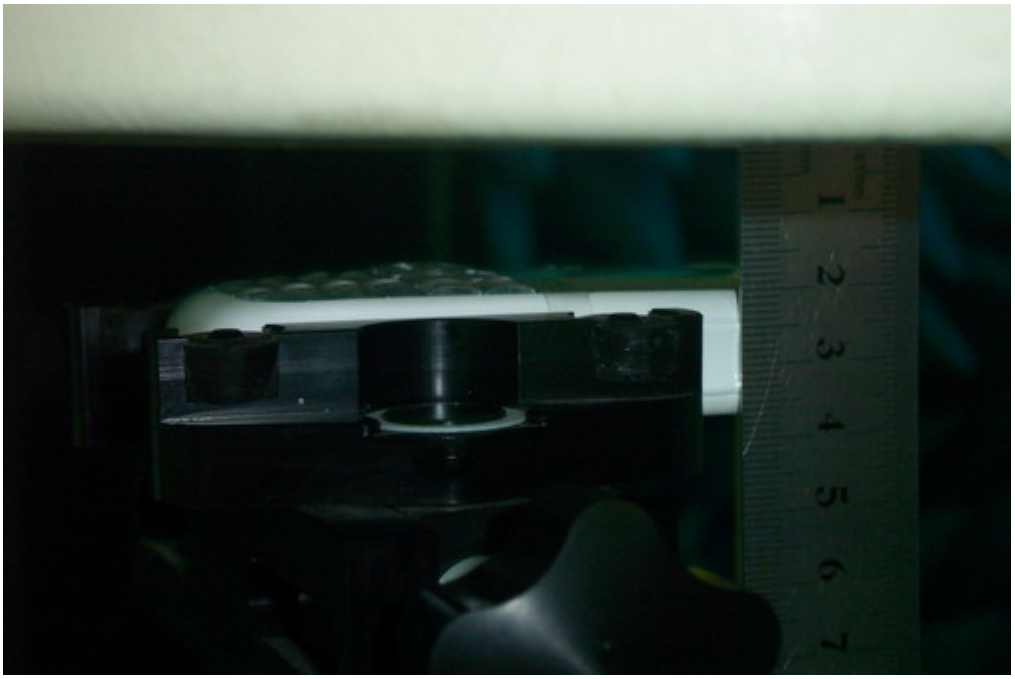
Picture 2 Left Hand Touch Cheek Position



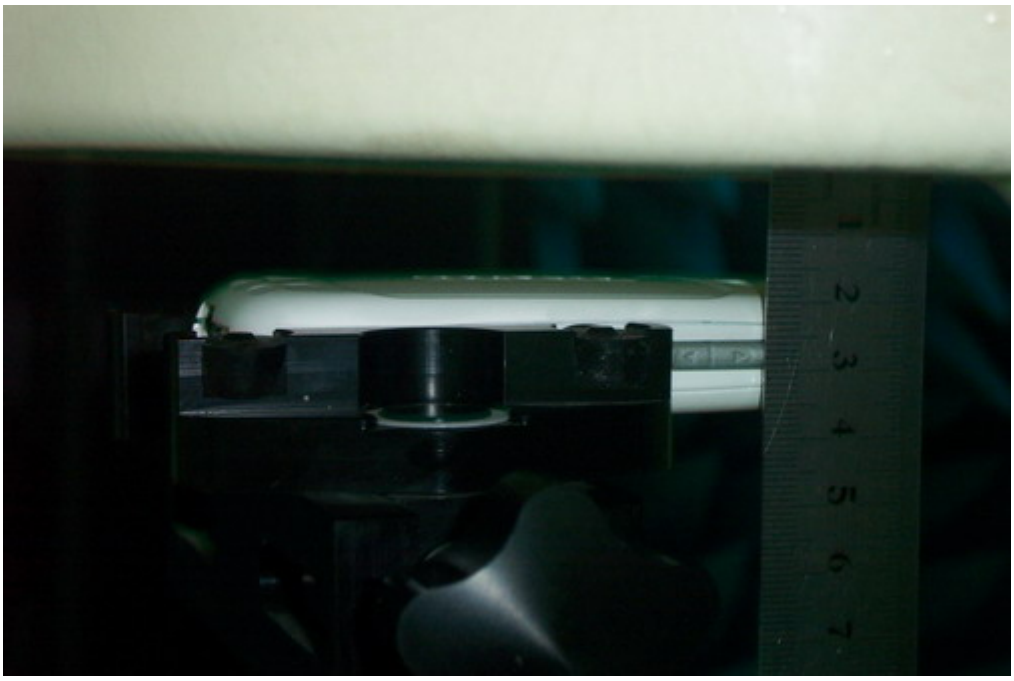
Picture 3 Left Hand Tilt 15° Position

Picture 4 Right Hand Touch Cheek Position

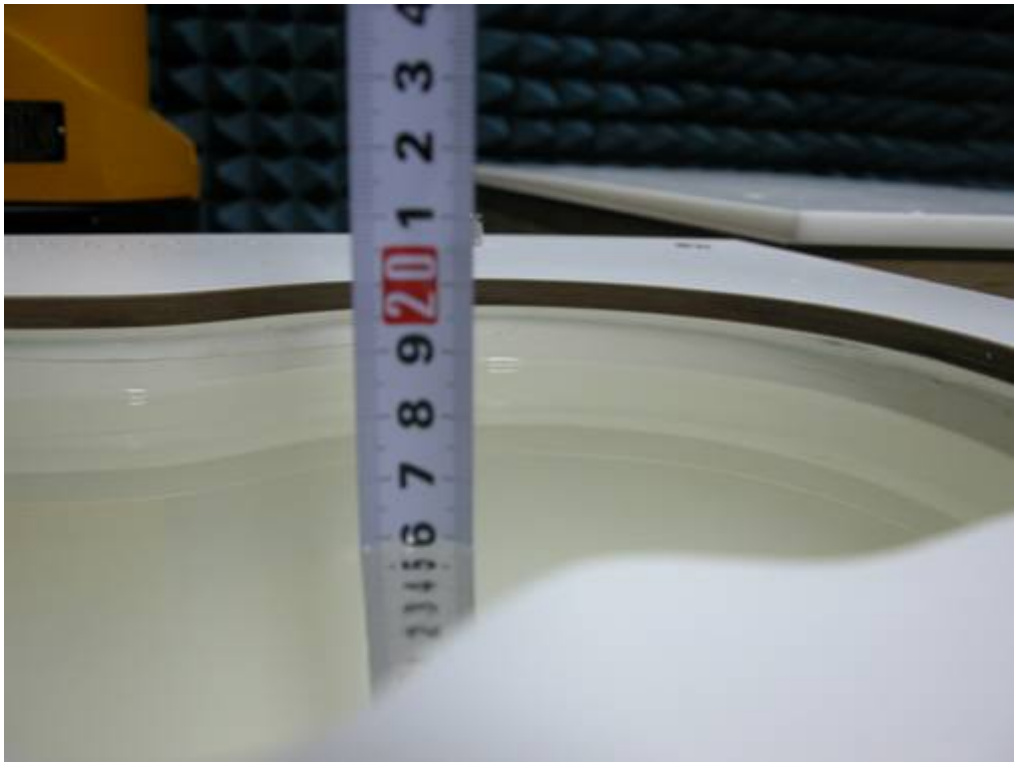
Picture 5 Right Hand Tilt 15° Position



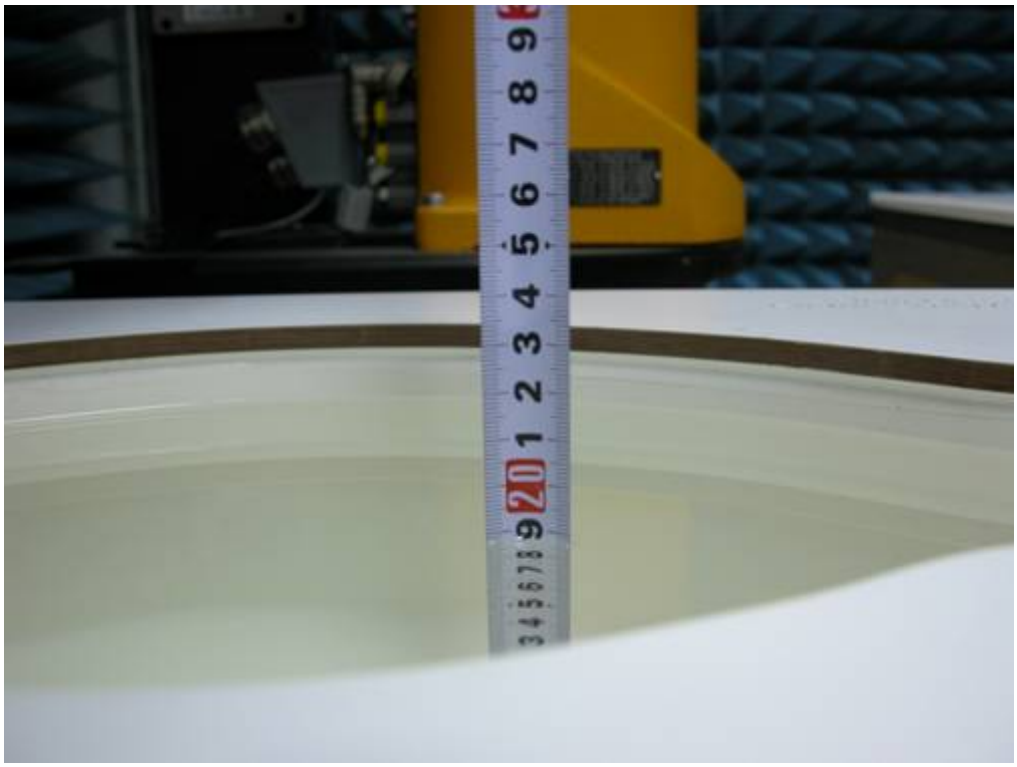
Picture 6 Flat Phantom -- Body-worn Position (toward phantom, the distance from handset to the bottom of the Phantom is 20mm)



Picture 7 Flat Phantom -- Body-worn Position (toward ground, the distance from handset to the bottom of the Phantom is 20mm)



Picture 8 Liquid depth in the Head Phantom



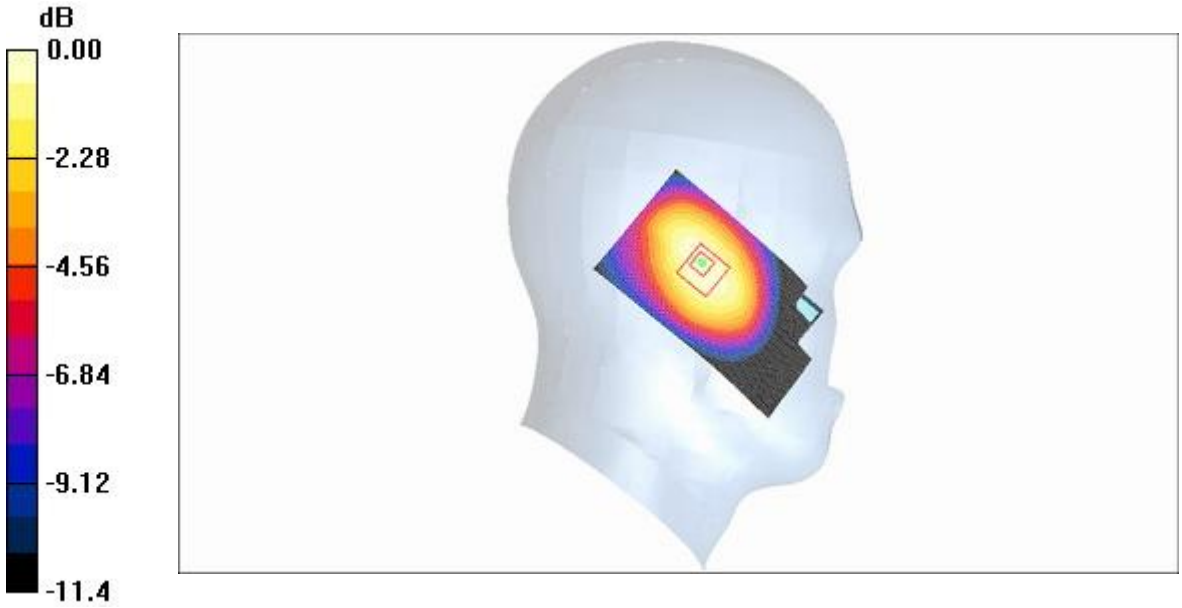
Picture 9 Liquid depth in the Flat Phantom

ANNEX C: GRAPH RESULTS

850 Left Cheek Low

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Cheek Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.5 V/m; Power Drift = -0.00 dB
Maximum value of SAR (interpolated) = 0.444 mW/g

Cheek Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.5 V/m; Power Drift = -0.00 dB
Maximum value of SAR (measured) = 0.437 mW/g
Peak SAR (extrapolated) = 0.576 W/kg
SAR(1 g) = 0.409 mW/g; SAR(10 g) = 0.281 mW/g



0 dB = 0.437mW/g

Fig. 1 Left Hand Touch Cheek 850MHz CH128

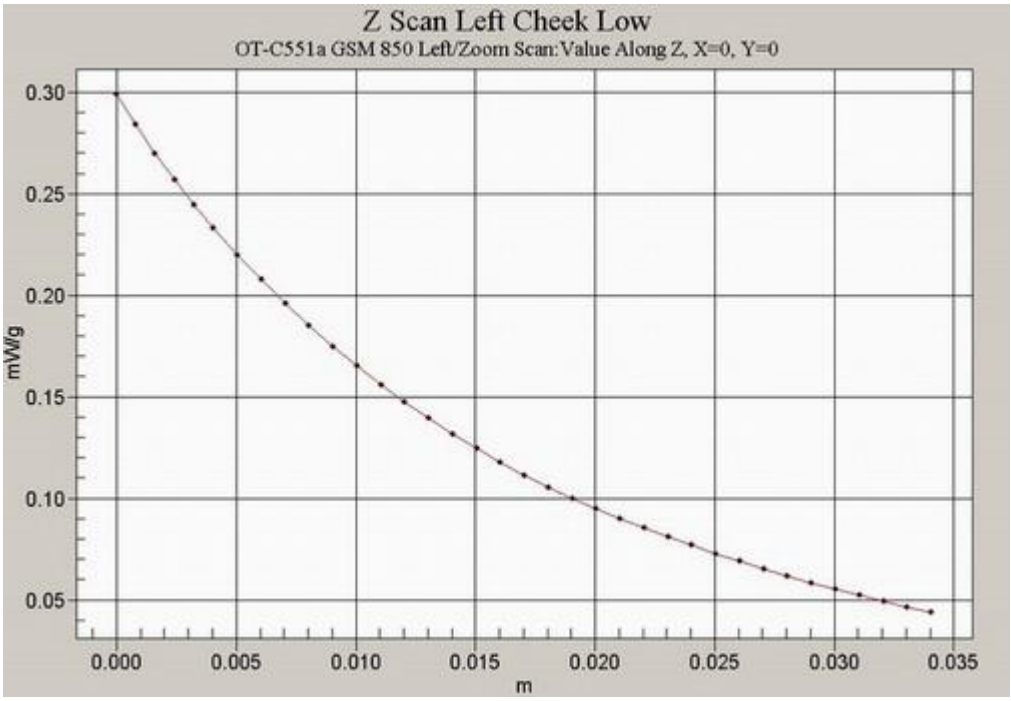
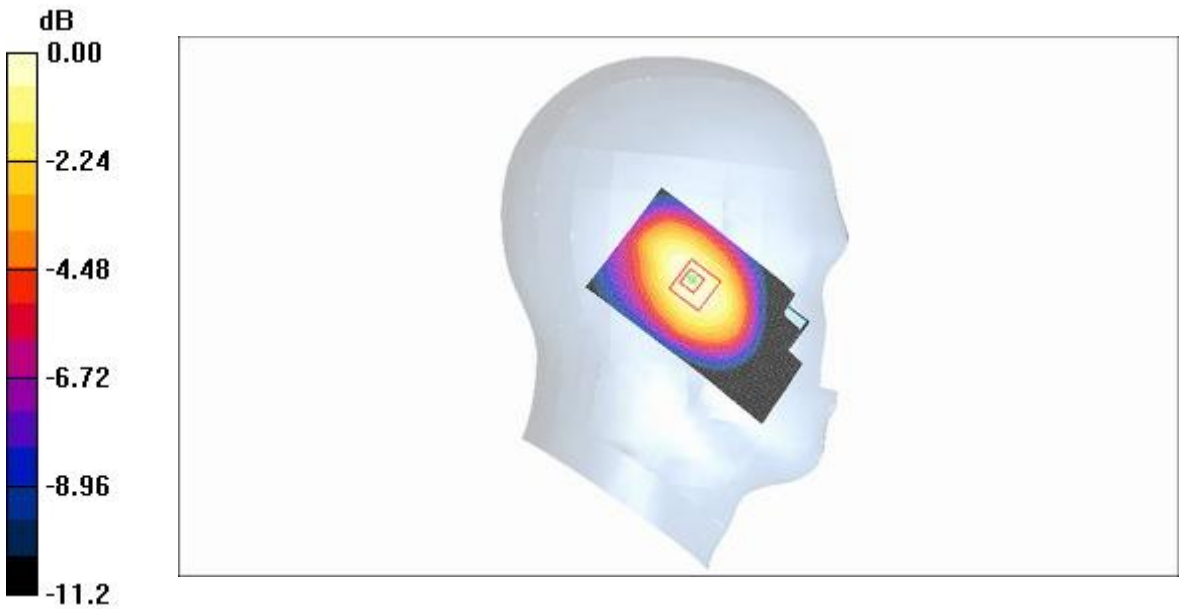


Fig. 2 Z-Scan at power reference point (Left Hand Touch Cheek 850MHz CH128)

850 Left Cheek Middle

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Cheek Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21.7 V/m; Power Drift = 0.016 dB
Maximum value of SAR (interpolated) = 0.629 mW/g

Cheek Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.7 V/m; Power Drift = 0.016 dB
Maximum value of SAR (measured) = 0.615 mW/g
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.578 mW/g; SAR(10 g) = 0.398 mW/g



0 dB = 0.615mW/g

Fig. 3 Left Hand Touch Cheek 850MHz CH190

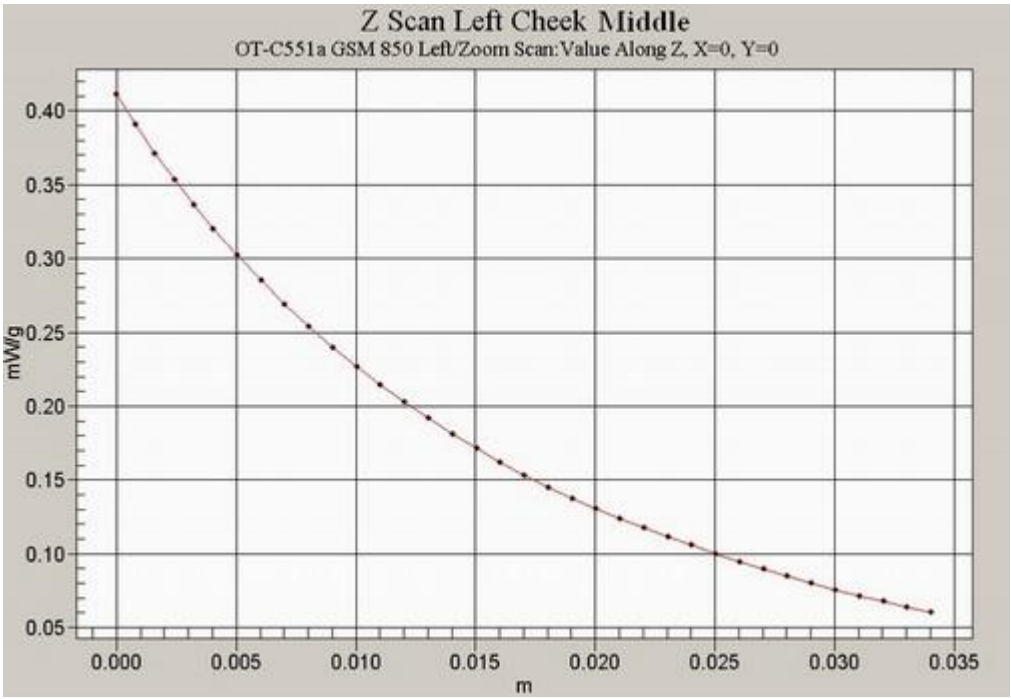
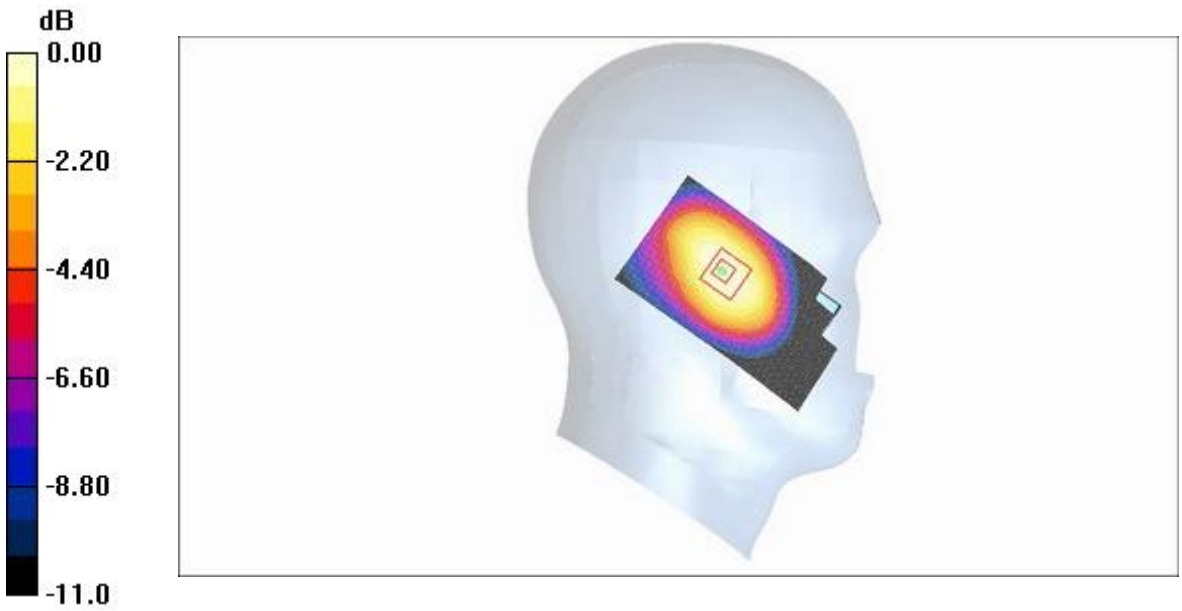


Fig. 4 Z-Scan at power reference point (Left Hand Touch Cheek 850MHz CH190)

850 Left Cheek High

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Cheek High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 25.2 V/m; Power Drift = -0.068 dB
Maximum value of SAR (interpolated) = 0.886 mW/g

Cheek High /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.2 V/m; Power Drift = -0.068 dB
Maximum value of SAR (measured) = 0.869 mW/g
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.564 mW/g



0 dB = 0.869mW/g

Fig. 5 Left Hand Touch Cheek 850MHz CH251

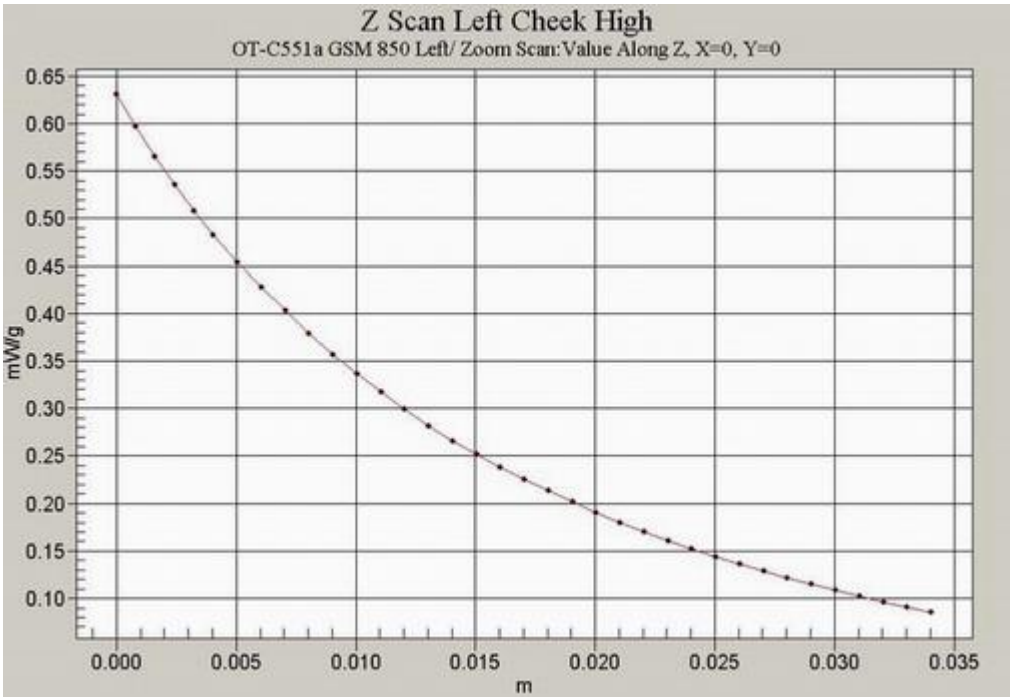
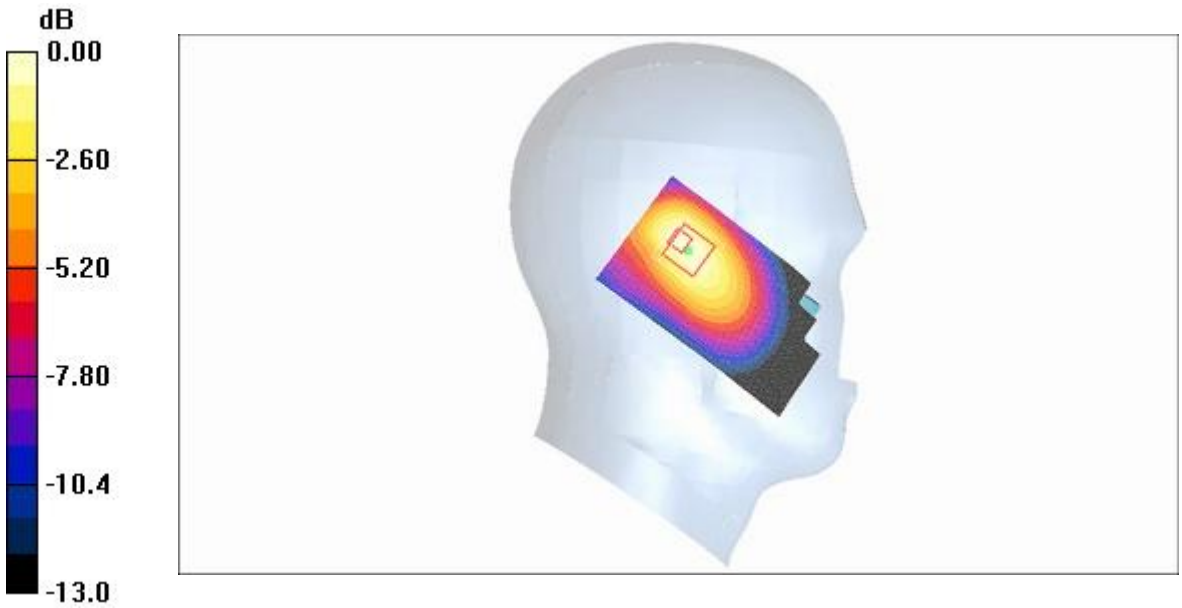


Fig. 6 Z-Scan at power reference point (Left Hand Touch Cheek 850MHz CH251)

850 Left Tilt Low

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Tilt Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.0 V/m; Power Drift = 0.072 dB
Maximum value of SAR (interpolated) = 0.364 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.0 V/m; Power Drift = 0.072 dB
Maximum value of SAR (measured) = 0.372 mW/g
Peak SAR (extrapolated) = 0.598 W/kg
SAR(1 g) = 0.345 mW/g; SAR(10 g) = 0.214 mW/g



0 dB = 0.372mW/g

Fig. 7 Left Hand Tilt 15° 850MHz CH128

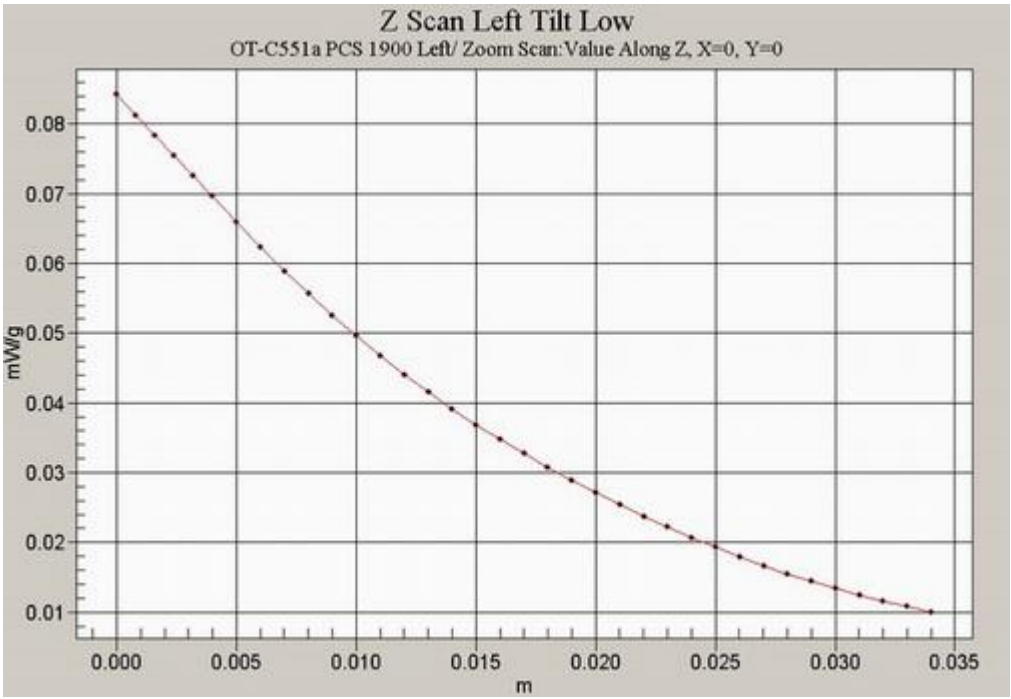
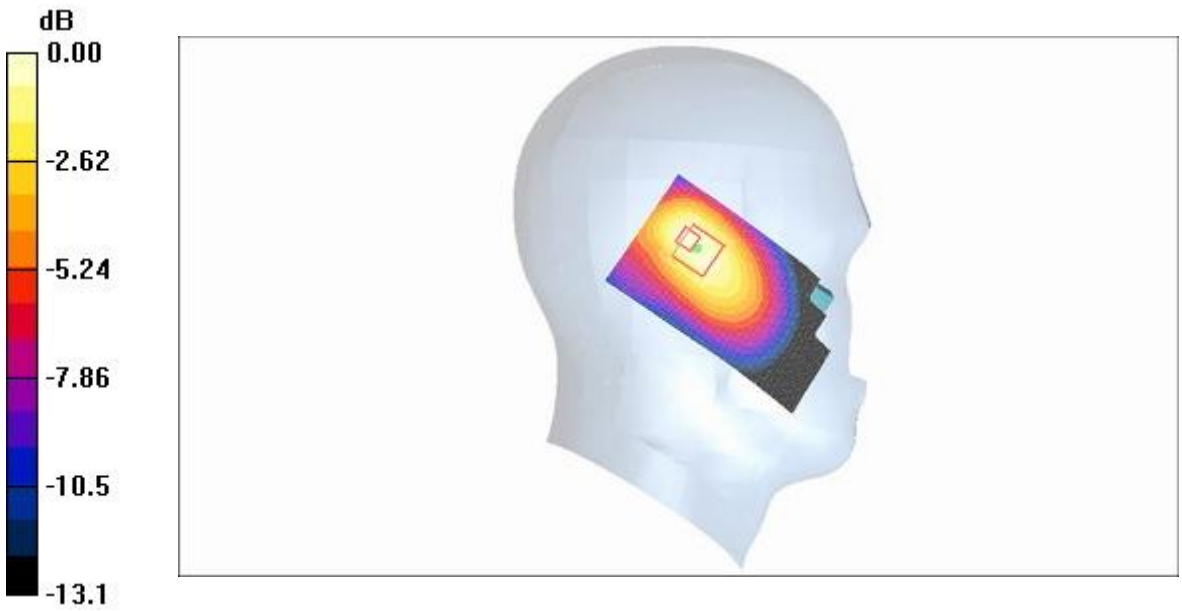


Fig. 8 Z-Scan at power reference point (Left Hand Tilt 15° 850MHz CH128)

850 Left Tilt Middle

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Tilt Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21.1 V/m; Power Drift = -0.022 dB
Maximum value of SAR (interpolated) = 0.499 mW/g

Tilt Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.1 V/m; Power Drift = -0.022 dB
Maximum value of SAR (measured) = 0.510 mW/g
Peak SAR (extrapolated) = 0.812 W/kg
SAR(1 g) = 0.470 mW/g; SAR(10 g) = 0.294 mW/g



0 dB = 0.510mW/g

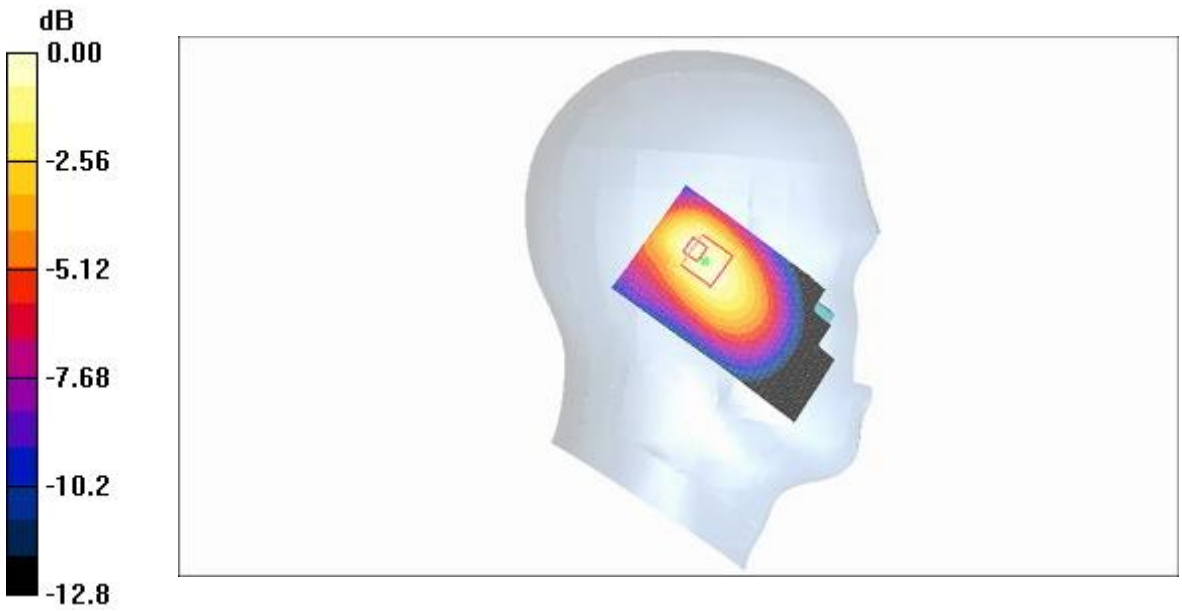
Fig. 9 Left Hand Tilt 15° 850MHz CH190

Fig. 10 Z-Scan at power reference point (Left Hand Tilt 15° 850MHz CH190)

850 Left Tilt High

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Tilt High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 24.7 V/m; Power Drift = -0.00 dB
Maximum value of SAR (interpolated) = 0.691 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.7 V/m; Power Drift = -0.00 dB
Maximum value of SAR (measured) = 0.695 mW/g
Peak SAR (extrapolated) = 1.10 W/kg
SAR(1 g) = 0.642 mW/g; SAR(10 g) = 0.409 mW/g



0 dB = 0.695mW/g

Fig. 11 Left Hand Tilt 15° 850MHz CH251

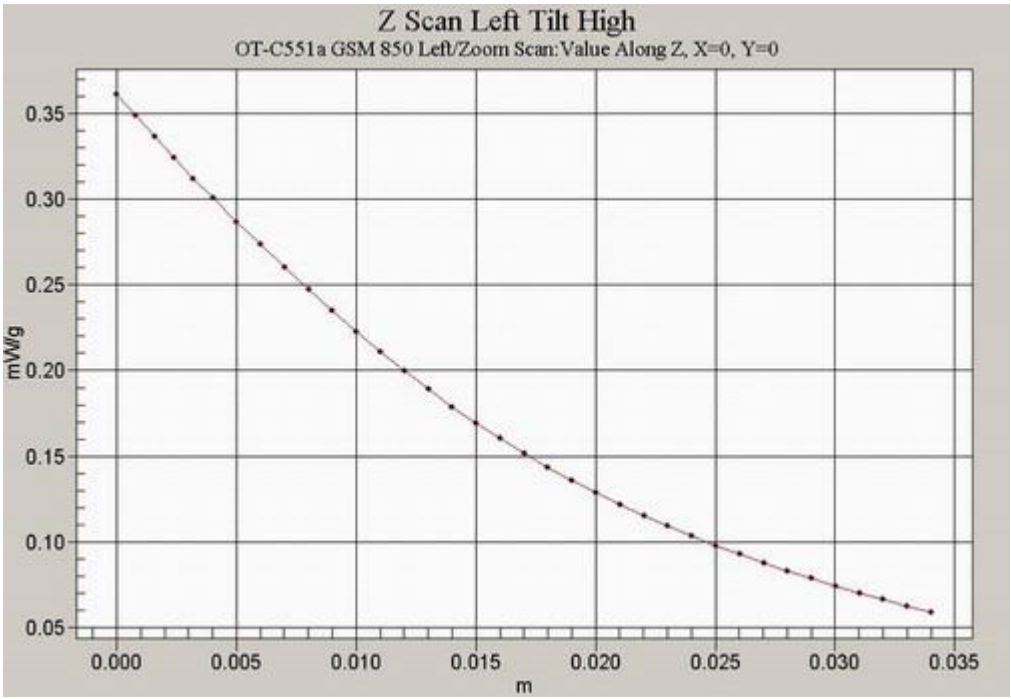
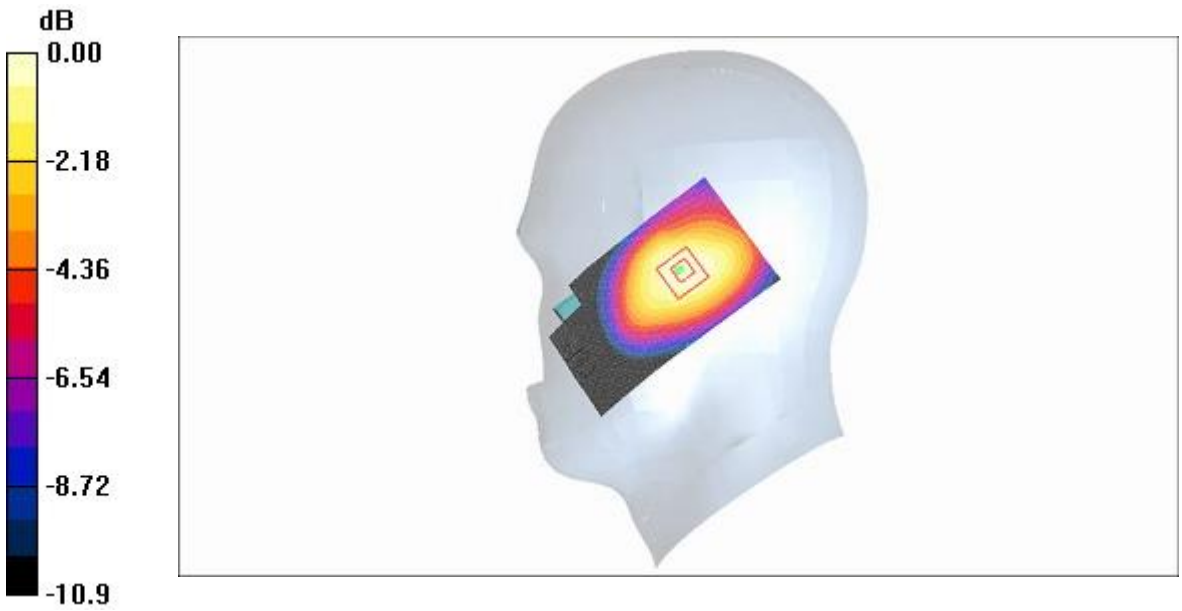


Fig. 12 Z-Scan at power reference point (Left Hand Tilt 15° MHz CH251)

850 Right Cheek Low

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Cheek Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 17.9 V/m; Power Drift = 0.020 dB
Maximum value of SAR (interpolated) = 0.360 mW/g

Cheek Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.9 V/m; Power Drift = 0.020 dB
Maximum value of SAR (measured) = 0.350 mW/g
Peak SAR (extrapolated) = 0.429 W/kg
SAR(1 g) = 0.329 mW/g; SAR(10 g) = 0.231 mW/g



0 dB = 0.350mW/g

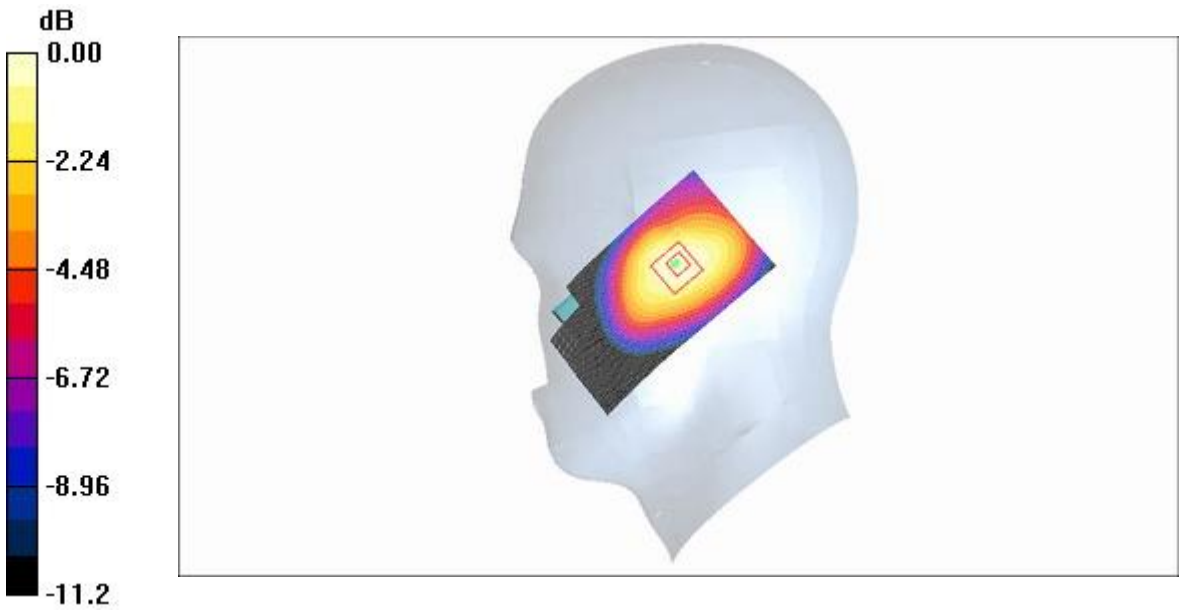
Fig. 13Right Hand Touch Cheek 850MHz CH128

Fig. 14 Z-Scan at power reference point (Right Hand Touch Cheek 850MHz CH128)

850 Right Cheek Middle

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Cheek Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 20.8 V/m; Power Drift = 0.01 dB
Maximum value of SAR (interpolated) = 0.499 mW/g

Cheek Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 20.8 V/m; Power Drift = 0.01 dB
Maximum value of SAR (measured) = 0.486 mW/g
Peak SAR (extrapolated) = 0.598 W/kg
SAR(1 g) = 0.458 mW/g; SAR(10 g) = 0.321 mW/g



0 dB = 0.486mW/g

Fig. 15 Right Hand Touch Cheek 850MHz CH190

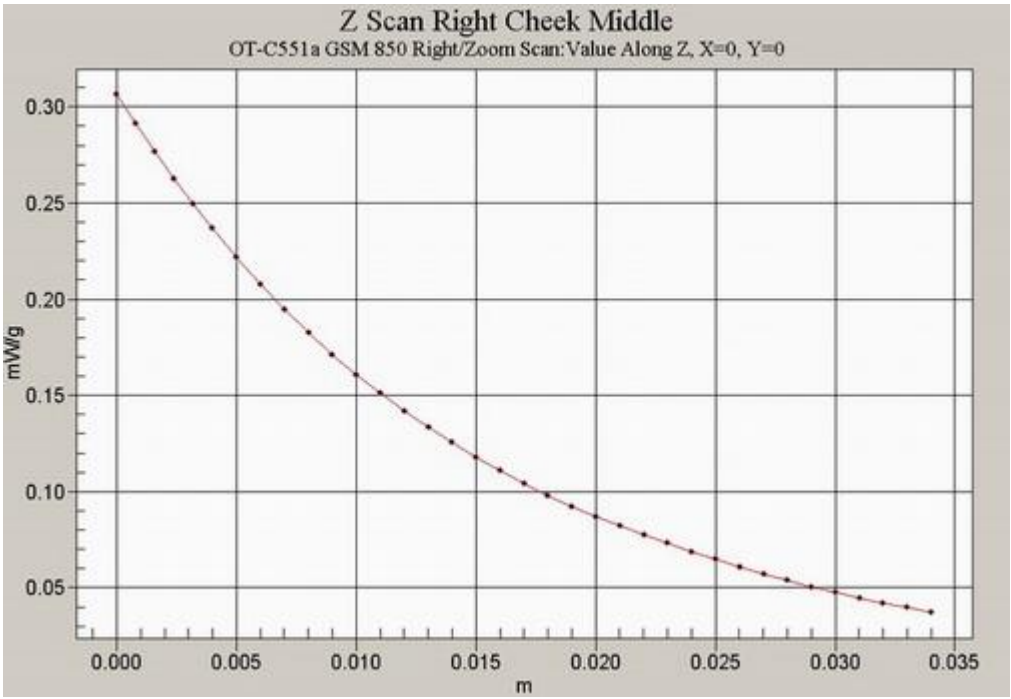
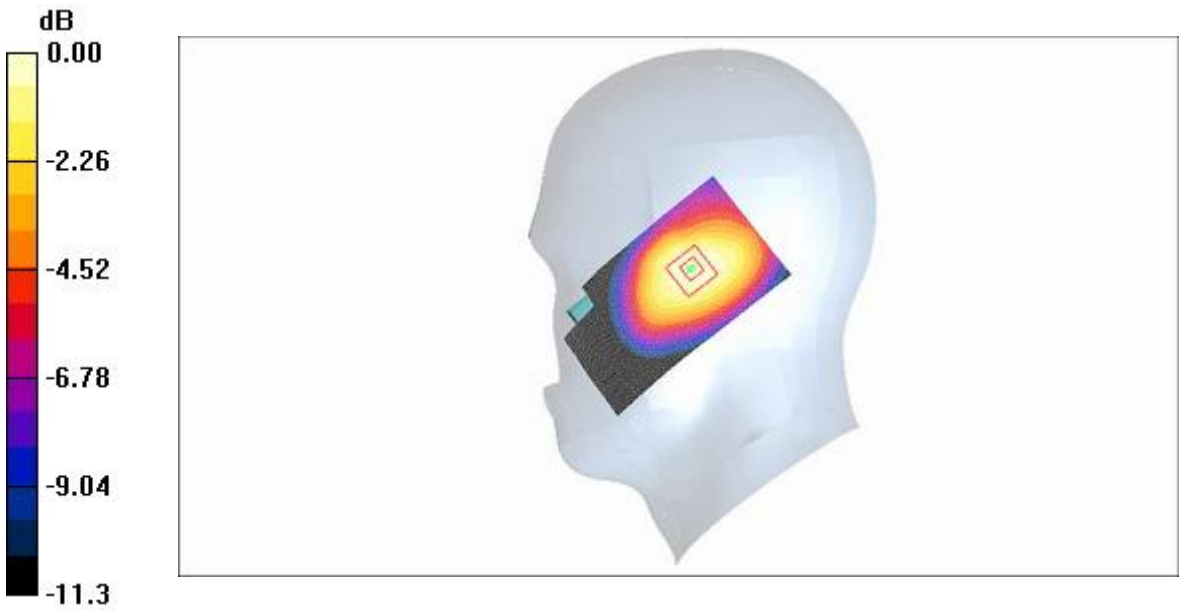


Fig. 16 Z-Scan at power reference point (Right Hand Touch Cheek 850MHz CH190)

850 Right Cheek High

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Cheek High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 24.3 V/m; Power Drift = -0.022 dB
Maximum value of SAR (interpolated) = 0.684 mW/g

Cheek High /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.3 V/m; Power Drift = -0.022 dB
Maximum value of SAR (measured) = 0.664 mW/g
Peak SAR (extrapolated) = 0.818 W/kg
SAR(1 g) = 0.628 mW/g; SAR(10 g) = 0.440 mW/g



0 dB = 0.664mW/g

Fig. 17 Right Hand Touch Cheek 850MHz CH251

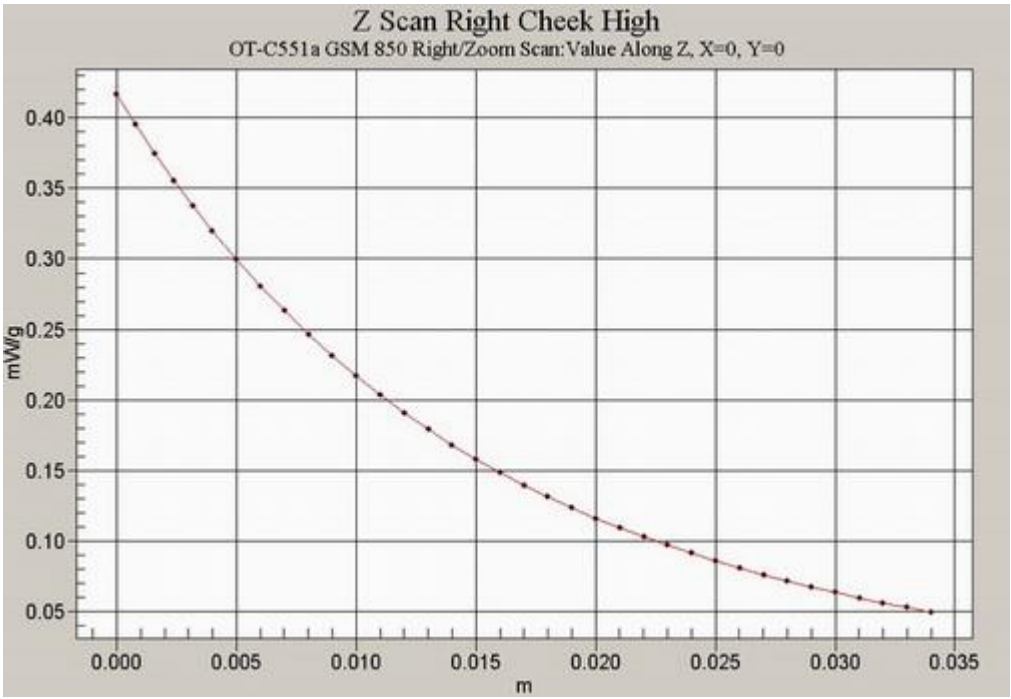
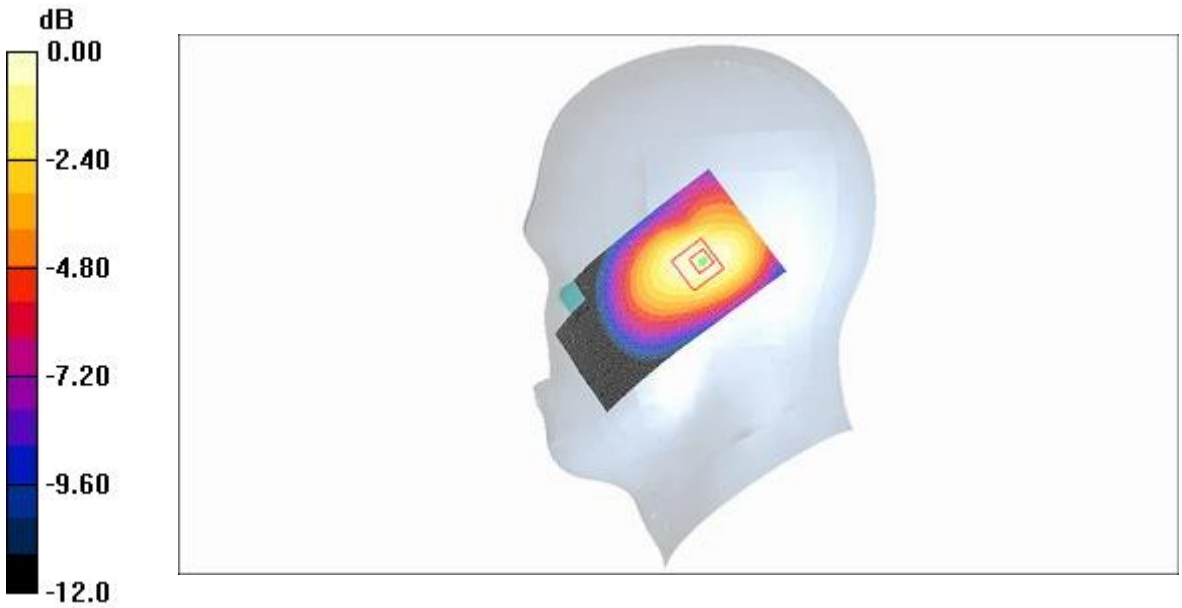


Fig. 18 Z-Scan at power reference point (Right Hand Touch Cheek 850MHz CH251)

850 Right Tilt Low

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Tilt Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.1 V/m; Power Drift = 0.048 dB
Maximum value of SAR (interpolated) = 0.339 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.1 V/m; Power Drift = 0.048 dB
Maximum value of SAR (measured) = 0.338 mW/g
Peak SAR (extrapolated) = 0.458 W/kg
SAR(1 g) = 0.313 mW/g; SAR(10 g) = 0.213 mW/g



0 dB = 0.338mW/g

Fig. 19 Right Hand Tilt 15° 850MHz CH128

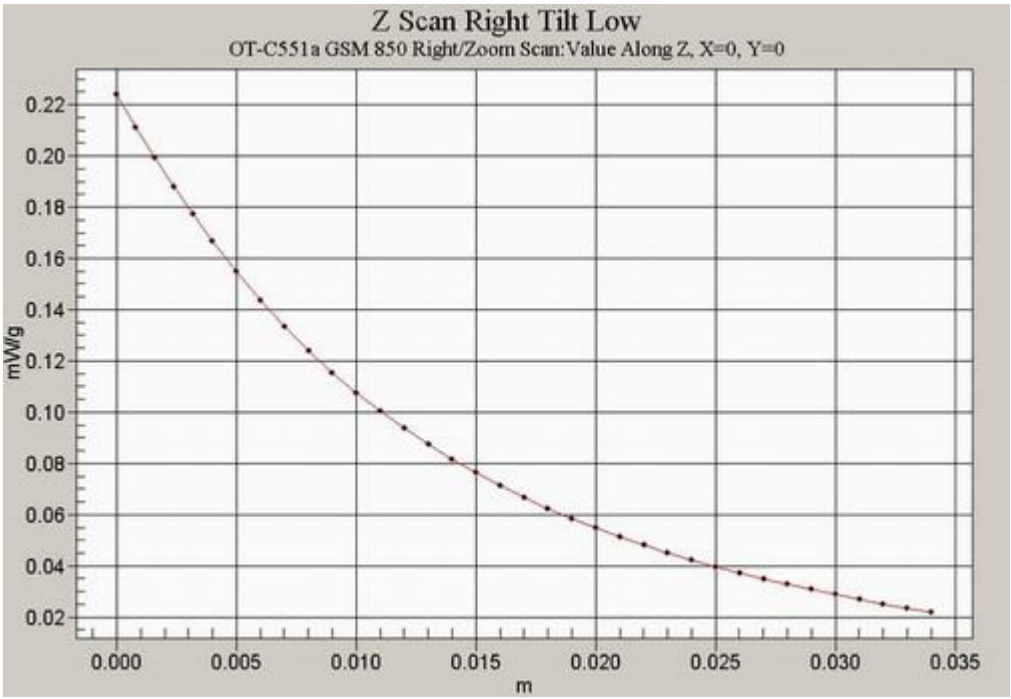
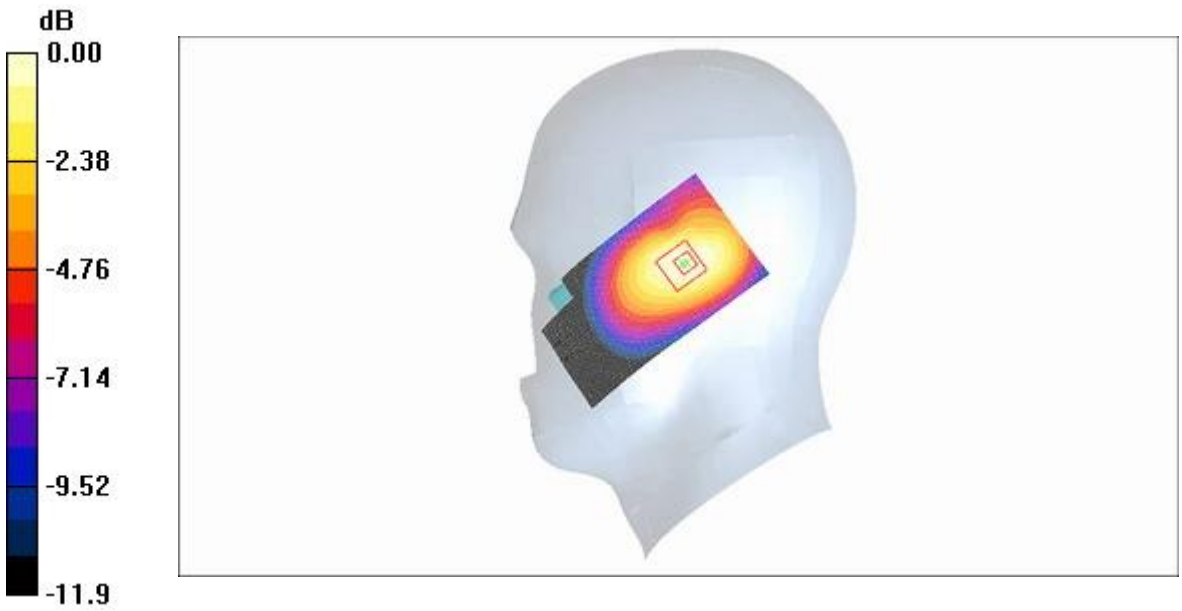


Fig. 20 Z-Scan at power reference point (Right Hand Tilt 15° 850MHz CH128)

850 Right Tilt Middle

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Tilt Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21.2 V/m; Power Drift = 0.01 dB
Maximum value of SAR (interpolated) = 0.474 mW/g

Tilt Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.2 V/m; Power Drift = 0.01 dB
Maximum value of SAR (measured) = 0.468 mW/g
Peak SAR (extrapolated) = 0.626 W/kg
SAR(1 g) = 0.436 mW/g; SAR(10 g) = 0.296 mW/g



0 dB = 0.468mW/g

Fig. 21 Right Hand Tilt 15° 850MHz CH190

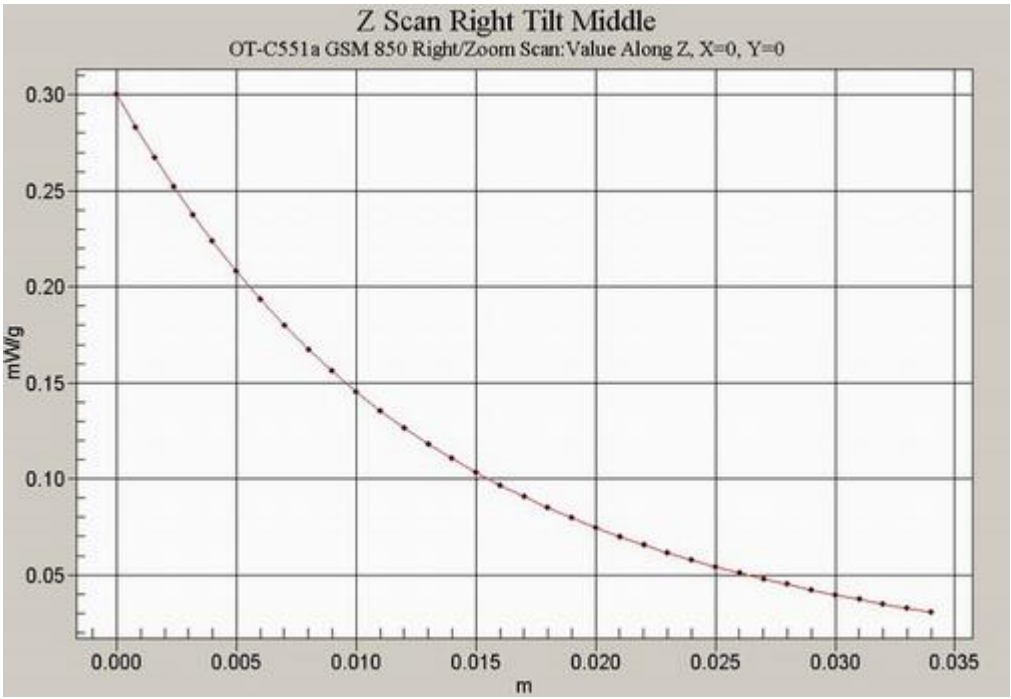
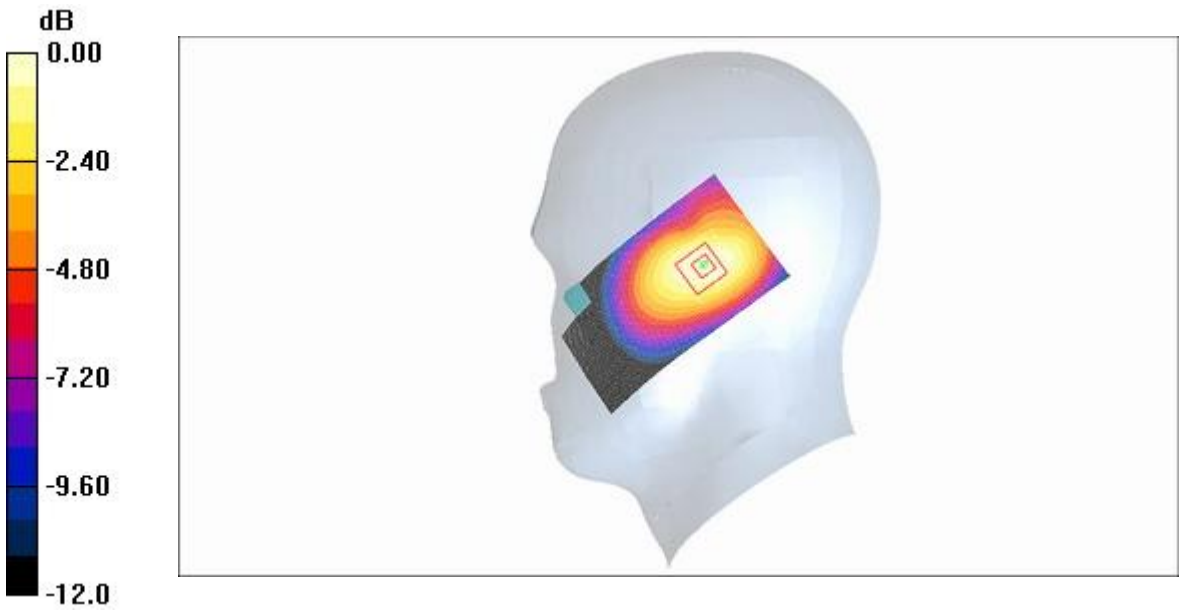


Fig. 22 Z-Scan at power reference point (Right Hand Tilt 15° 850MHz CH190)

850 Right Tilt High

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.68, 6.68, 6.68)
Tilt High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 25.1 V/m; Power Drift = -0.054 dB
Maximum value of SAR (interpolated) = 0.672 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.1 V/m; Power Drift = -0.054 dB
Maximum value of SAR (measured) = 0.664 mW/g
Peak SAR (extrapolated) = 0.865 W/kg
SAR(1 g) = 0.617 mW/g; SAR(10 g) = 0.420 mW/g



0 dB = 0.664mW/g

Fig. 23 Right Hand Tilt 15° 850MHz CH251

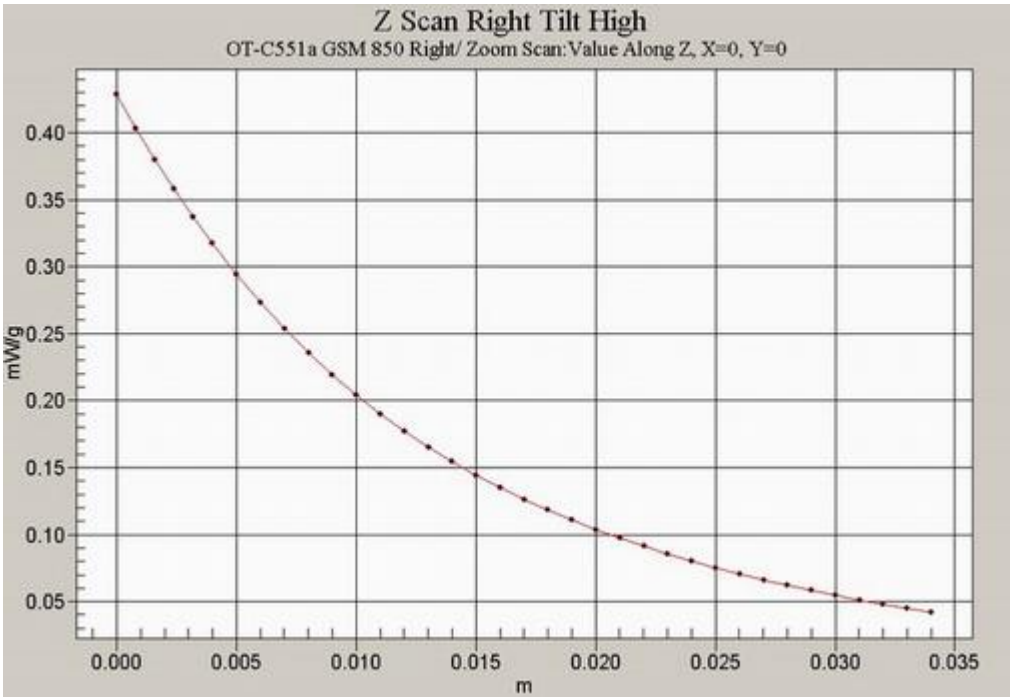
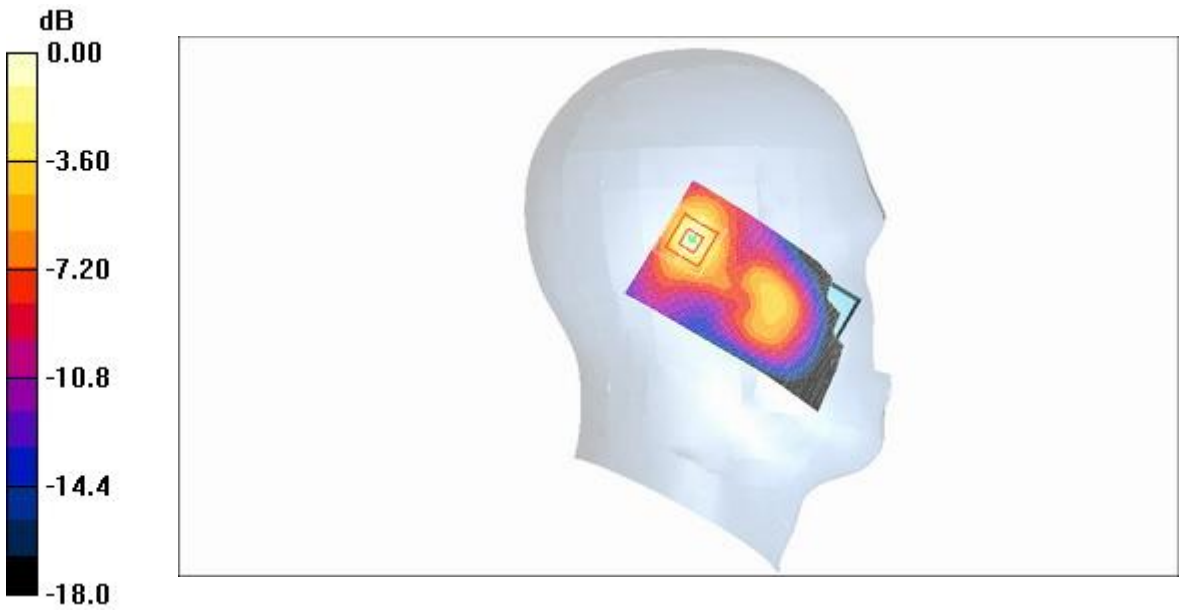


Fig. 24 Z-Scan at power reference point (Right Hand Tilt 15° 850MHz CH251)

1900 Left Cheek Low

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Cheek Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.1 V/m; Power Drift = -0.034 dB
Maximum value of SAR (interpolated) = 0.652 mW/g

Cheek Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.1 V/m; Power Drift = -0.034 dB
Maximum value of SAR (measured) = 0.654 mW/g
Peak SAR (extrapolated) = 1.06 W/kg
SAR(1 g) = 0.557 mW/g; SAR(10 g) = 0.268 mW/g



0 dB = 0.654mW/g

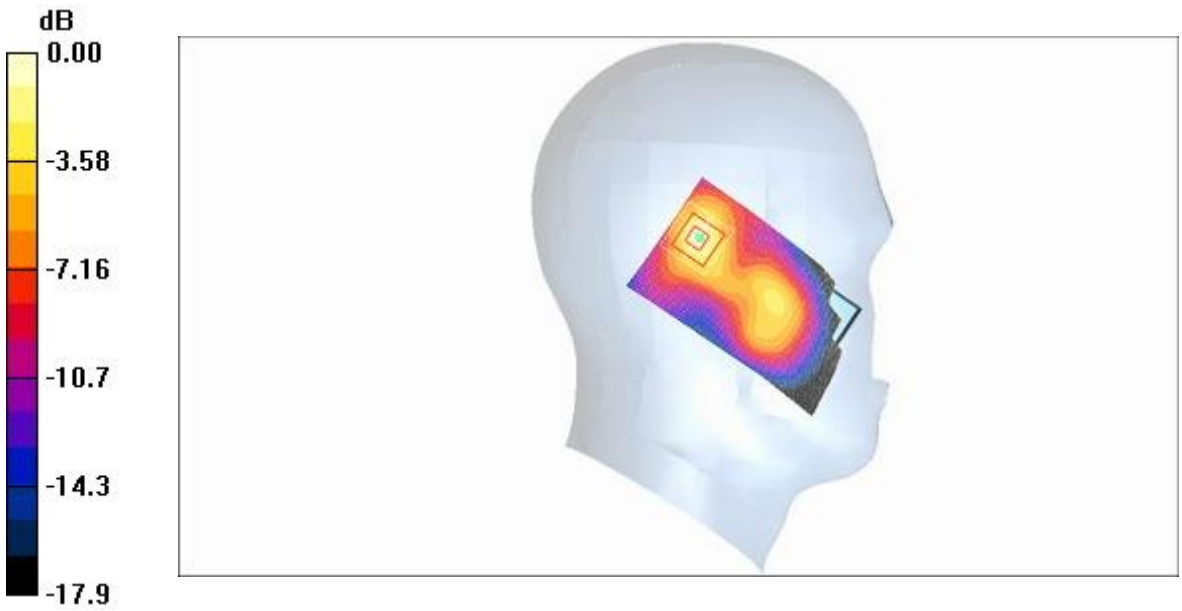
Fig. 25 Left Hand Touch Cheek 1900MHz CH512

Fig. 26 Z-Scan at power reference point (Left Hand Touch Cheek 1900MHz CH512)

1900 Left Cheek Middle

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Cheek Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 17.2 V/m; Power Drift = -0.097 dB
Maximum value of SAR (interpolated) = 0.529 mW/g

Cheek Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.2 V/m; Power Drift = -0.097 dB
Maximum value of SAR (measured) = 0.533 mW/g
Peak SAR (extrapolated) = 0.865 W/kg
SAR(1 g) = 0.451 mW/g; SAR(10 g) = 0.217 mW/g



0 dB = 0.533mW/g

Fig. 27Left Hand Touch Cheek 1900MHz CH661

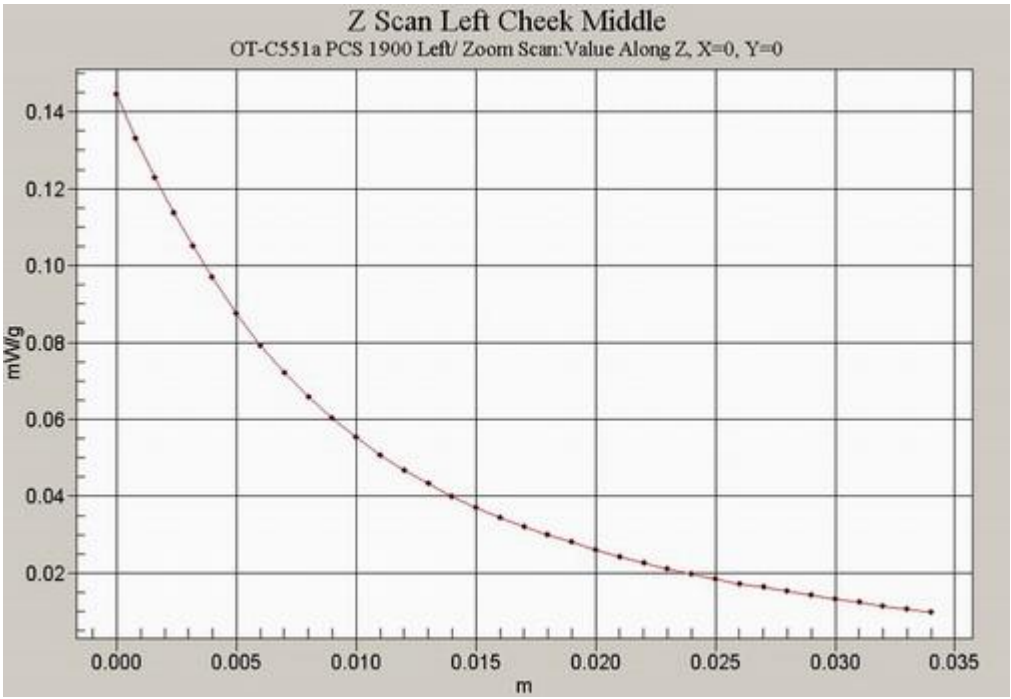
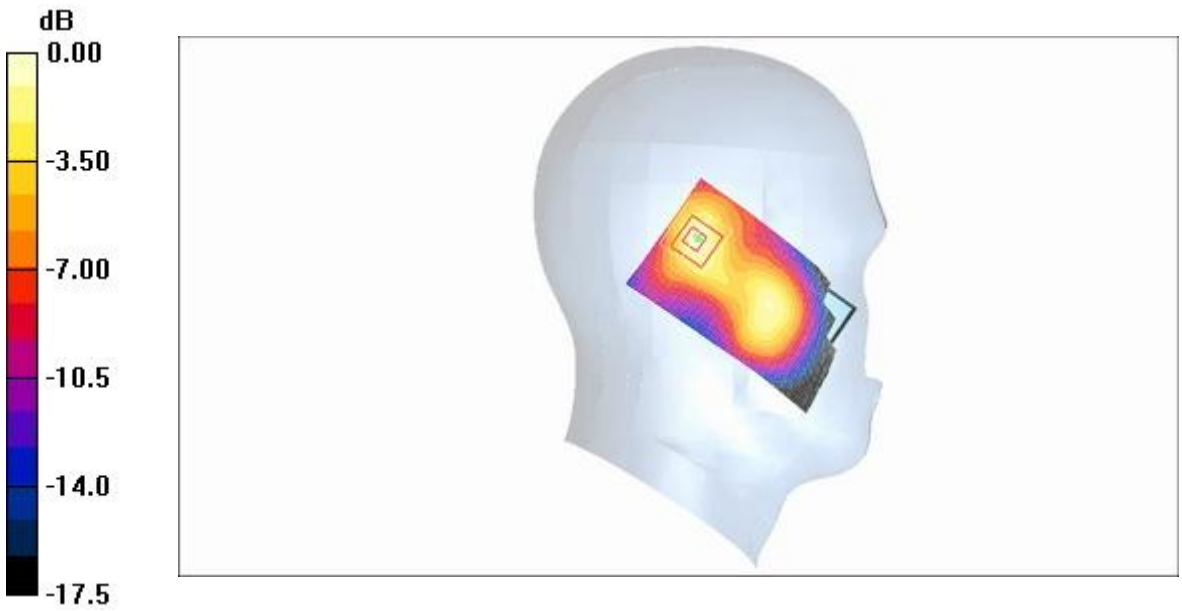


Fig. 28 Z-Scan at power reference point (Left Hand Touch Cheek 1900MHz CH661)

1900 Left Cheek High

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Cheek High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 15.7 V/m; Power Drift = 0.038 dB
Maximum value of SAR (interpolated) = 0.410 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.7 V/m; Power Drift = 0.038 dB
Maximum value of SAR (measured) = 0.391 mW/g
Peak SAR (extrapolated) = 0.604 W/kg
SAR(1 g) = 0.337 mW/g; SAR(10 g) = 0.172 mW/g



0 dB = 0.391mW/g

Fig. 29 Left Hand Touch Cheek 1900MHz CH810

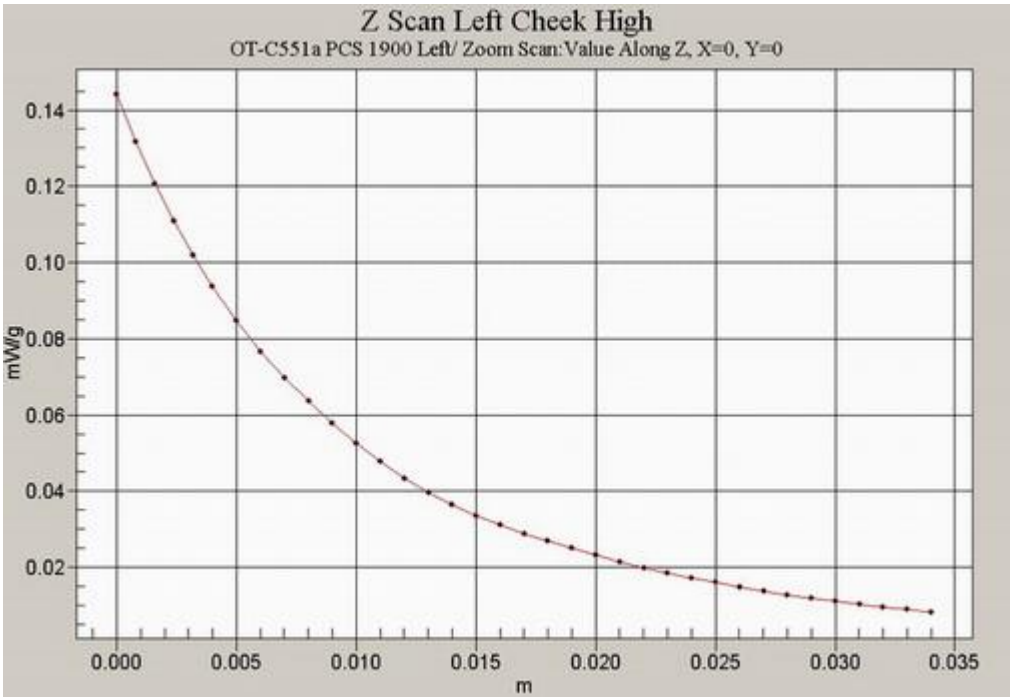


Fig. 30 Z-Scan at power reference point (Left Hand Touch Cheek 1900MHz CH810)

1900 Left Tilt Low

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Tilt Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.4 V/m; Power Drift = -0.185 dB
Maximum value of SAR (interpolated) = 0.667 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.4 V/m; Power Drift = -0.185 dB
Maximum value of SAR (measured) = 0.691 mW/g
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.600 mW/g; SAR(10 g) = 0.279 mW/g

0 dB = 0.691mW/g

Fig. 31 Left Hand Tilt 15° 1900MHz CH512

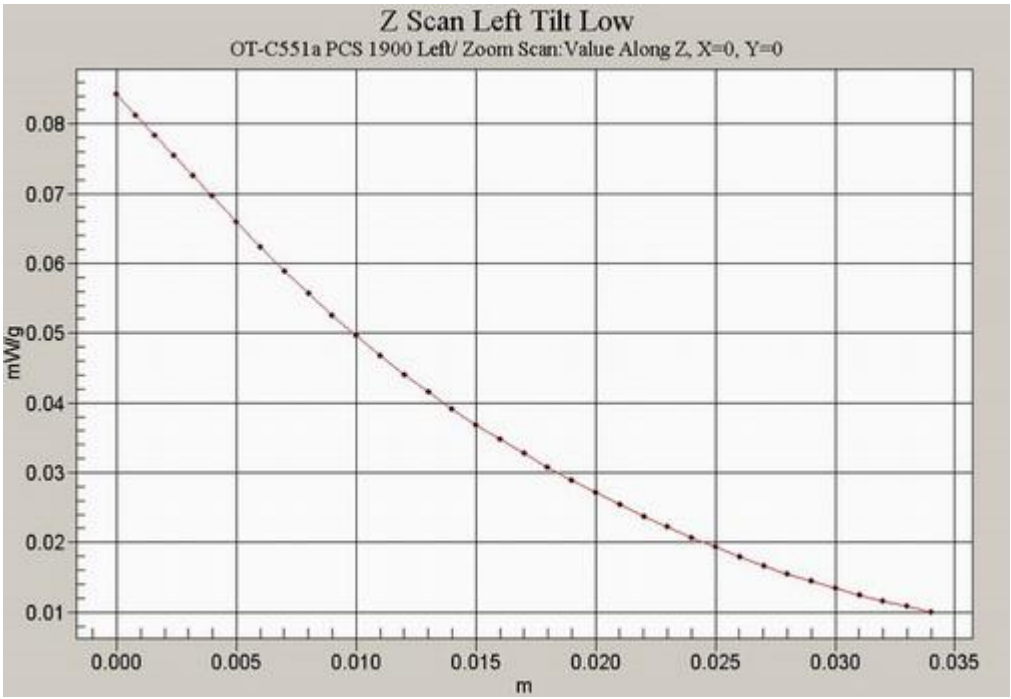
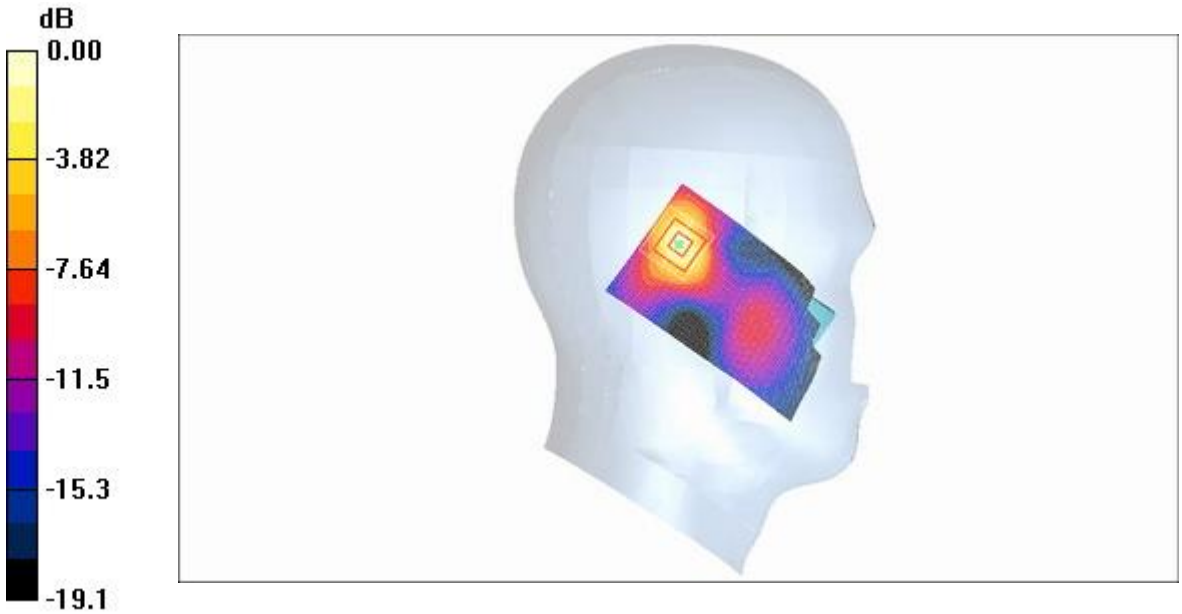


Fig. 32 Z-Scan at power reference point (Left Hand Tilt 15° 1900MHz CH512)

1900 Left Tilt Middle

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Tilt Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 17.0 V/m; Power Drift = -0.070 dB
Maximum value of SAR (interpolated) = 0.508 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.0 V/m; Power Drift = -0.070 dB
Maximum value of SAR (measured) = 0.548 mW/g
Peak SAR (extrapolated) = 0.893 W/kg
SAR(1 g) = 0.465 mW/g; SAR(10 g) = 0.217 mW/g



0 dB = 0.548mW/g

Fig. 33 Left Hand Tilt 15° 1900MHz CH661

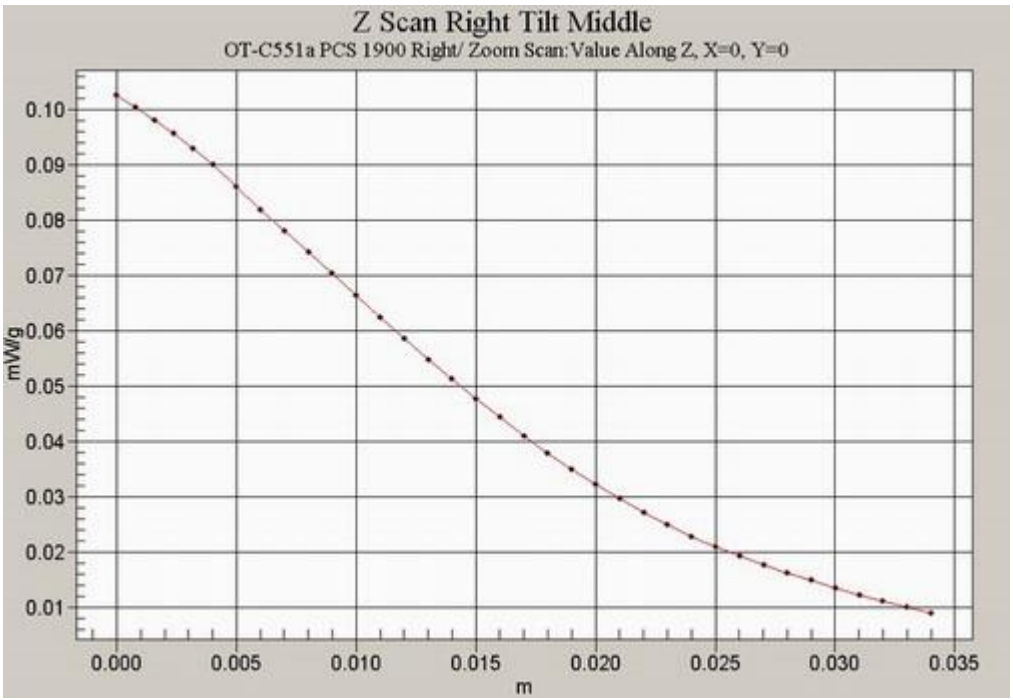
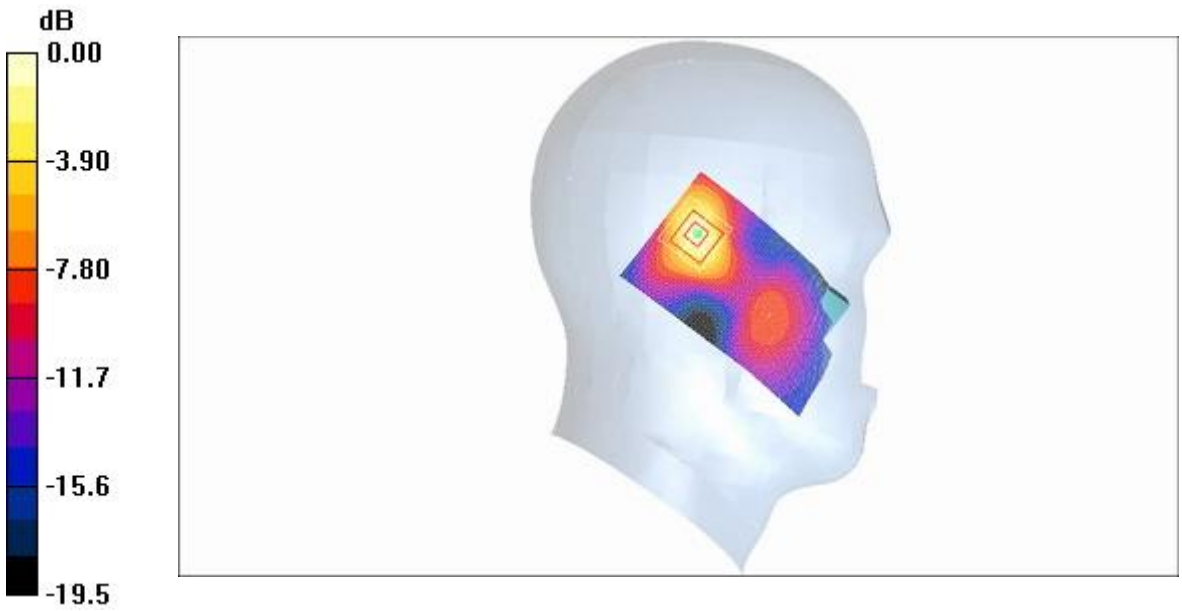


Fig. 34 Z-Scan at power reference point (Left Hand Tilt 15° 1900MHz CH661)

1900 Left Tilt High

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Tilt High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 15.9 V/m; Power Drift = -0.159 dB
Maximum value of SAR (interpolated) = 0.403 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.9 V/m; Power Drift = -0.159 dB
Maximum value of SAR (measured) = 0.426 mW/g
Peak SAR (extrapolated) = 0.667 W/kg
SAR(1 g) = 0.370 mW/g; SAR(10 g) = 0.179 mW/g



0 dB = 0.426mW/g

Fig. 35 Left Hand Tilt 15° 1900MHz CH810

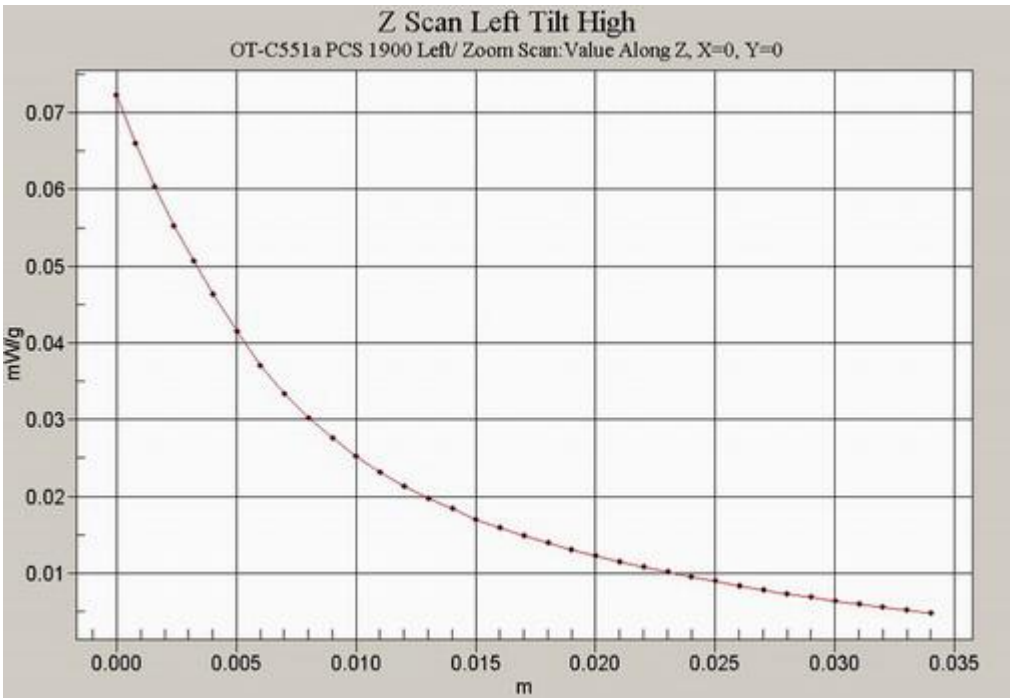
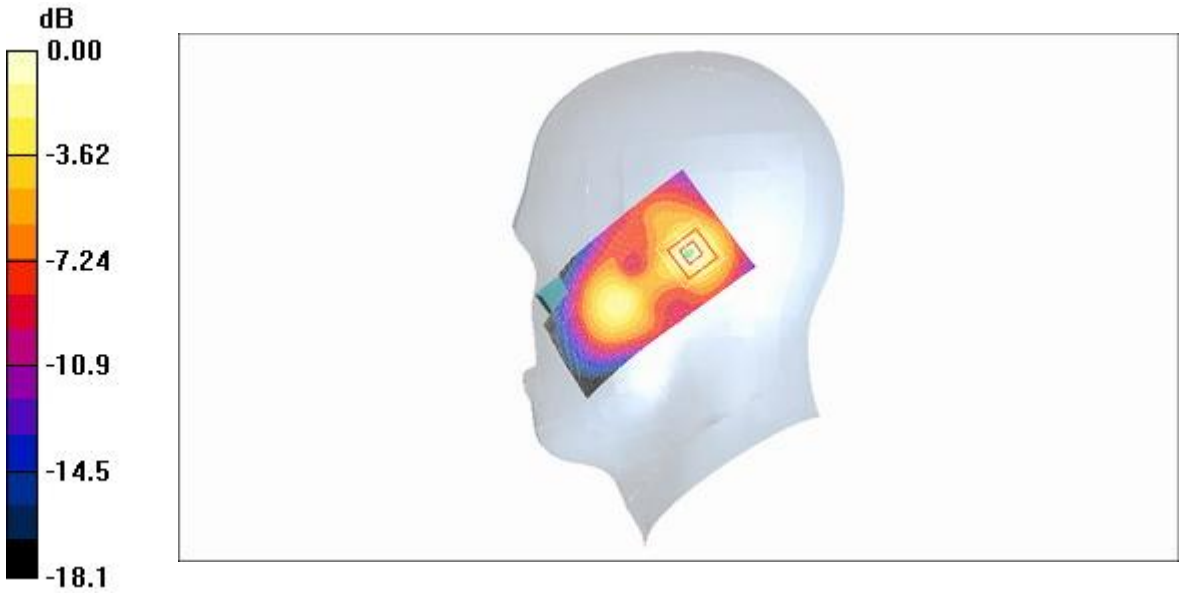


Fig. 36 Z-Scan at power reference point (left Hand Tilt 15° 1900MHz CH810)

1900 Right Cheek Low

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Cheek Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 17.3 V/m; Power Drift = -0.188 dB
Maximum value of SAR (interpolated) = 0.474 mW/g

Cheek Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.3 V/m; Power Drift = -0.188 dB
Maximum value of SAR (measured) = 0.480 mW/g
Peak SAR (extrapolated) = 0.762 W/kg
SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.215 mW/g



0 dB = 0.480mW/g

Fig. 37 Right Hand Touch Cheek 1900MHz CH512

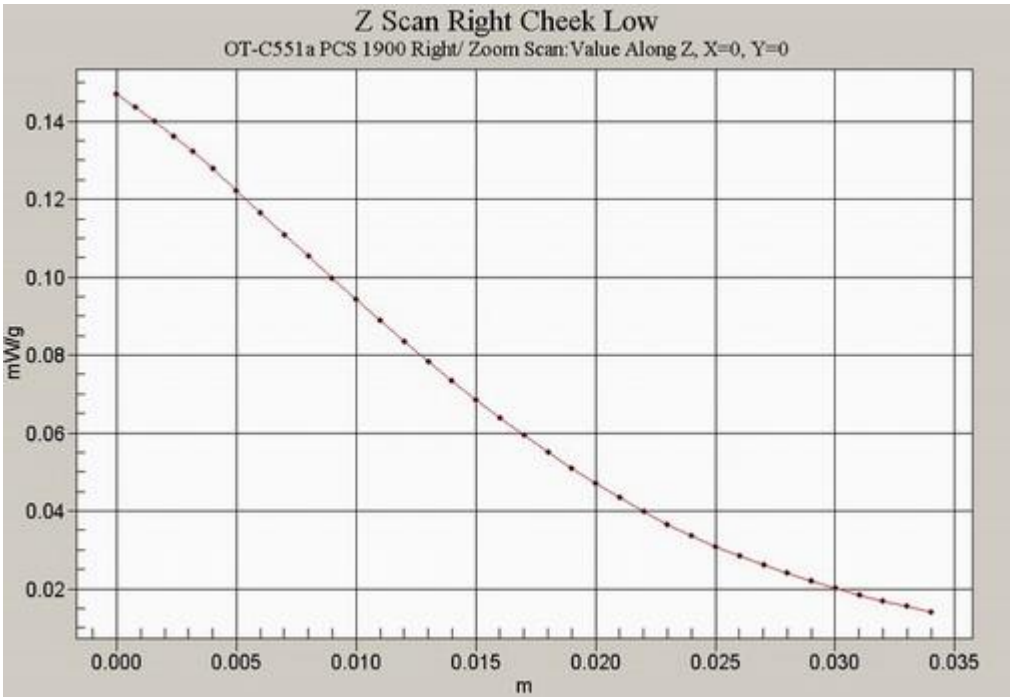
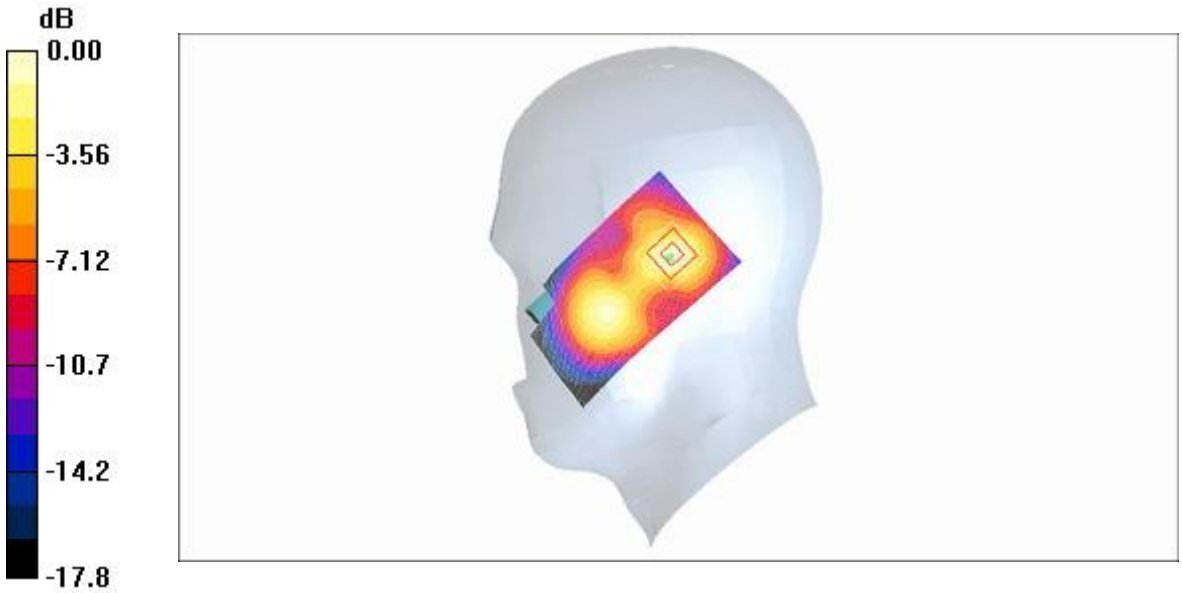


Fig. 38 Z-Scan at power reference point (Right Hand Touch Cheek 1900MHz CH512)

1900 Right Cheek Middle

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Cheek Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.3 V/m; Power Drift = -0.168 dB
Maximum value of SAR (interpolated) = 0.430 mW/g

Cheek Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.3 V/m; Power Drift = -0.168 dB
Maximum value of SAR (measured) = 0.421 mW/g
Peak SAR (extrapolated) = 0.678 W/kg
SAR(1 g) = 0.377 mW/g; SAR(10 g) = 0.192 mW/g



0 dB = 0.421mW/g

Fig. 39 Right Hand Touch Cheek 1900MHz CH661

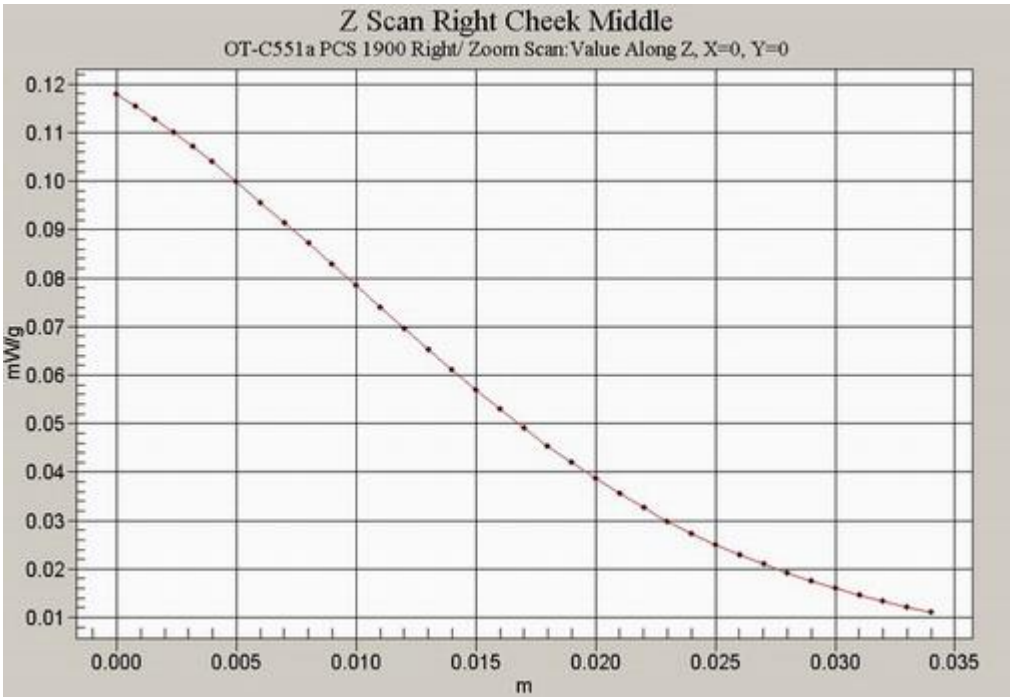
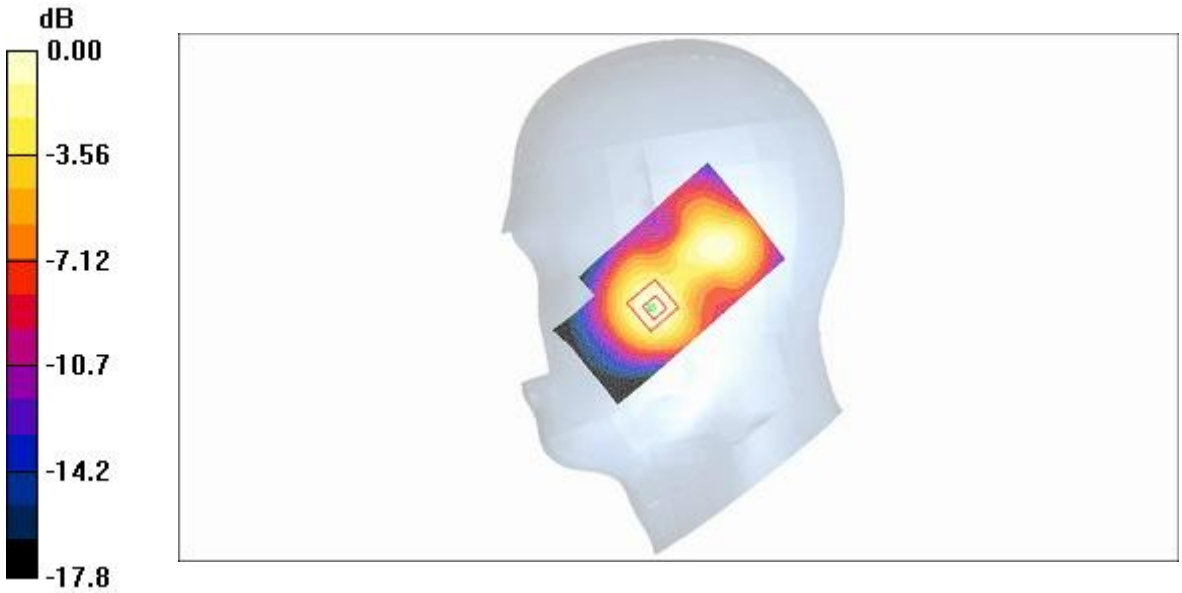


Fig. 40 Z-Scan at power reference point (Right Hand Touch Cheek 1900MHz CH661)

1900 Right Cheek High

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Cheek High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 14.9 V/m; Power Drift = -0.047 dB
Maximum value of SAR (interpolated) = 0.297 mW/g

Cheek High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.9 V/m; Power Drift = -0.047 dB
Maximum value of SAR (measured) = 0.277 mW/g
Peak SAR (extrapolated) = 0.345 W/kg
SAR(1 g) = 0.253 mW/g; SAR(10 g) = 0.155 mW/g



0 dB = 0.277mW/g

Fig. 41 Right Hand Touch Cheek 1900MHz CH810

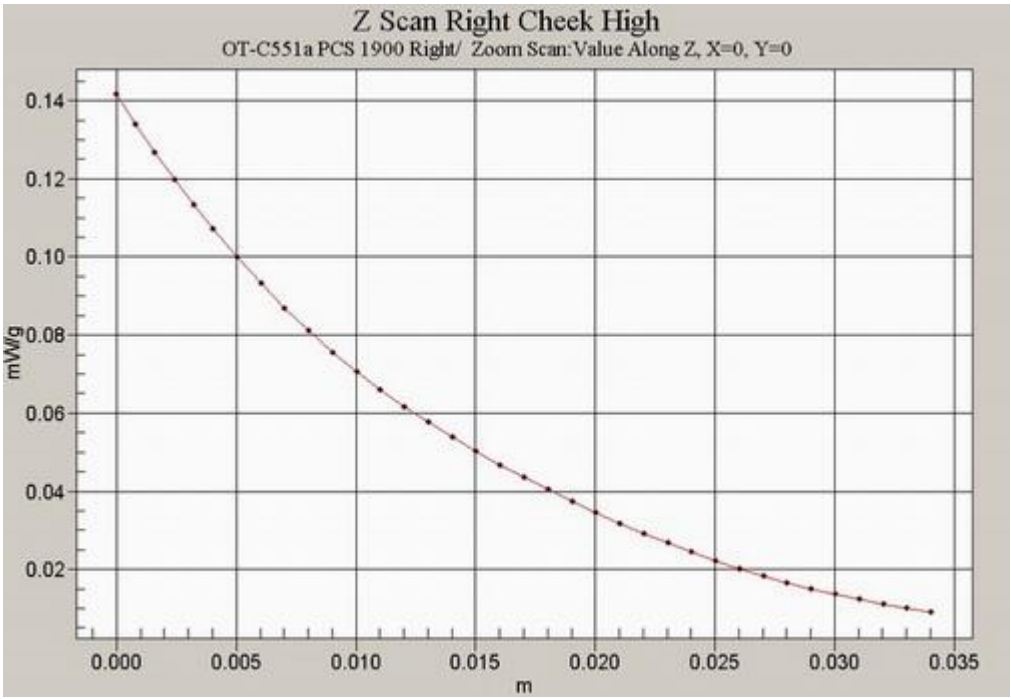
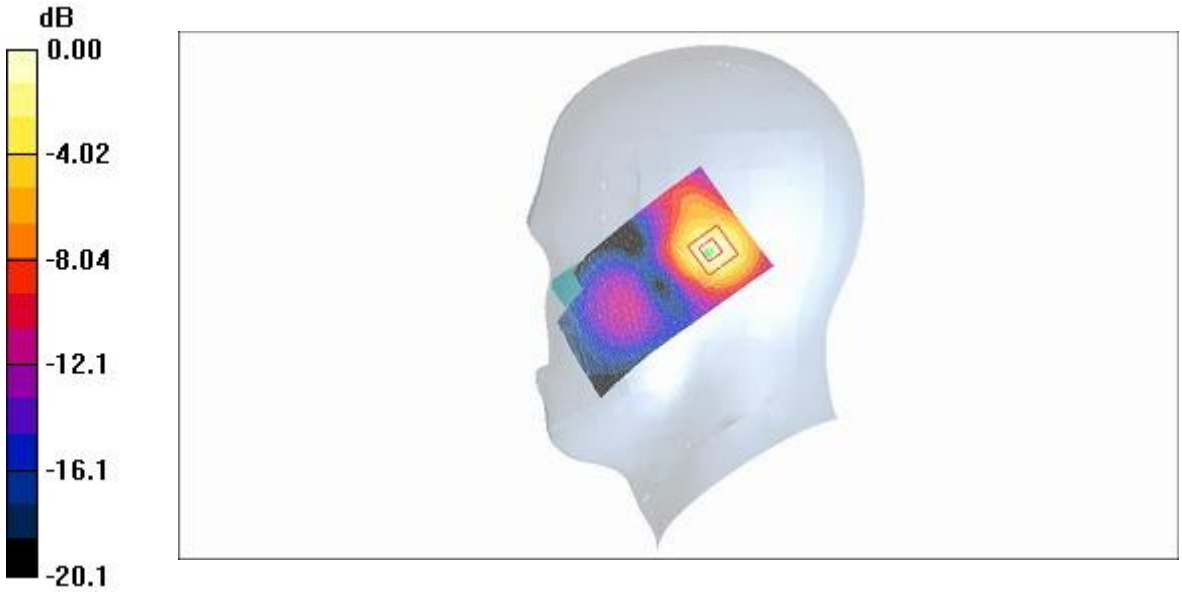


Fig. 42 Z-Scan at power reference point (Right Hand Touch Cheek 1900MHz CH810)

1900 Right Tilt Low

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Tilt Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.1 V/m; Power Drift = -0.189 dB
Maximum value of SAR (interpolated) = 0.525 mW/g

Tilt Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 18.1 V/m; Power Drift = -0.189 dB
Maximum value of SAR (measured) = 0.500 mW/g
Peak SAR (extrapolated) = 0.777 W/kg
SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.230 mW/g



0 dB = 0.500mW/g

Fig. 43 Right Hand Tilt 15° 1900MHz CH512

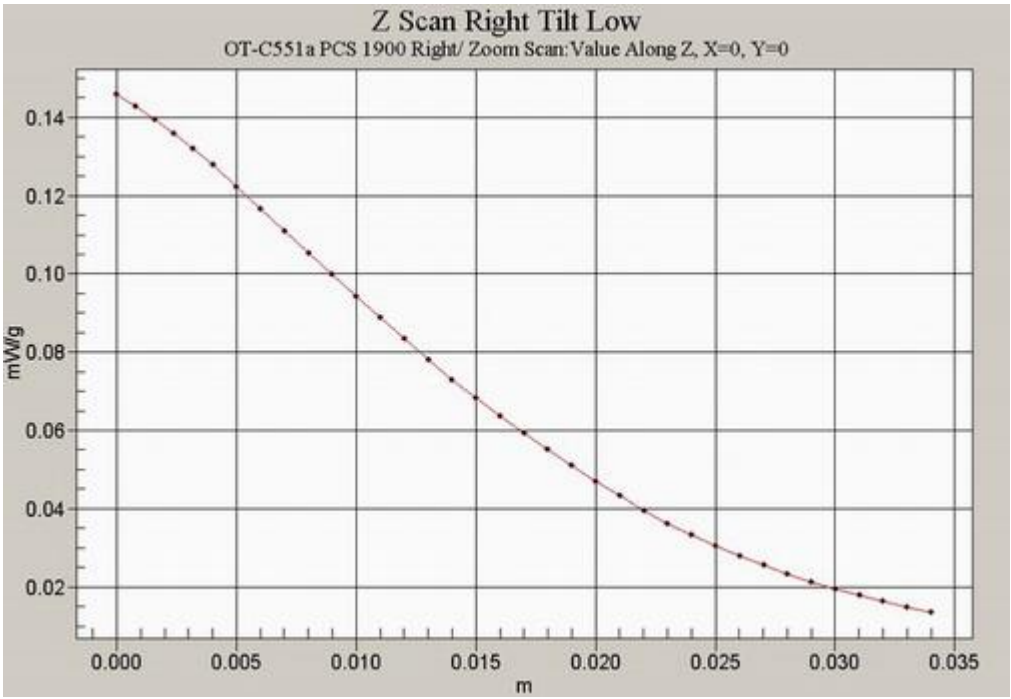
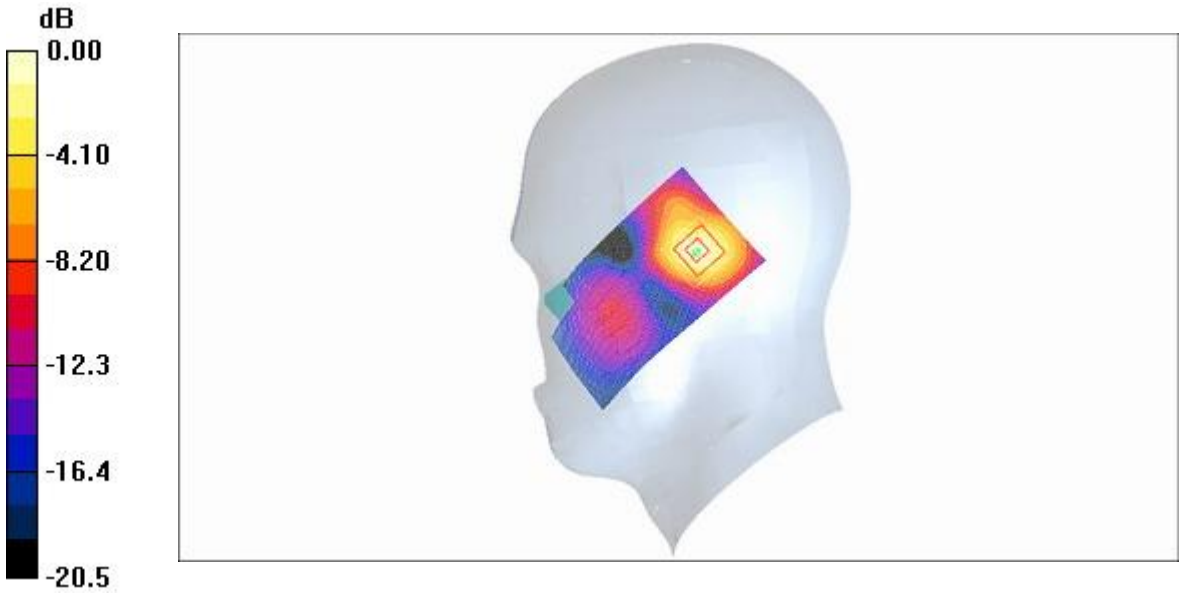


Fig. 44 Z-Scan at power reference point (Right Hand Tilt 15° 1900MHz CH512)

1900 Right Tilt Middle

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Tilt Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 17.1 V/m; Power Drift = -0.147 dB
Maximum value of SAR (interpolated) = 0.433 mW/g

Tilt Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.1 V/m; Power Drift = -0.147 dB
Maximum value of SAR (measured) = 0.432 mW/g
Peak SAR (extrapolated) = 0.659 W/kg
SAR(1 g) = 0.377 mW/g; SAR(10 g) = 0.192 mW/g



0 dB = 0.432mW/g

Fig. 45 Right Hand Tilt 15° 1900MHz CH661

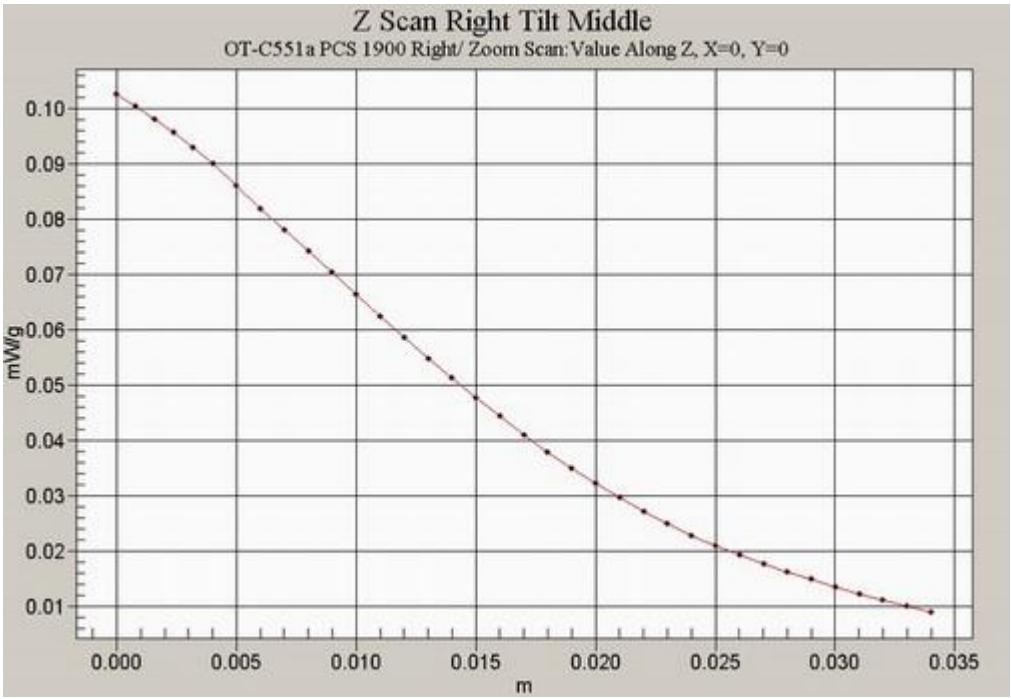
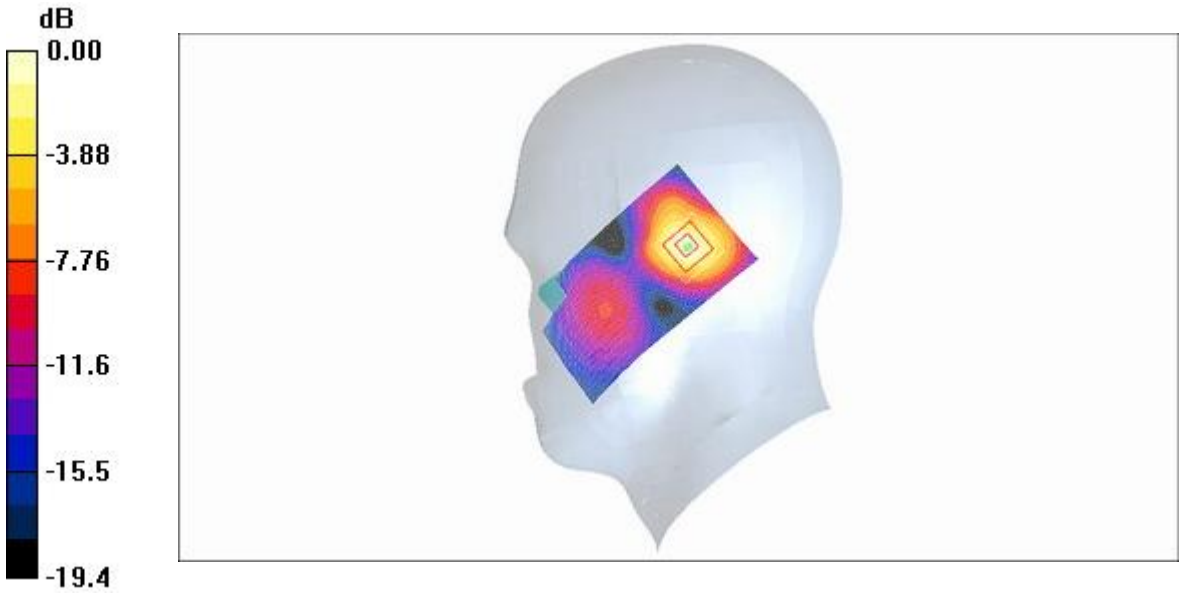


Fig. 46 Z-Scan at power reference point (Right Hand Tilt 15° 1900MHz CH661)

1900 Right Tilt High

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(5.44, 5.44, 5.44)
Tilt High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.2 V/m; Power Drift = -0.133 dB
Maximum value of SAR (interpolated) = 0.370 mW/g

Tilt High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.2 V/m; Power Drift = -0.133 dB
Maximum value of SAR (measured) = 0.371 mW/g
Peak SAR (extrapolated) = 0.557 W/kg
SAR(1 g) = 0.323 mW/g; SAR(10 g) = 0.166 mW/g



0 dB = 0.371mW/g

Fig. 47 Right Hand Tilt 15° 1900MHz CH810

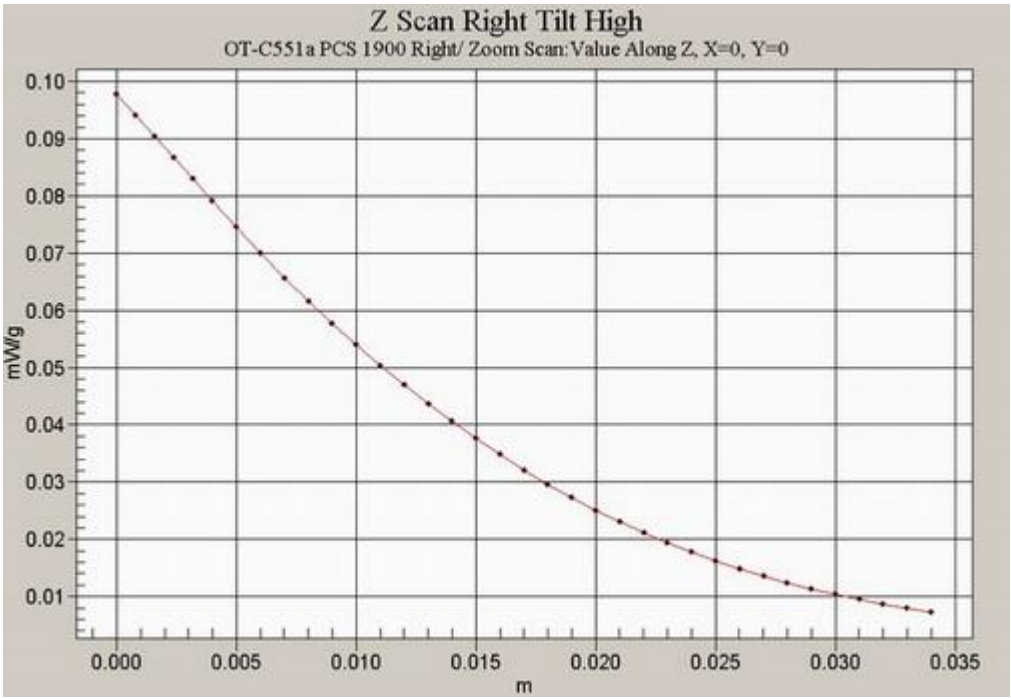
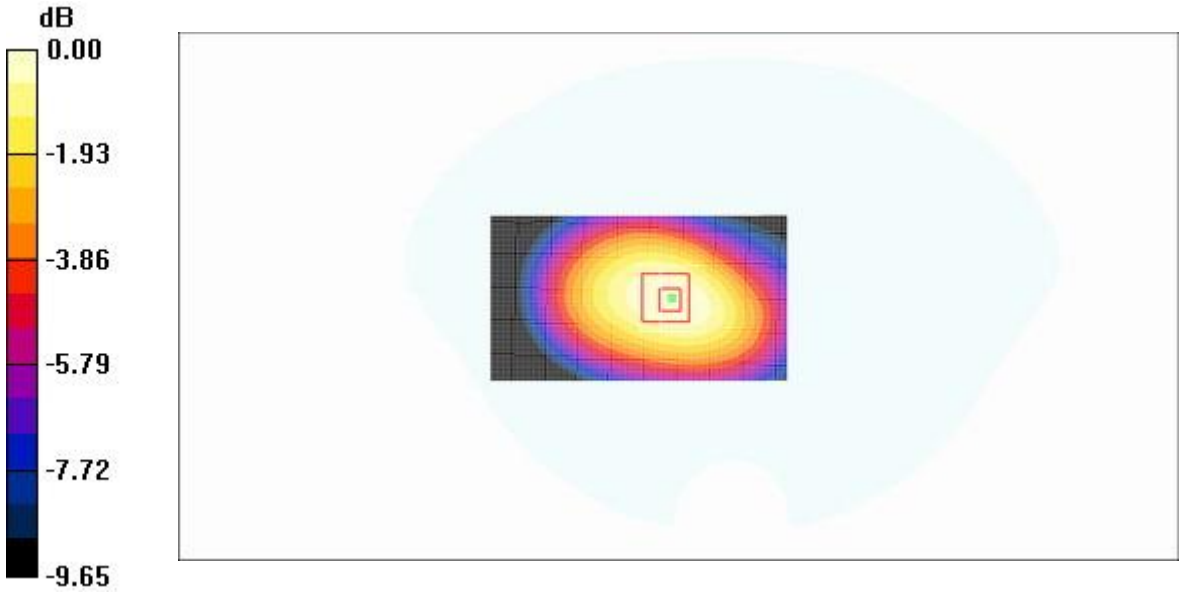


Fig. 48 Z-Scan at power reference point (Right Hand Tilt 15° 1900MHz CH810)

850 Body Towards Phantom Low

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Phantom Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 10.4 V/m; Power Drift = -0.021 dB
Maximum value of SAR (interpolated) = 0.177 mW/g

Towards Phantom Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.4 V/m; Power Drift = -0.021 dB
Maximum value of SAR (measured) = 0.175 mW/g
Peak SAR (extrapolated) = 0.213 W/kg
SAR(1 g) = 0.166 mW/g; SAR(10 g) = 0.119 mW/g



0 dB = 0.175mW/g

Fig. 49 Flat Phantom Body-worn Position 850MHz CH128 with the display of the handset toward the phantom

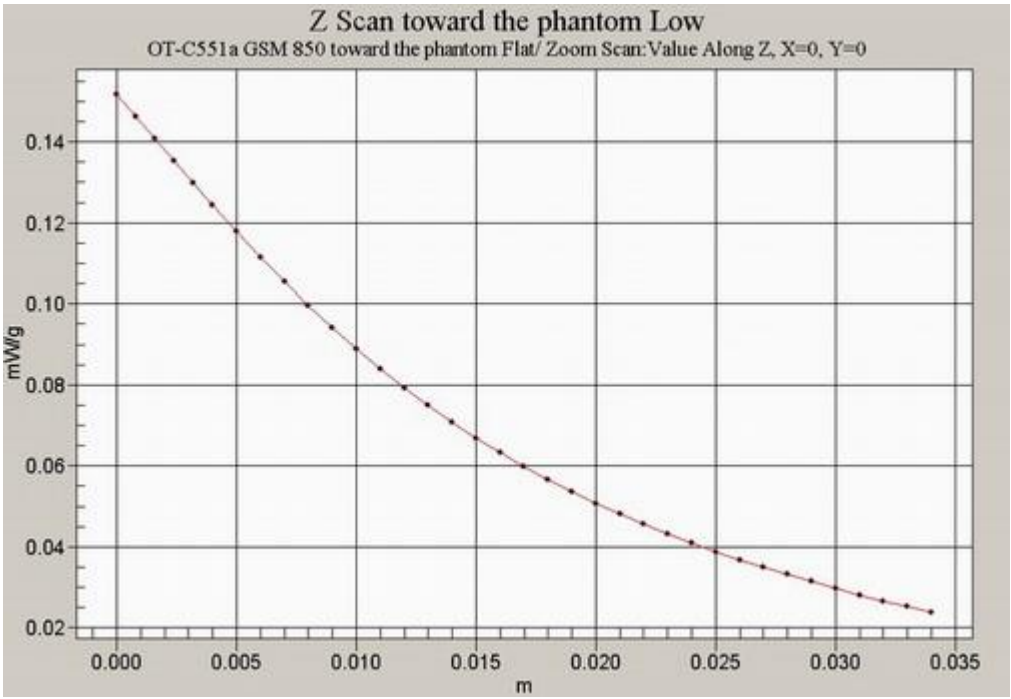
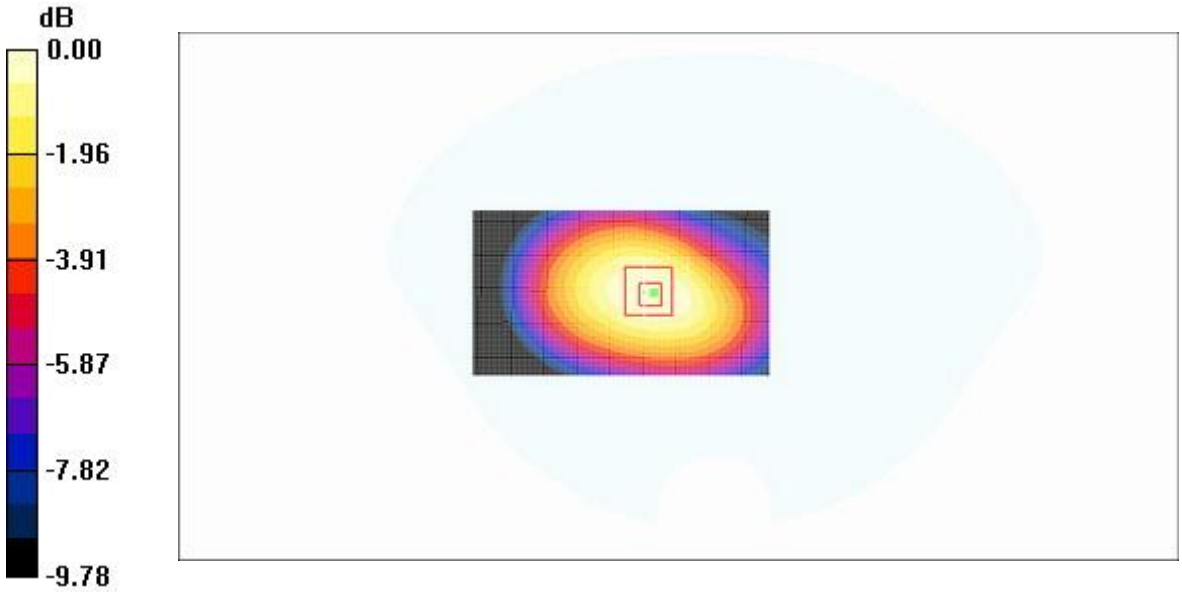


Fig.50 Z-Scan at power reference point (Flat Phantom 850MHz CH128 with the display of the handset toward the phantom)

850 Body Towards Phantom Middle

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Phantom Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 12.2 V/m; Power Drift = -0.035 dB
Maximum value of SAR (interpolated) = 0.257 mW/g

Towards Phantom Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.2 V/m; Power Drift = -0.035 dB
Maximum value of SAR (measured) = 0.254 mW/g
Peak SAR (extrapolated) = 0.307 W/kg
SAR(1 g) = 0.238 mW/g; SAR(10 g) = 0.171 mW/g



0 dB = 0.254mW/g

Fig. 51 Flat Phantom Body-worn Position 850MHz CH190 with the display of the handset toward the phantom

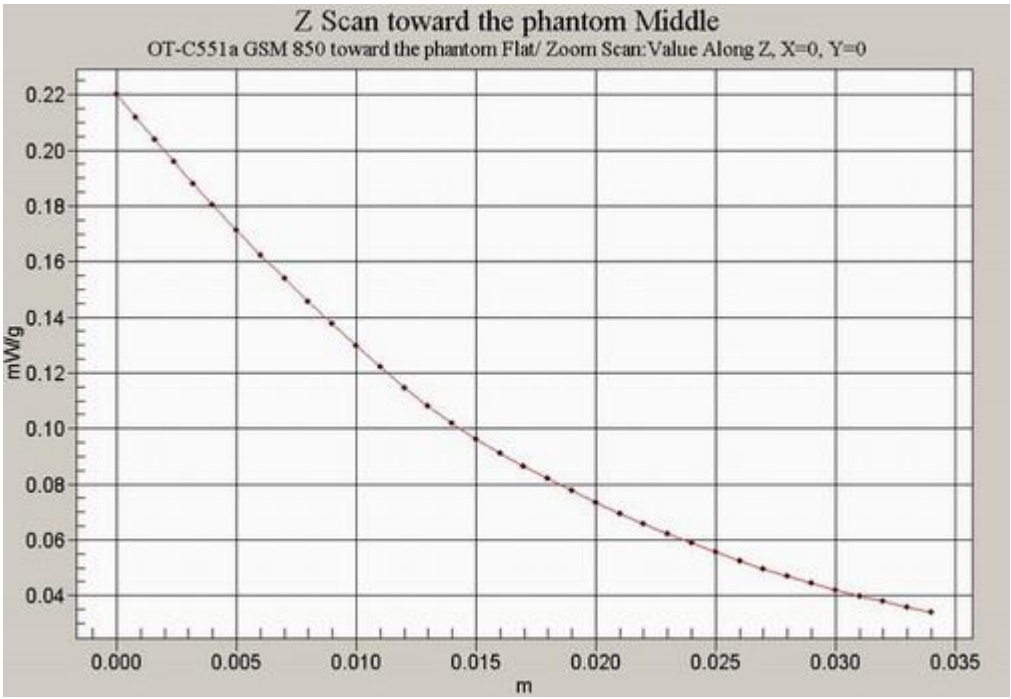
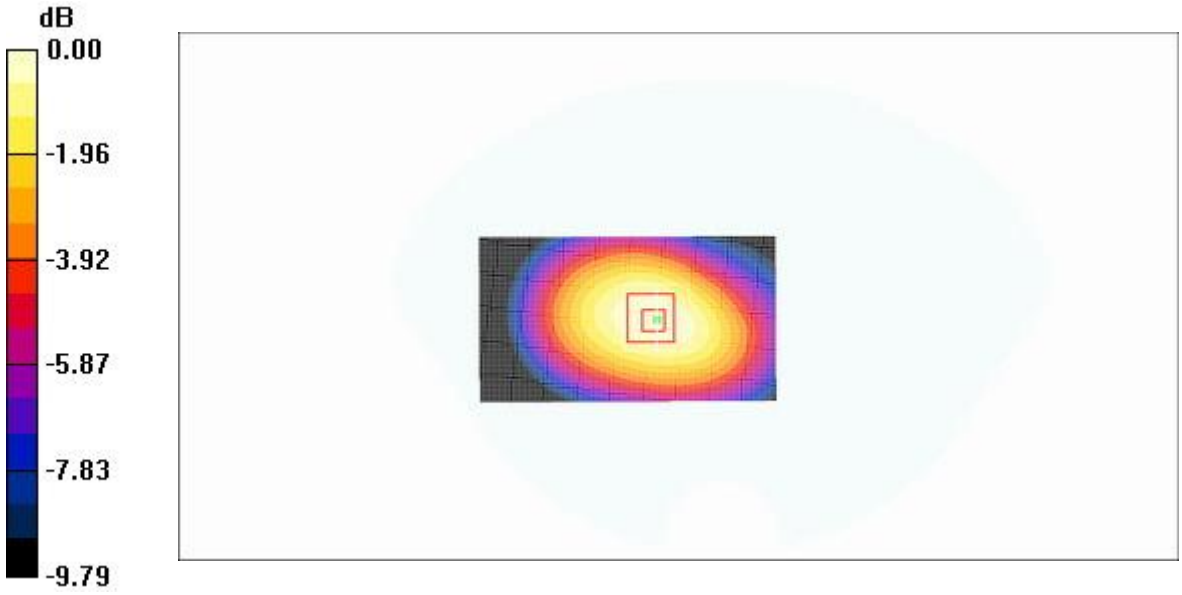


Fig. 52 Z-Scan at power reference point (Flat Phantom 850MHz CH190 with the display of the handset toward the phantom)

850 Body Towards Phantom High

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Phantom High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 14.7 V/m; Power Drift = -0.038 dB
Maximum value of SAR (interpolated) = 0.375 mW/g

Towards Phantom High /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.7 V/m; Power Drift = -0.038 dB
Maximum value of SAR (measured) = 0.375 mW/g
Peak SAR (extrapolated) = 0.458 W/kg
SAR(1 g) = 0.351 mW/g; SAR(10 g) = 0.252 mW/g



0 dB = 0.375mW/g

Fig. 53 Flat Phantom Body-worn Position 850MHz CH251 with the display of the handset toward the phantom

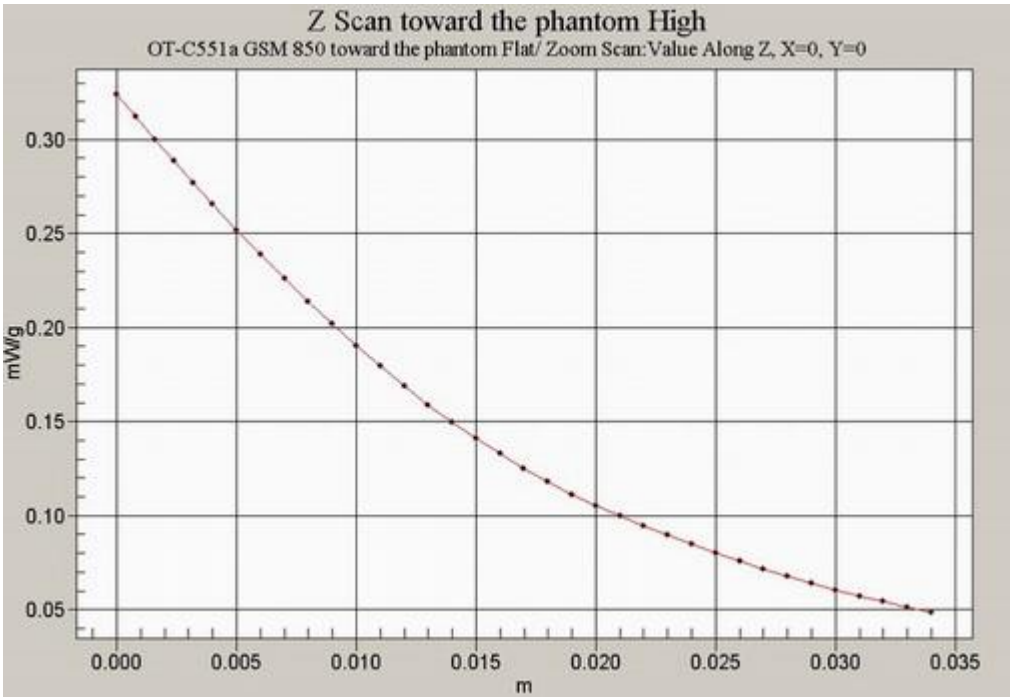
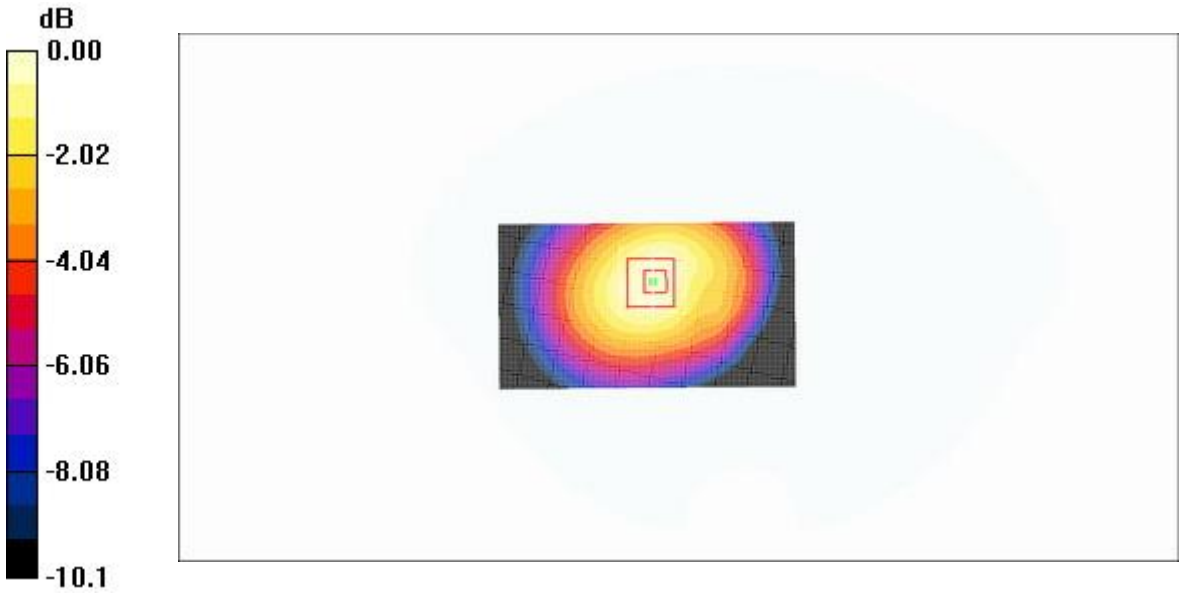


Fig. 54 Z-Scan at power reference point (Flat Phantom 850MHz CH251 with the display of the handset toward the phantom)

850 Body Towards Ground Low

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 15.0 V/m; Power Drift = 0.01 dB
Maximum value of SAR (interpolated) = 0.534 mW/g

Towards Ground Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Maximum value of SAR (measured) = 0.525 mW/g
Peak SAR (extrapolated) = 0.654 W/kg
SAR(1 g) = 0.494 mW/g; SAR(10 g) = 0.346 mW/g



0 dB = 0.525mW/g

Fig.55 Flat Phantom Body-worn Position 850MHz CH128 with the display of the handset toward the ground

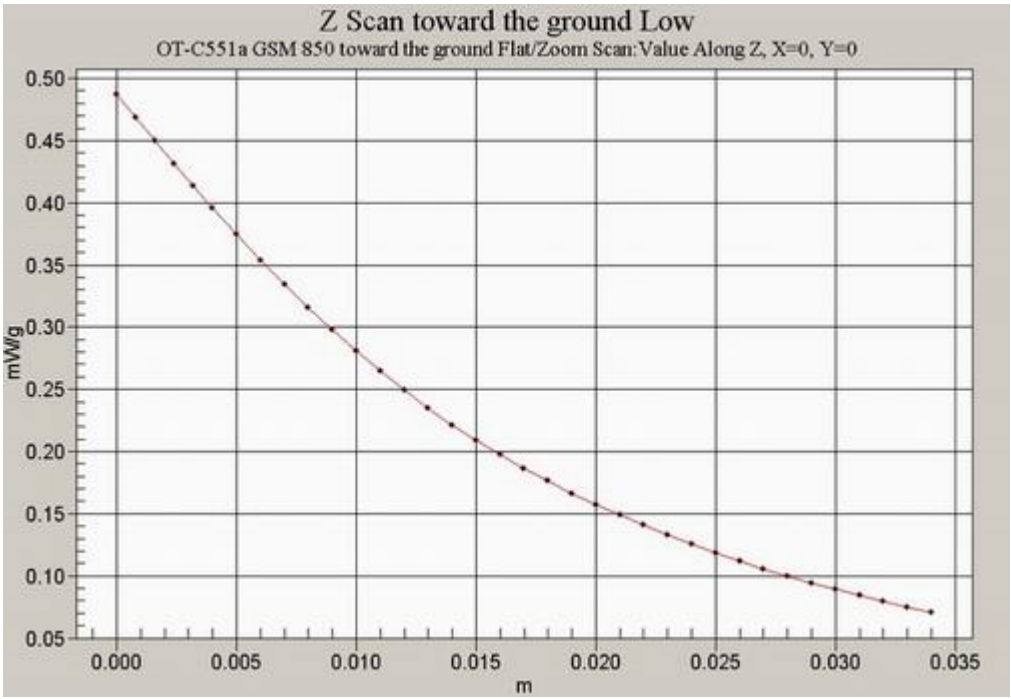
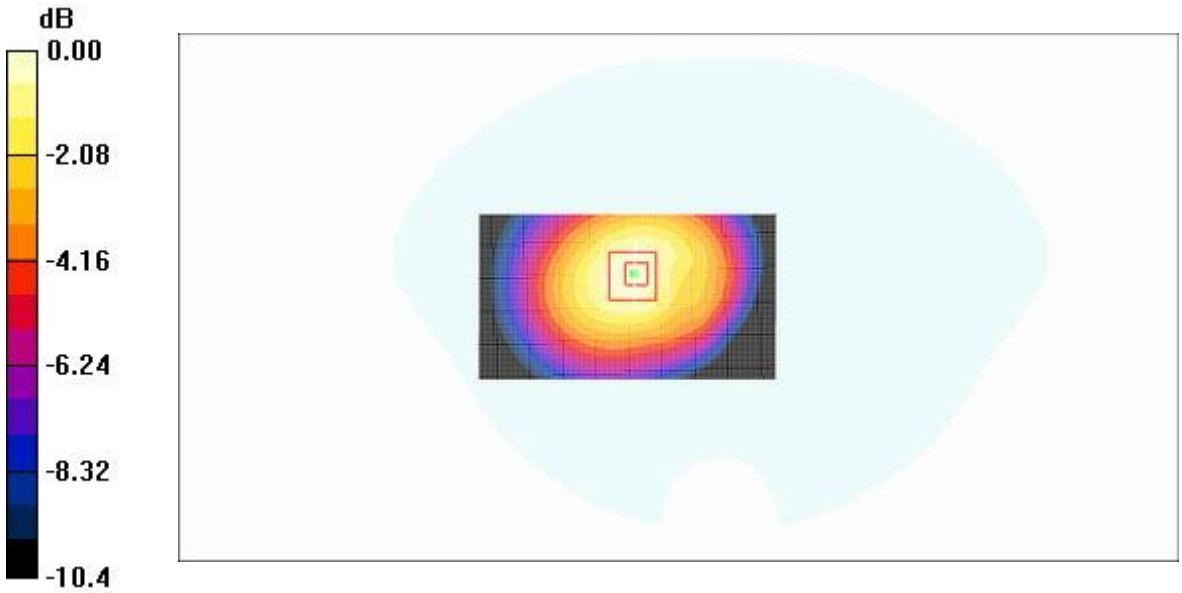


Fig. 56 Z-Scan at power reference point (Flat Phantom 850MHz CH128 with the display of the handset toward the ground)

850 Body Towards Ground Middle

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Ground Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.6 V/m; Power Drift = 0.036 dB
Maximum value of SAR (interpolated) = 0.665 mW/g

Towards Ground Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.6 V/m; Power Drift = 0.036 dB
Maximum value of SAR (measured) = 0.671 mW/g
Peak SAR (extrapolated) = 0.844 W/kg
SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.435 mW/g



0 dB = 0.671mW/g

Fig. 57 Flat Phantom Body-worn Position 850MHz CH190 with the display of the handset toward the ground

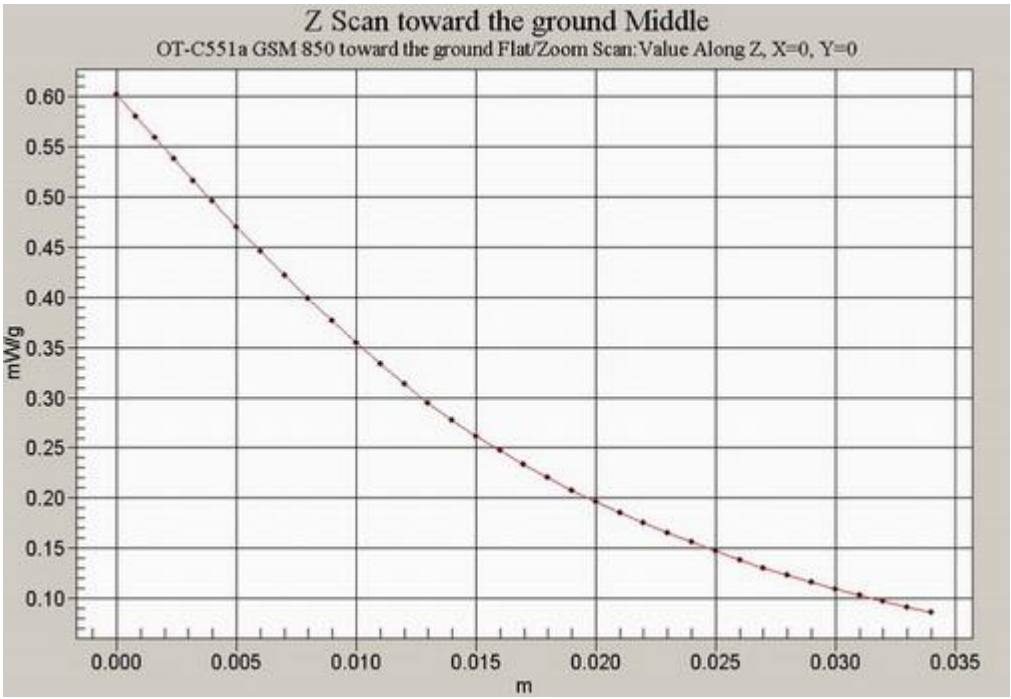
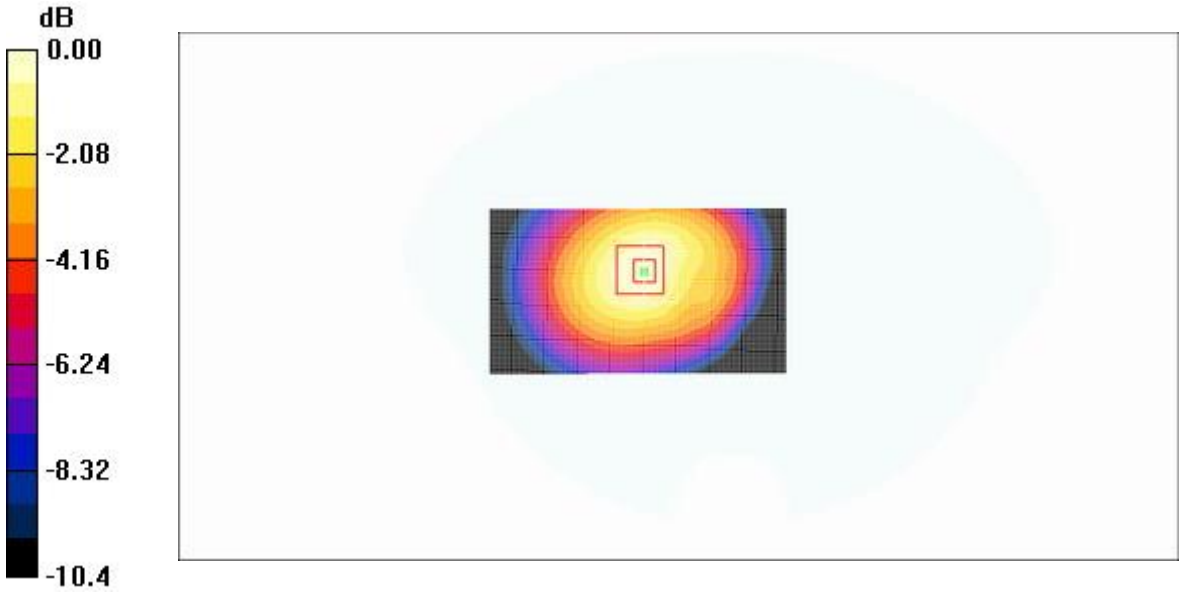


Fig. 58 Z-Scan at power reference point (Flat Phantom 850MHz CH190 with the display of the handset toward the ground)

850 Body Towards Ground High

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Ground High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.7 V/m; Power Drift = 0.01 dB
Maximum value of SAR (interpolated) = 0.681 mW/g

Towards Ground High /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 16.7 V/m; Power Drift = 0.01 dB
Maximum value of SAR (measured) = 0.680 mW/g
Peak SAR (extrapolated) = 0.856 W/kg
SAR(1 g) = 0.639 mW/g; SAR(10 g) = 0.445 mW/g



0 dB = 0.680mW/g

Fig.59 Flat Phantom Body-worn Position 850MHz CH251 with the display of the handset toward the ground

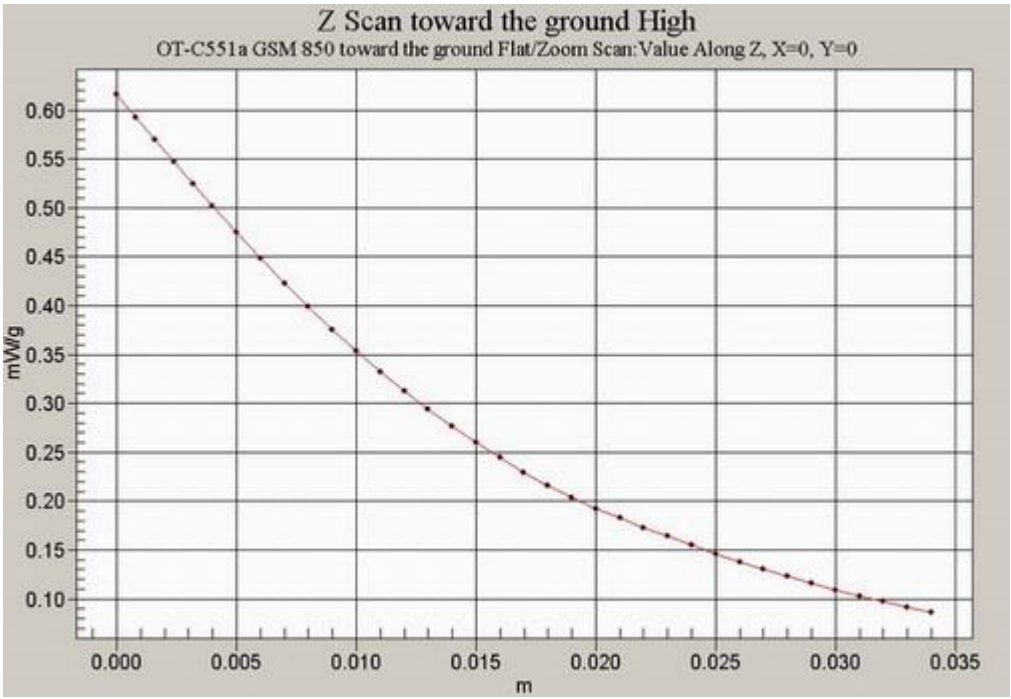
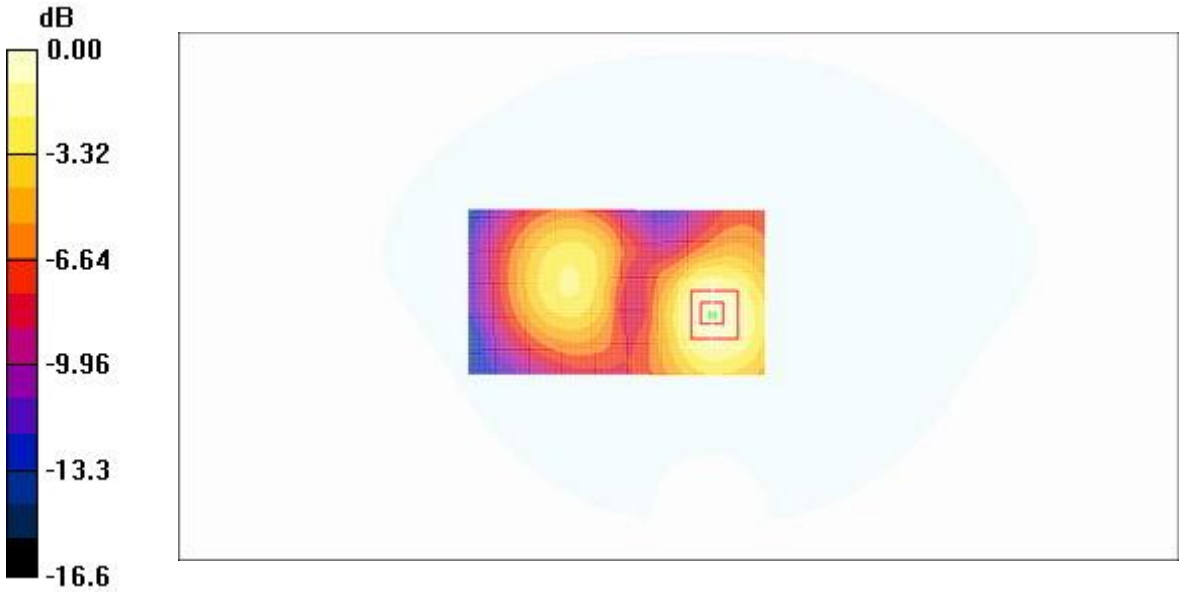


Fig. 60 Z-Scan at power reference point (Flat Phantom 850MHz CH251 with the display of the handset toward the ground)

1900 Body Towards Phantom Low

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Phantom Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.26 V/m; Power Drift = -0.089 dB
Maximum value of SAR (interpolated) = 0.093 mW/g

Towards Phantom Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.26 V/m; Power Drift = -0.089 dB
Maximum value of SAR (measured) = 0.089 mW/g
Peak SAR (extrapolated) = 0.135 W/kg
SAR(1 g) = 0.082 mW/g; SAR(10 g) = 0.049 mW/g



0 dB = 0.089mW/g

Fig. 61 Flat Phantom Body-worn Position 1900MHz CH512 with the display of the handset toward the phantom

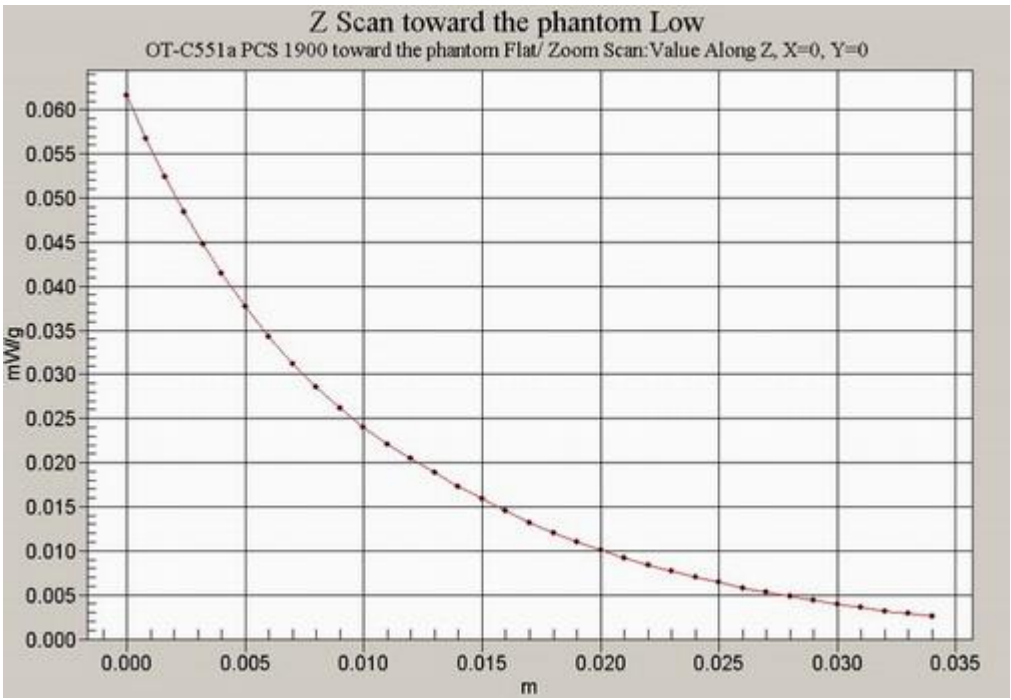
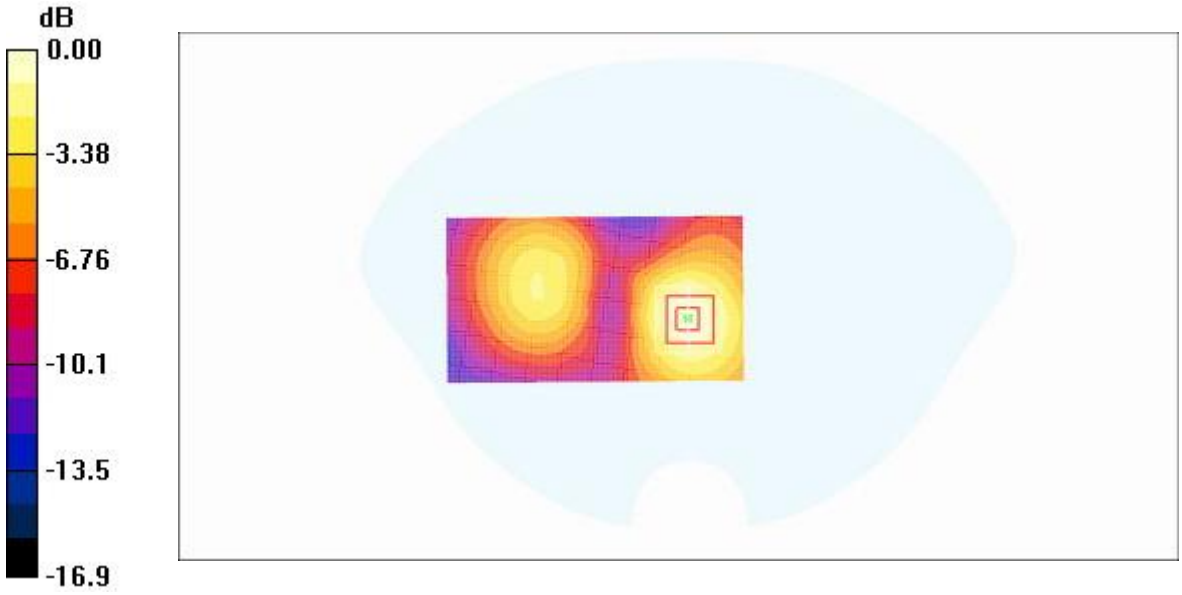


Fig. 62 Z-Scan at power reference point (Flat Phantom 1900MHz CH512 with the display of the handset toward the phantom)

1900 Body Towards Phantom Middle

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Phantom Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.04 V/m; Power Drift = -0.093 dB
Maximum value of SAR (interpolated) = 0.085 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.04 V/m; Power Drift = -0.093 dB
Maximum value of SAR (measured) = 0.082 mW/g
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.074 mW/g; SAR(10 g) = 0.044 mW/g



0 dB = 0.082mW/g

Fig.63 Flat Phantom Body-worn Position 1900MHz CH661 with the display of the handset toward the phantom

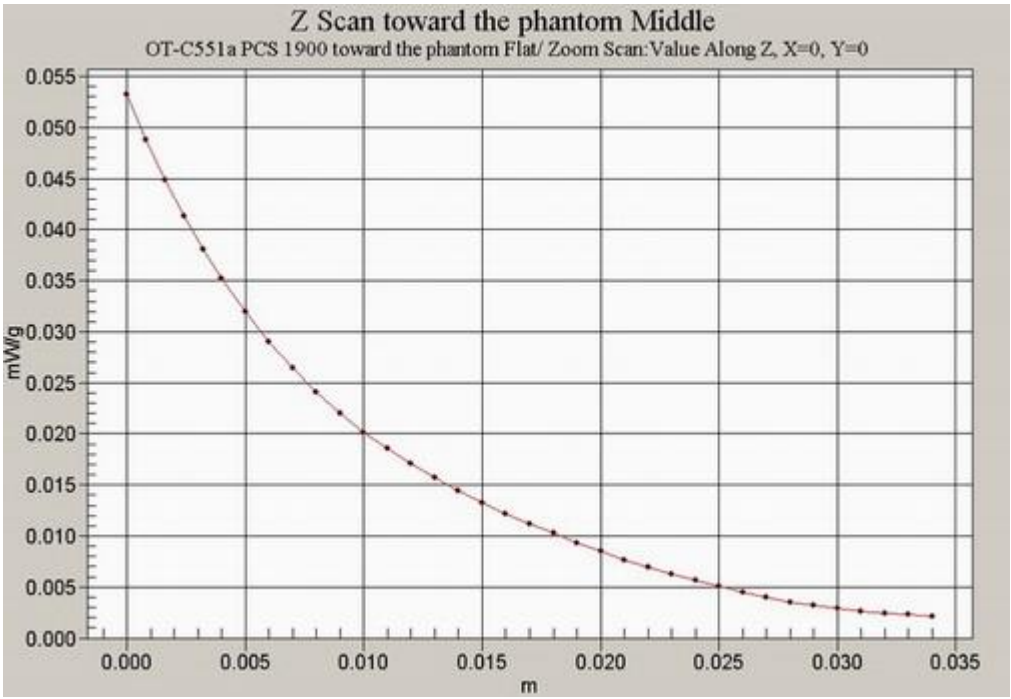
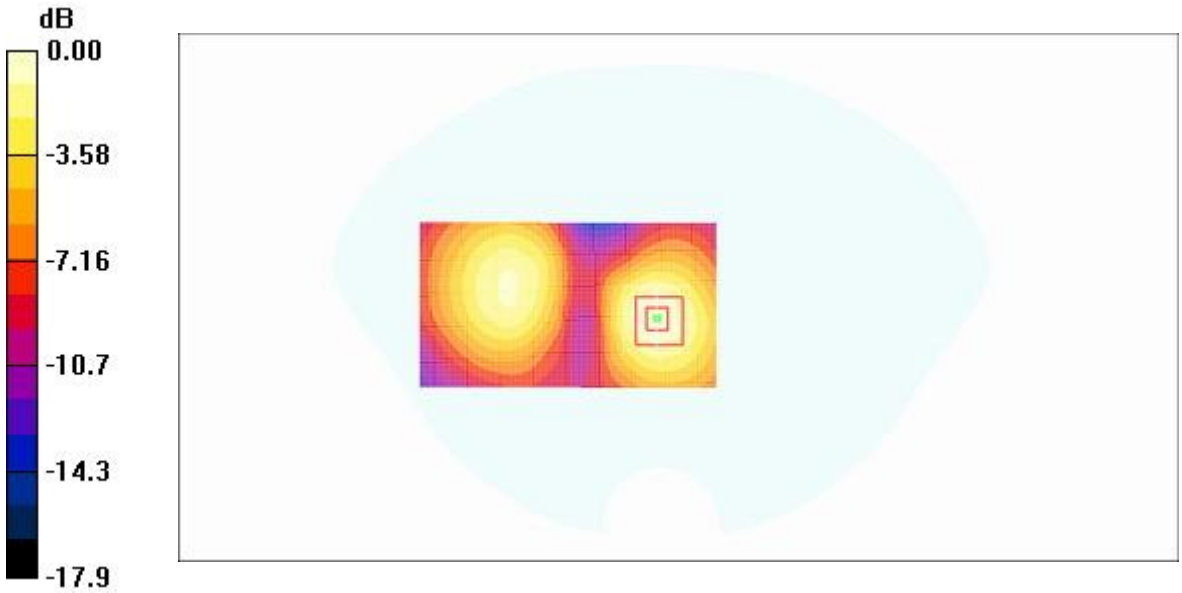


Fig. 64 Z-Scan at power reference point (Flat Phantom 1900MHz CH661 with the display of the handset toward the phantom)

1900 Body Towards Phantom High

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Phantom High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.51 V/m; Power Drift = 0.049 dB
Maximum value of SAR (interpolated) = 0.082 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.51 V/m; Power Drift = 0.049 dB
Maximum value of SAR (measured) = 0.079 mW/g
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.072 mW/g; SAR(10 g) = 0.042 mW/g



0 dB = 0.079mW/g

Fig. 65 Flat Phantom Body-worn Position 1900MHz CH810 with the display of the handset toward the phantom

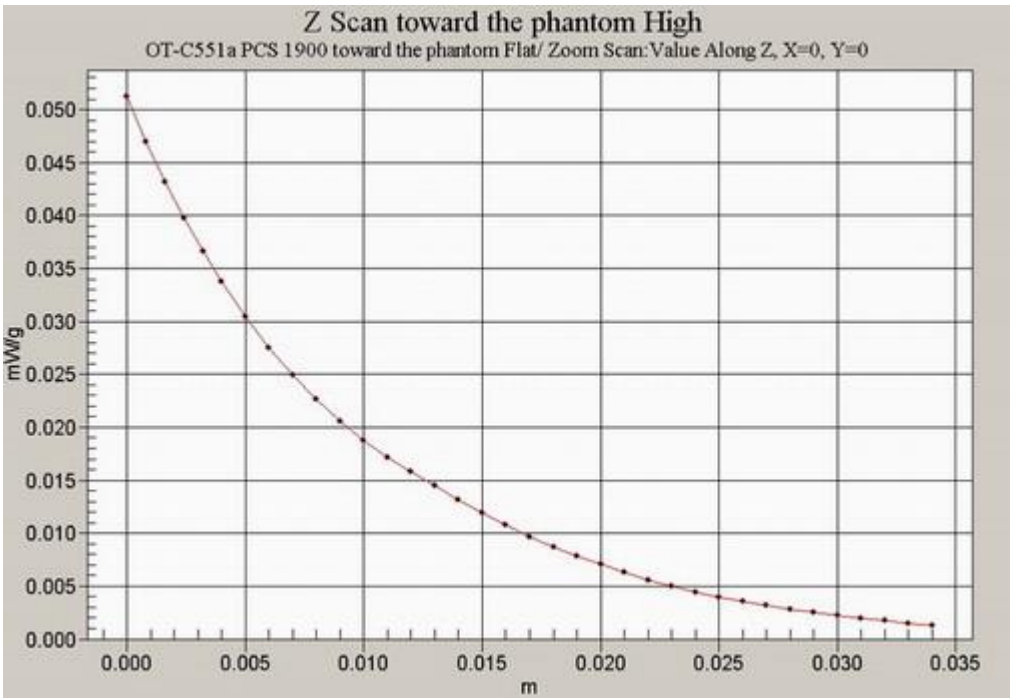
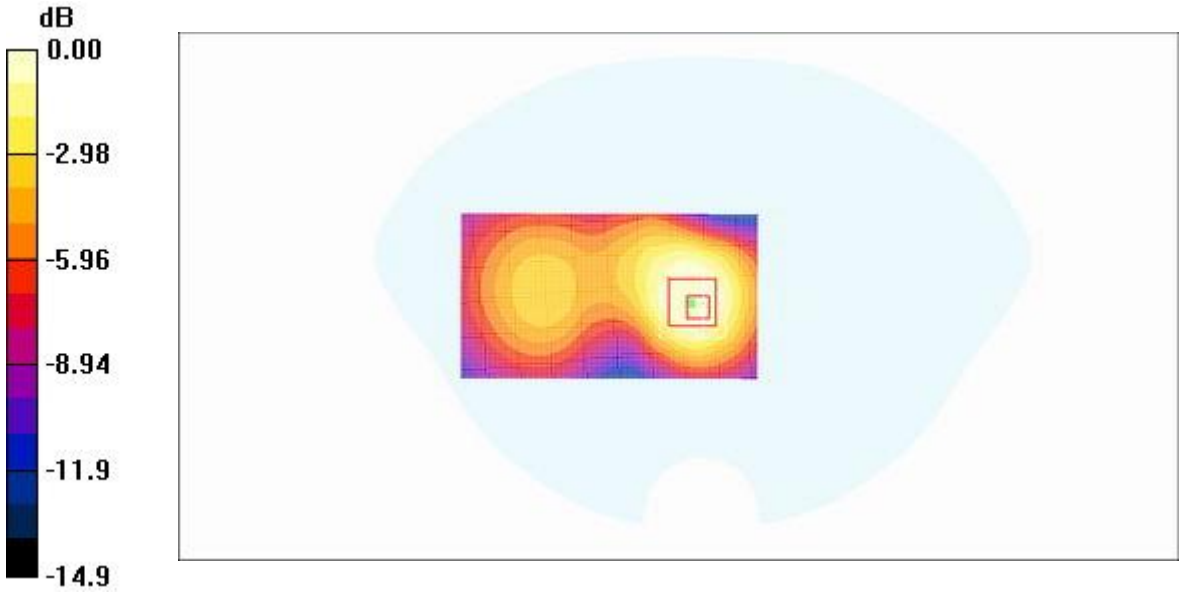


Fig. 66 Z-Scan at power reference point (Flat Phantom 1900MHz CH810 with the display of the handset toward the phantom)

1900 Body Towards Ground Low

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Ground Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 12.1 V/m; Power Drift = -0.130 dB
Maximum value of SAR (interpolated) = 0.212 mW/g

Towards Ground Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.1 V/m; Power Drift = -0.130 dB
Maximum value of SAR (measured) = 0.196 mW/g
Peak SAR (extrapolated) = 0.318 W/kg
SAR(1 g) = 0.184 mW/g; SAR(10 g) = 0.111 mW/g



0 dB = 0.196mW/g

Fig. 67 Flat Phantom Body-worn Position 1900MHz CH512 with the display of the handset toward the ground

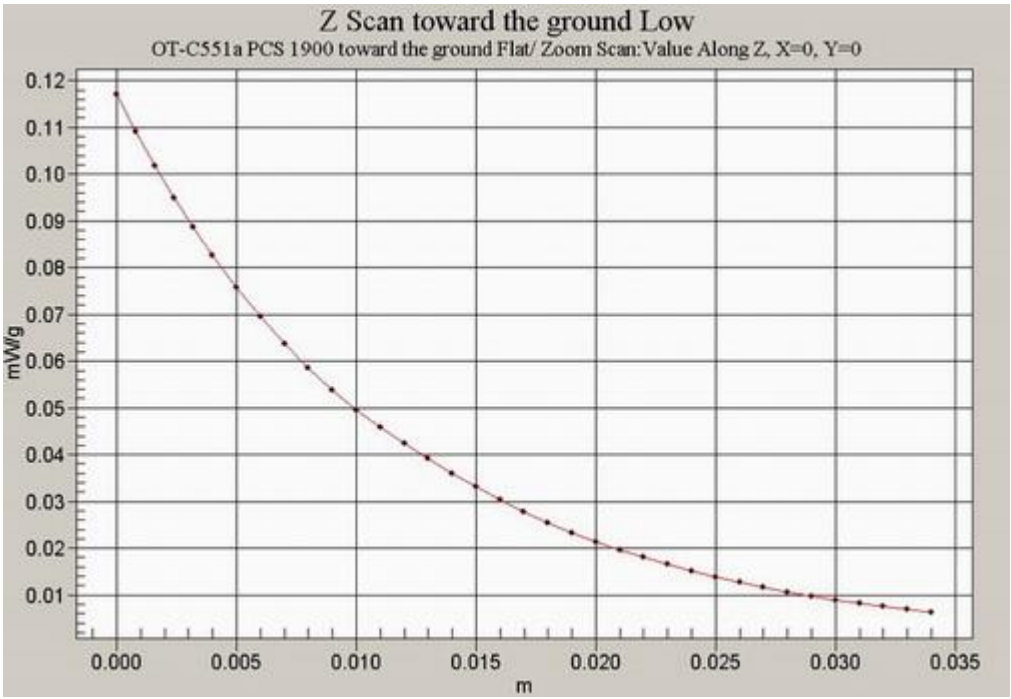
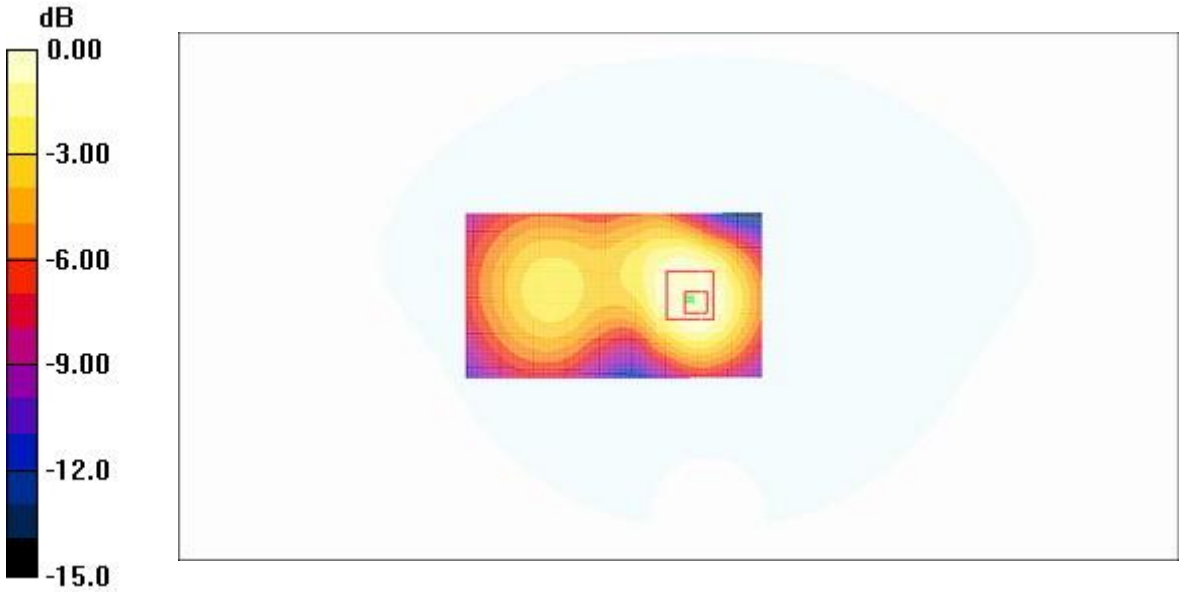


Fig. 68 Z-Scan at power reference point (Flat Phantom 1900MHz CH512 with the display of the handset toward the ground)

1900 Body Towards Ground Middle

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Ground Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 10.7 V/m; Power Drift = -0.038 dB
Maximum value of SAR (interpolated) = 0.177 mW/g

Towards Ground Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.7 V/m; Power Drift = -0.038 dB
Maximum value of SAR (measured) = 0.165 mW/g
Peak SAR (extrapolated) = 0.270 W/kg
SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.095 mW/g



0 dB = 0.165mW/g

Fig. 69 Flat Phantom Body-worn Position 1900MHz CH661 with the display of the handset toward the ground

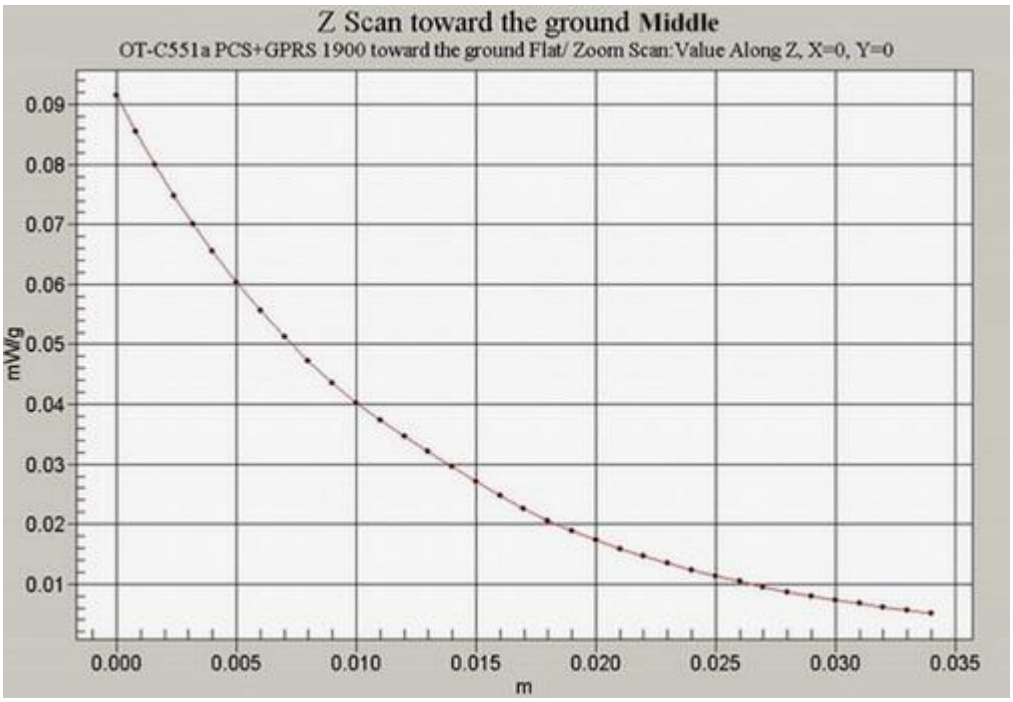
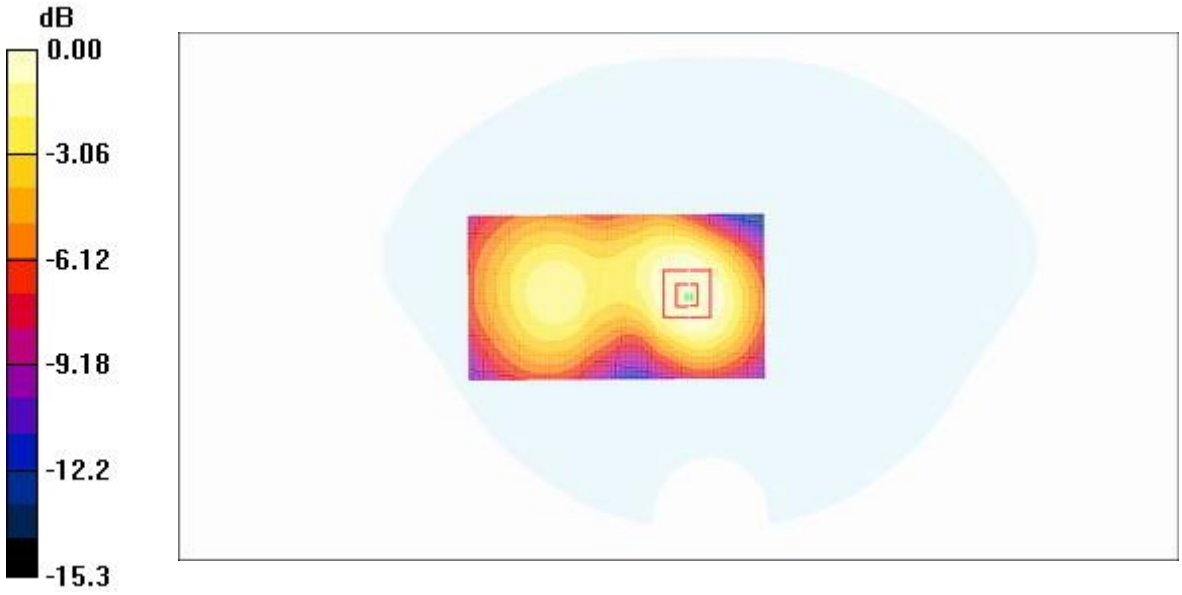


Fig. 70 Z-Scan at power reference point (Flat Phantom 1900MHz CH661 with the display of the handset toward the ground)

1900 Body Towards Ground High

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:8.3
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 9.84 V/m; Power Drift = -0.188 dB
Maximum value of SAR (interpolated) = 0.157 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.84 V/m; Power Drift = -0.188 dB
Maximum value of SAR (measured) = 0.145 mW/g
Peak SAR (extrapolated) = 0.228 W/kg
SAR(1 g) = 0.135 mW/g; SAR(10 g) = 0.084 mW/g



0 dB = 0.145mW/g

Fig. 71 Flat Phantom Body-worn Position 1900MHz CH810 with the display of the handset toward the ground

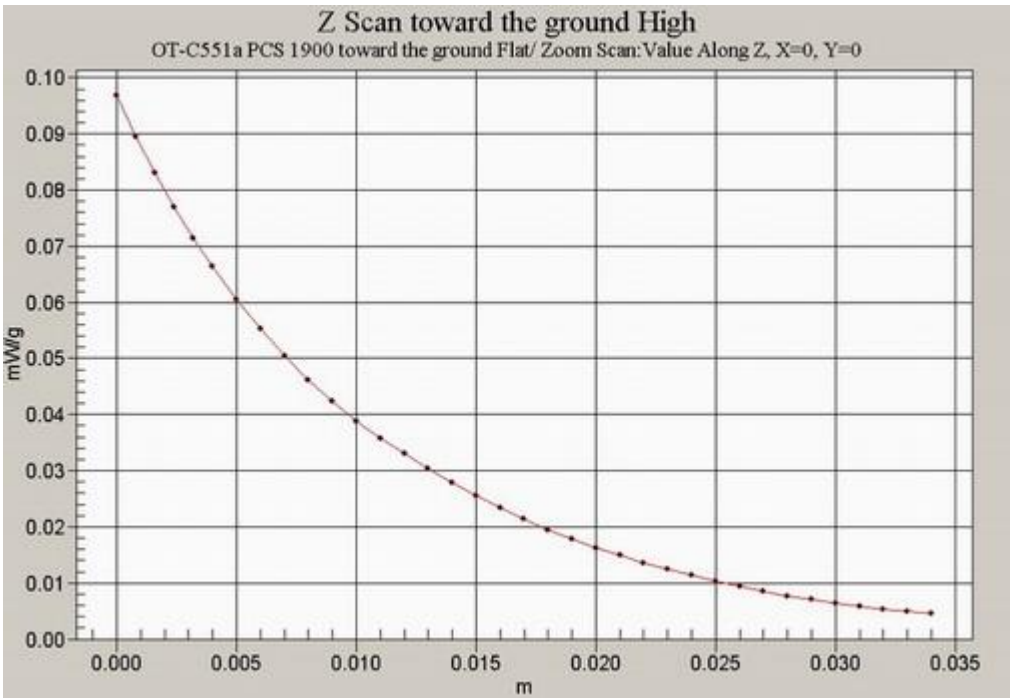
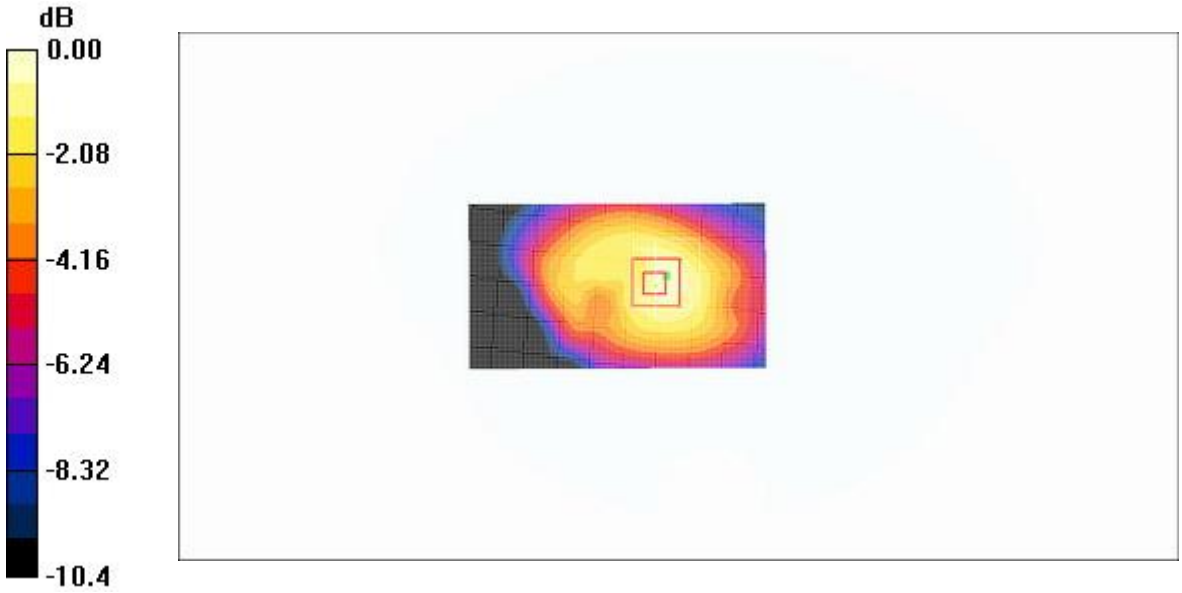


Fig. 72 Z-Scan at power reference point (Flat Phantom 1900MHz CH810 with the display of the handset toward the ground)

850 Body-worn Towards Phantom Low With GPRS

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Phantom Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 14.9 V/m; Power Drift = -0.039 dB
Maximum value of SAR (interpolated) = 0.299 mW/g

Towards Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.9 V/m; Power Drift = -0.039 dB
Maximum value of SAR (measured) = 0.313 mW/g
Peak SAR (extrapolated) = 0.379 W/kg
SAR(1 g) = 0.295 mW/g; SAR(10 g) = 0.212 mW/g



0 dB = 0.313mW/g

Fig.73 Flat Phantom Body-worn Position 850MHz GPRS CH128 with the display of the handset toward the phantom

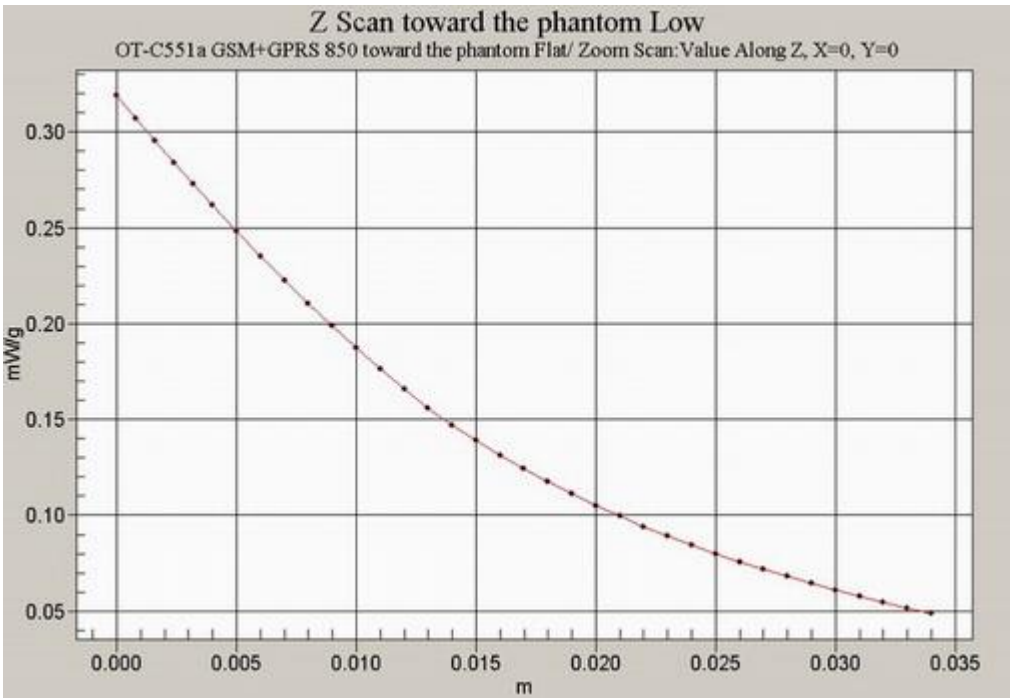
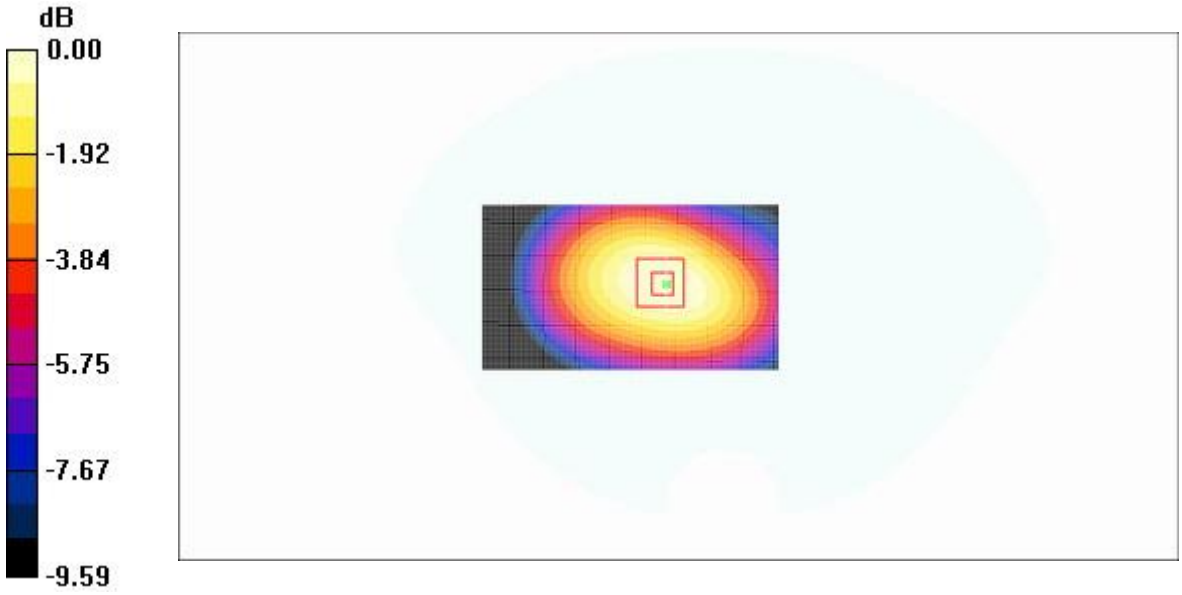


Fig. 74 Z-Scan at power reference point (Flat Phantom 850MHz GPRS CH128 with the display of the handset toward the phantom)

850 Body-worn Towards Phantom Middle With GPRS

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 17.8 V/m; Power Drift = -0.091 dB
Maximum value of SAR (interpolated) = 0.471 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 17.8 V/m; Power Drift = -0.091 dB
Maximum value of SAR (measured) = 0.462 mW/g
Peak SAR (extrapolated) = 0.571 W/kg
SAR(1 g) = 0.434 mW/g; SAR(10 g) = 0.313 mW/g



0 dB = 0.462mW/g

Fig.75 Flat Phantom Body-worn Position 850MHz GPRS CH190 with the display of the handset toward the phantom

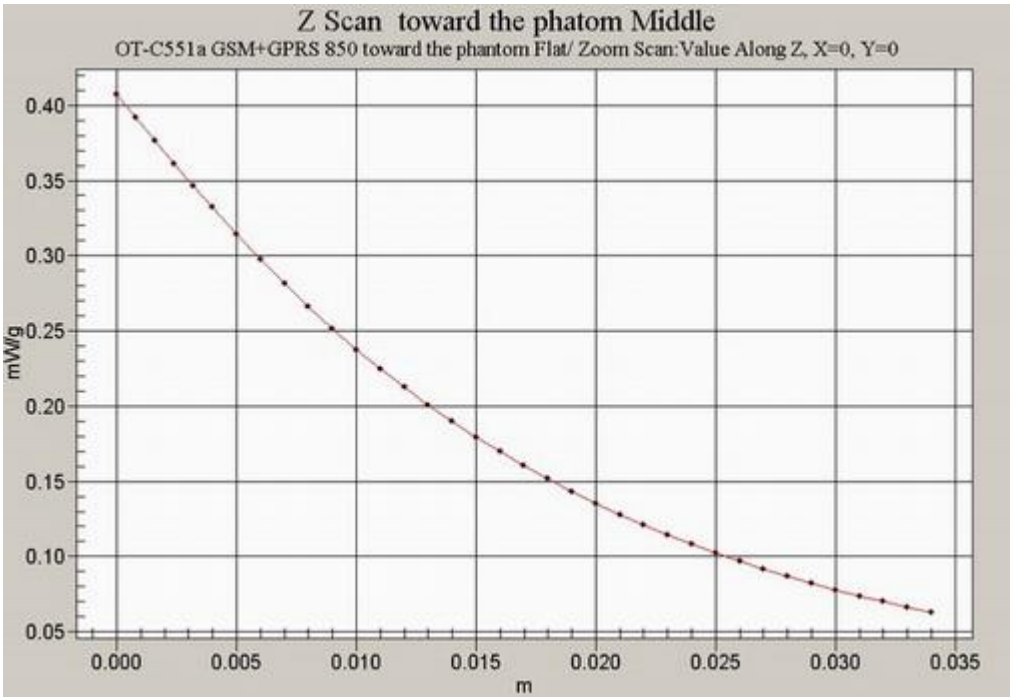
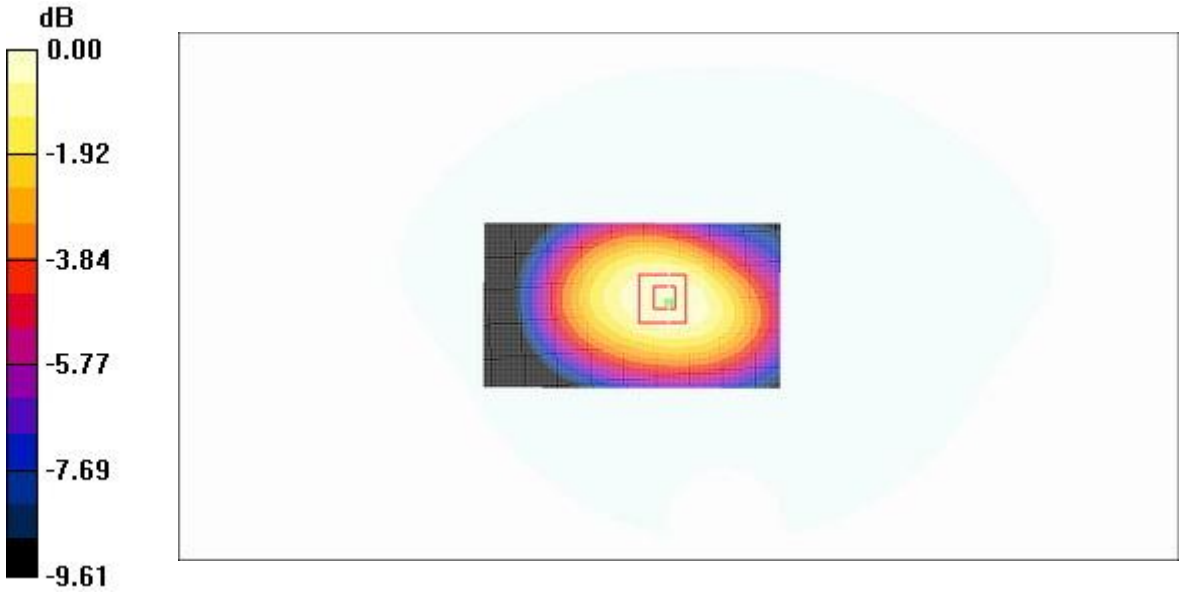


Fig.76 Z-Scan at power reference point (Flat Phantom 850MHz GPRS CH190 with the display of the handset toward the phantom)

850 Body-worn Towards Phantom High With GPRS

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Phantom High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 22.5 V/m; Power Drift = -0.133 dB
Maximum value of SAR (interpolated) = 0.725 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.5 V/m; Power Drift = -0.133 dB
Maximum value of SAR (measured) = 0.704 mW/g
Peak SAR (extrapolated) = 0.878 W/kg
SAR(1 g) = 0.663 mW/g; SAR(10 g) = 0.475 mW/g



0 dB = 0.704mW/g

Fig.77 Flat Phantom Body-worn Position 850MHz GPRS CH251 with the display of the handset toward the phantom

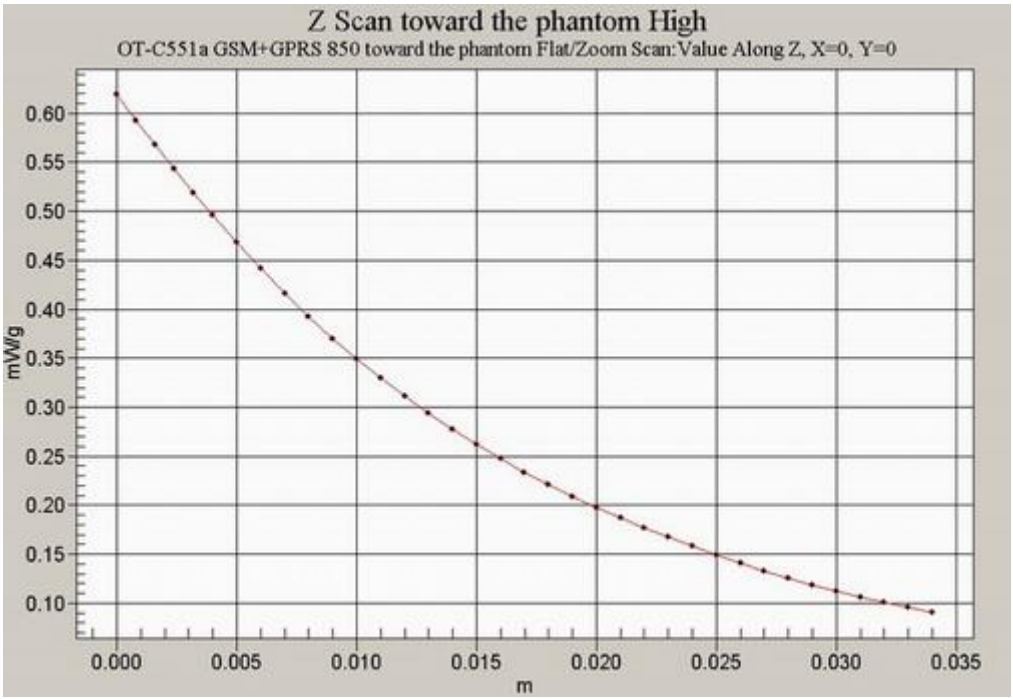
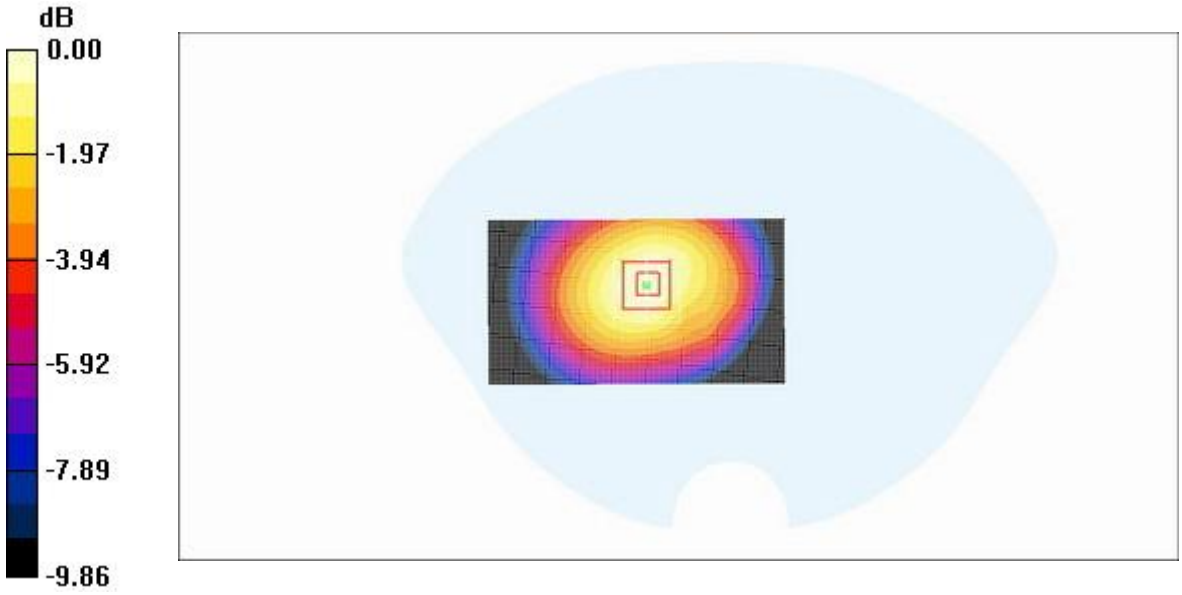


Fig. 78 Z-Scan at power reference point (Flat Phantom 850MHz GPRS CH251 with the display of the handset toward the phantom)

850 Body-worn Towards Ground Low With GPRS

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 869.2 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Ground Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21.7 V/m; Power Drift = 0.00 dB
Maximum value of SAR (interpolated) = 1.04 mW/g

Towards Ground Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.7 V/m; Power Drift = 0.00 dB
Maximum value of SAR (measured) = 1.02 mW/g
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.963 mW/g; SAR(10 g) = 0.677 mW/g



0 dB = 1.02mW/g

Fig.79 Flat Phantom Body-worn Position 850MHz GPRS CH128 with the display of the handset toward the ground

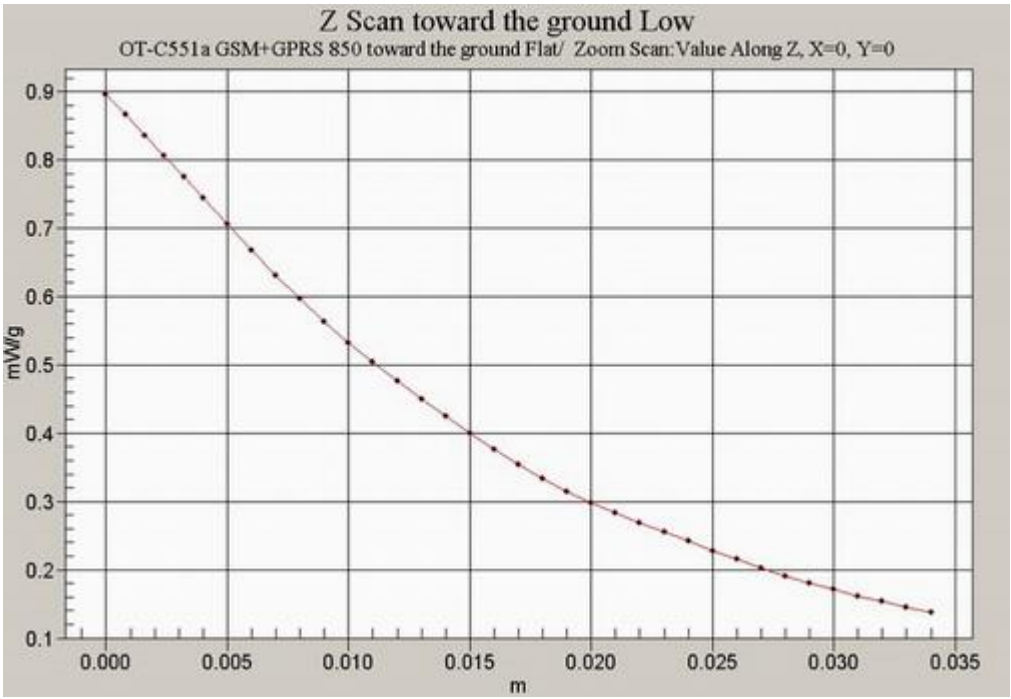
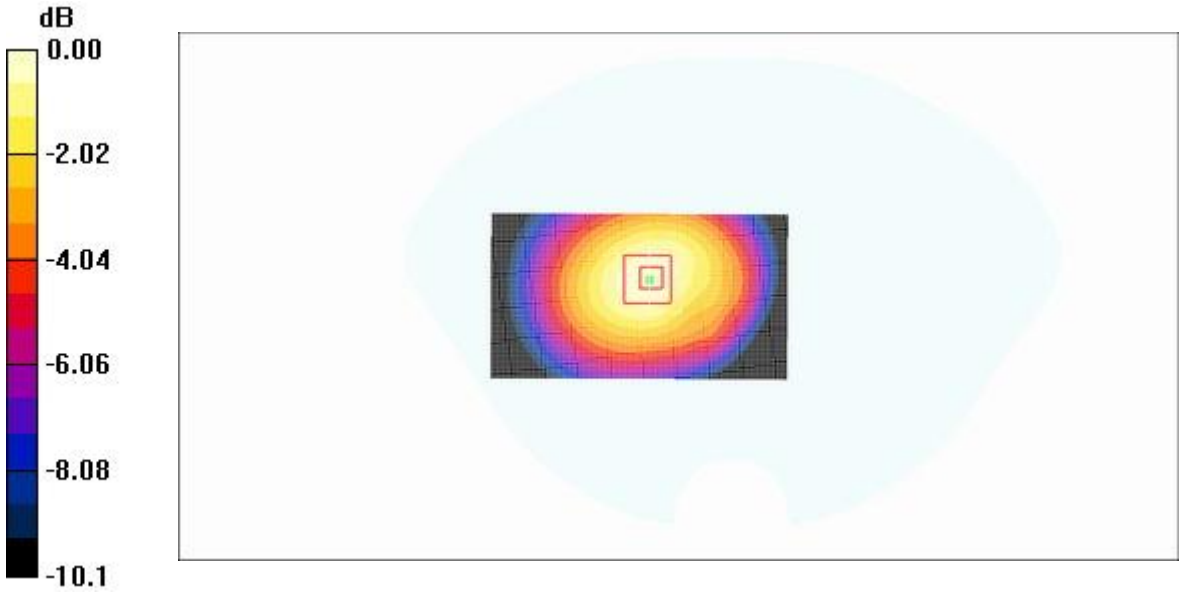


Fig. 80 Z-Scan at power reference point (Flat Phantom 850MHz GPRS CH128 with the display of the handset toward the ground)

850 Body-worn Towards Ground Middle With GPRS

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 881.6MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Ground Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 24.6 V/m; Power Drift = -0.109 dB
Maximum value of SAR (interpolated) = 1.33 mW/g

Towards Ground Middle /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.6 V/m; Power Drift = -0.109 dB
Maximum value of SAR (measured) = 1.31 mW/g
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.861 mW/g



0 dB = 1.31mW/g

Fig.81 Flat Phantom Body-worn Position 850MHz GPRS CH190 with the display of the handset toward the ground

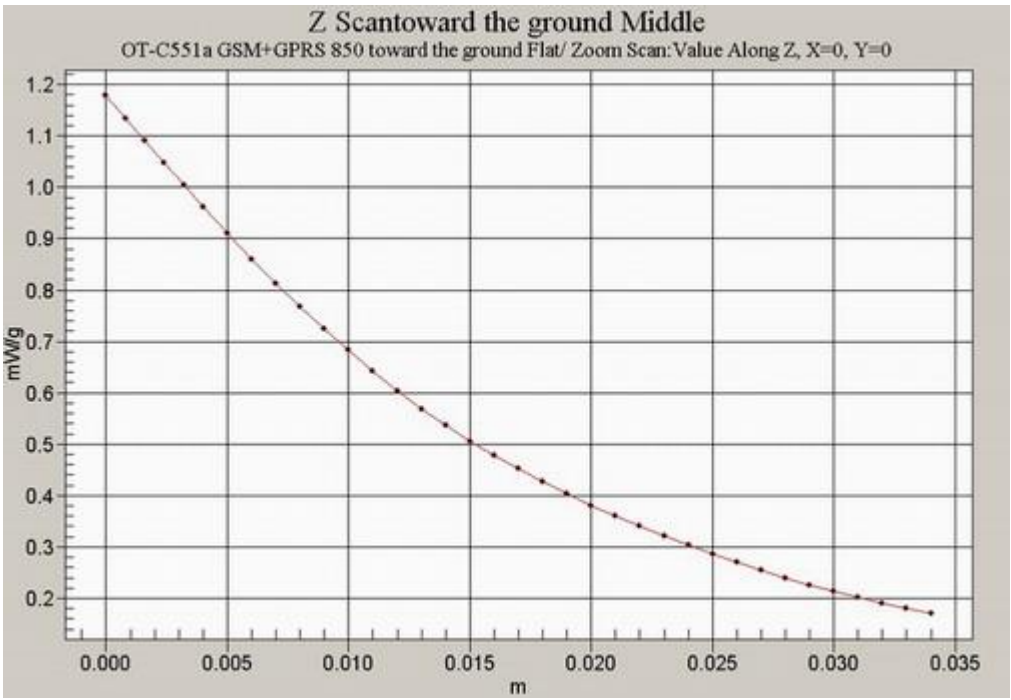
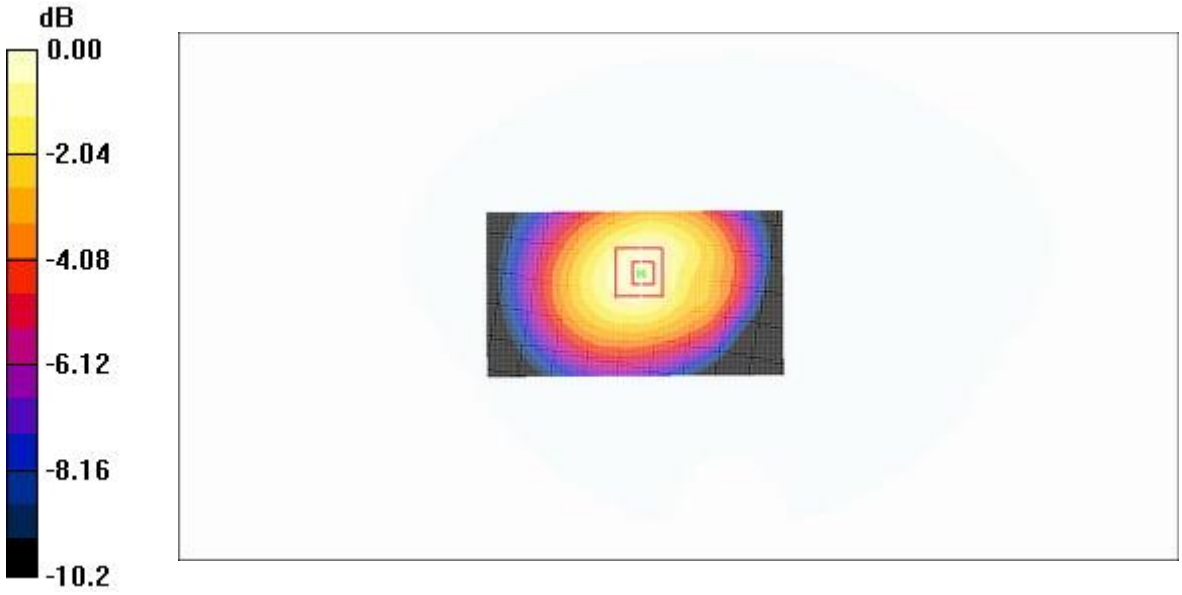


Fig. 82 Z-Scan at power reference point (Flat Phantom 850MHz GPRS CH190 with the display of the handset toward the ground)

850 Body-worn Towards Ground High With GPRS

Electronics: DAE3 Sn589
Communication System: GSM 850 Frequency: 893.8MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(6.45, 6.45, 6.45)
Towards Ground High /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 23.2 V/m; Power Drift = 0.050 dB
Maximum value of SAR (interpolated) = 1.31 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.2 V/m; Power Drift = 0.050 dB
Maximum value of SAR (measured) = 1.31 mW/g
Peak SAR (extrapolated) = 1.63 W/kg
SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.860 mW/g



0 dB = 1.31mW/g

Fig.83 Flat Phantom Body-worn Position 850MHz GPRS CH251 with the display of the handset toward the ground

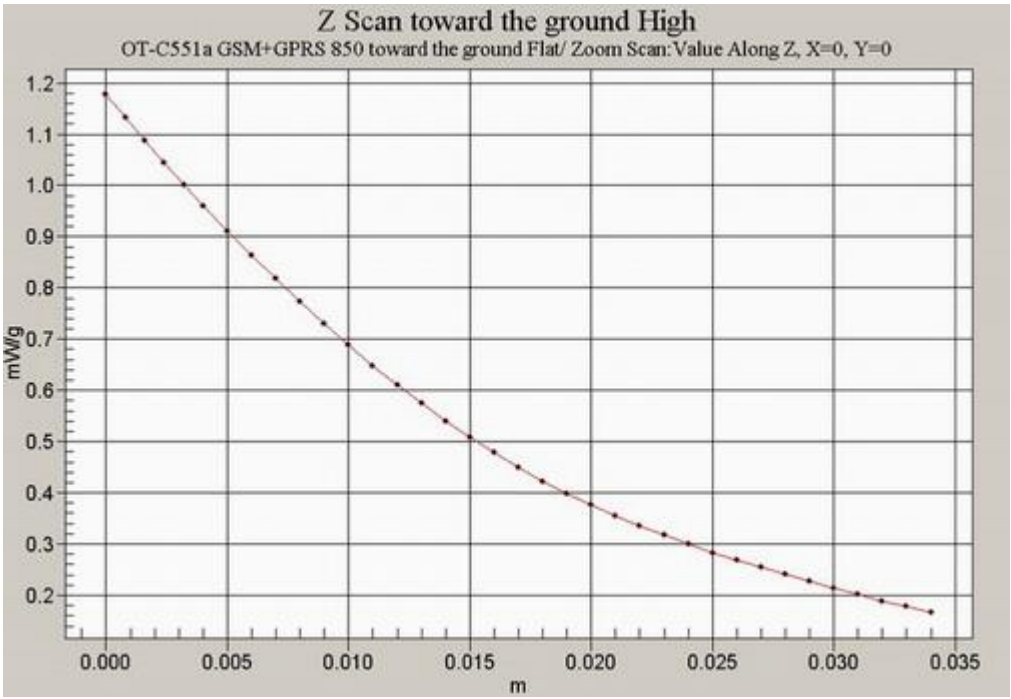
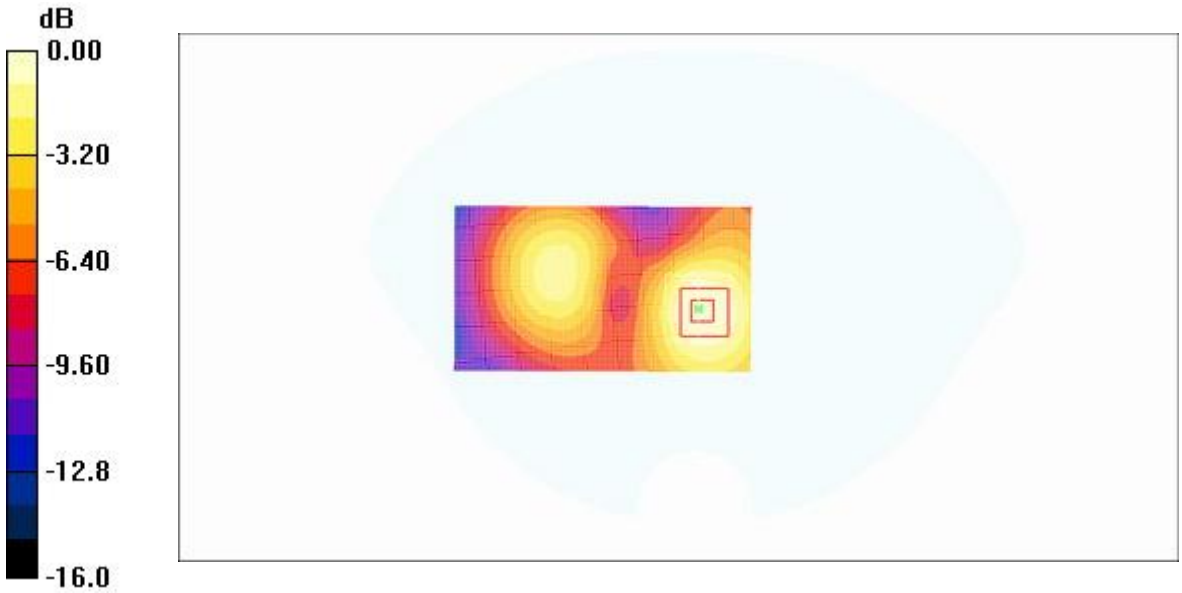


Fig. 84 Z-Scan at power reference point (Flat Phantom 850MHz GPRS CH251 with the display of the handset toward the ground)

1900 Body-worn Towards Phantom Low with GPRS

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Phantom Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 10.5 V/m; Power Drift = 0.056 dB
Maximum value of SAR (interpolated) = 0.162 mW/g

Towards Phantom Low/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.056 dB
Maximum value of SAR (measured) = 0.144 mW/g
Peak SAR (extrapolated) = 0.217 W/kg
SAR(1 g) = 0.134 mW/g; SAR(10 g) = 0.082 mW/g



0 dB = 0.144mW/g

Fig.85 Flat Phantom Body-worn Position 1900MHz GPRS CH512 with the display of the handset toward the phantom

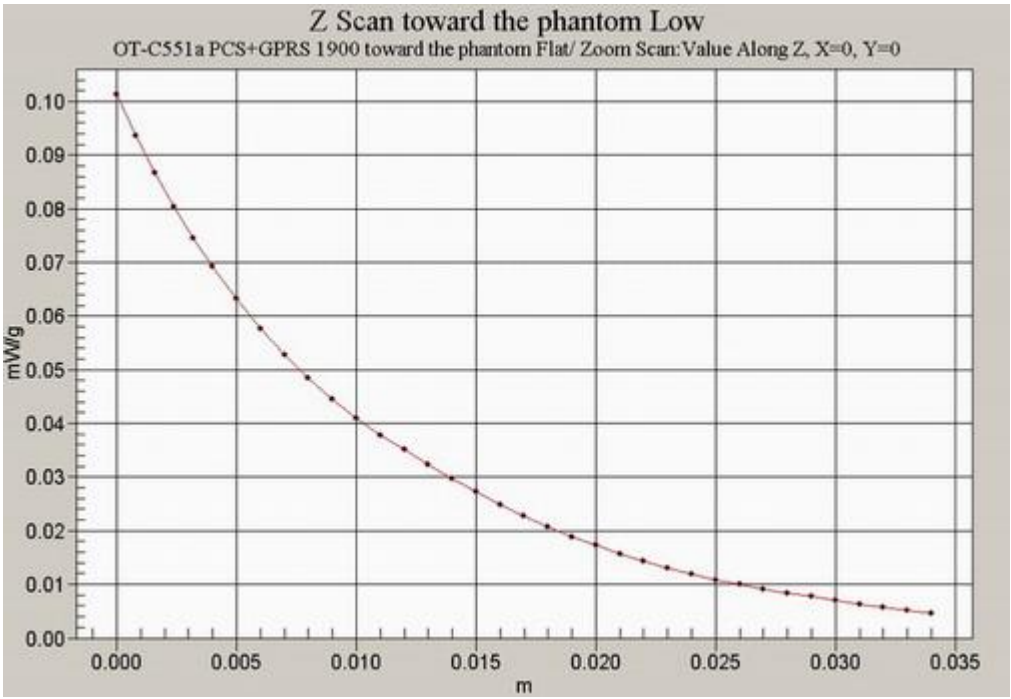
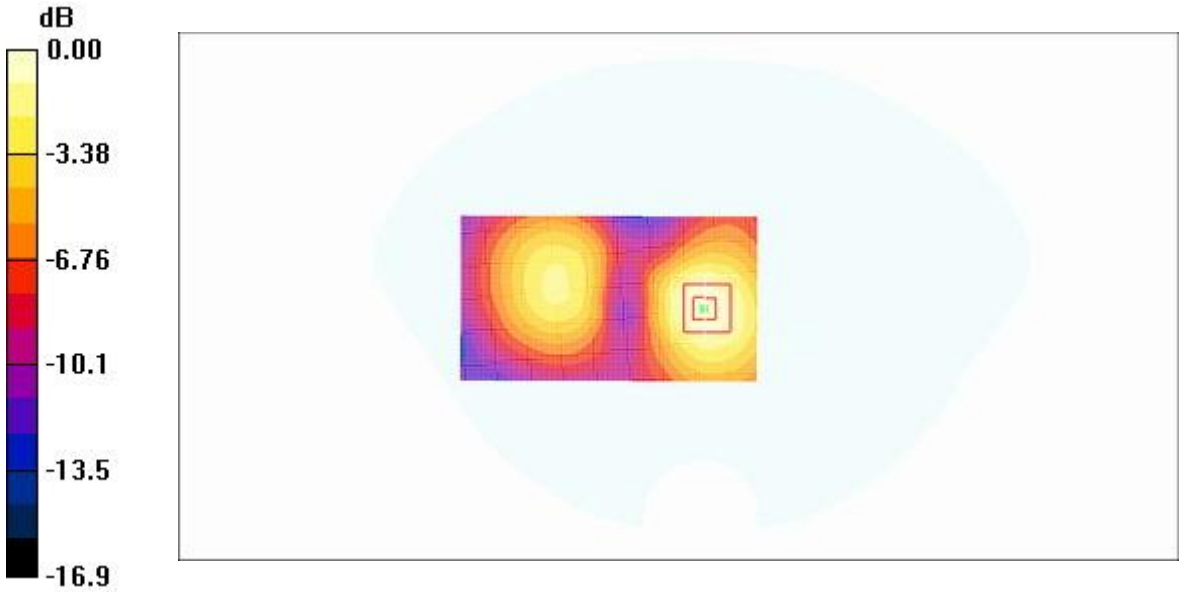


Fig. 86 Z-Scan at power reference point (Flat Phantom 1900MHz GPRS CH512 with the display of the handset toward the phantom)

1900 Body-worn Towards Phantom Middle with GPRS

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Phantom Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.97 V/m; Power Drift = -0.037 dB
Maximum value of SAR (interpolated) = 0.097 mW/g

Towards Phantom Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.97 V/m; Power Drift = -0.037 dB
Maximum value of SAR (measured) = 0.092 mW/g
Peak SAR (extrapolated) = 0.137 W/kg
SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.051 mW/g



0 dB = 0.092mW/g

Fig.87 Flat Phantom Body-worn Position 1900MHz GPRS CH661 with the display of the handset toward the phantom

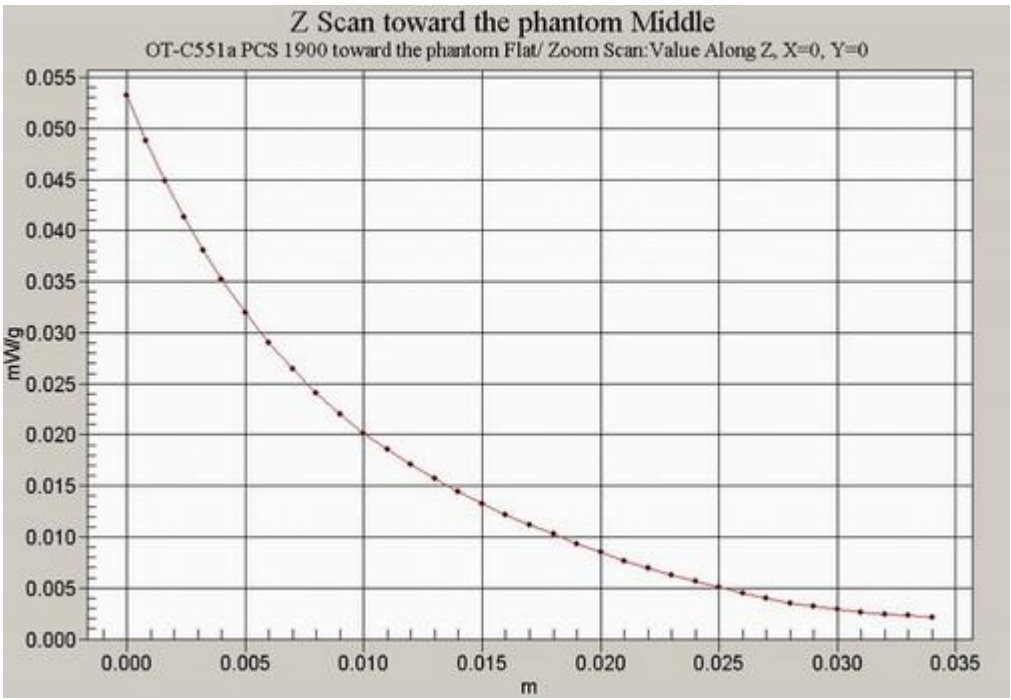
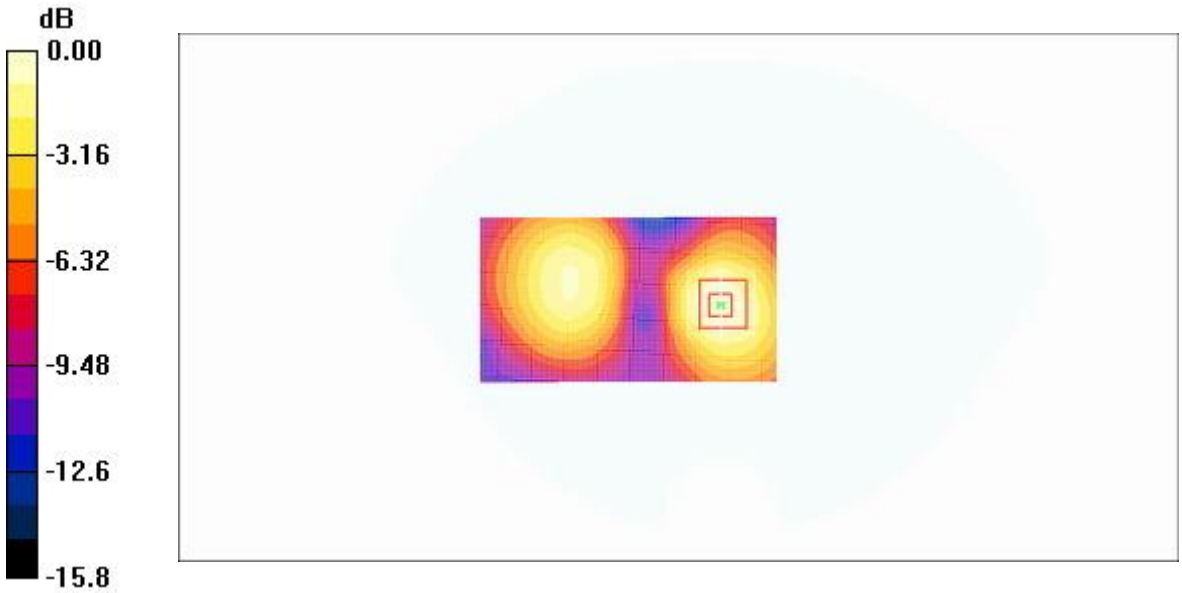


Fig.88 Z-Scan at power reference point (Flat Phantom 1900MHz GPRS CH661 with the display of the handset toward the phantom)

1900 Body-worn Towards Phantom High with GPRS

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Phantom High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.55 V/m; Power Drift = -0.170 dB
Maximum value of SAR (interpolated) = 0.086 mW/g

Towards Phantom High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.55 V/m; Power Drift = -0.170 dB
Maximum value of SAR (measured) = 0.081 mW/g
Peak SAR (extrapolated) = 0.121 W/kg
SAR(1 g) = 0.075 mW/g; SAR(10 g) = 0.045 mW/g



0 dB = 0.081mW/g

Fig.89 Flat Phantom Body-worn Position 1900MHz GPRS CH810 with the display of the handset toward the phantom

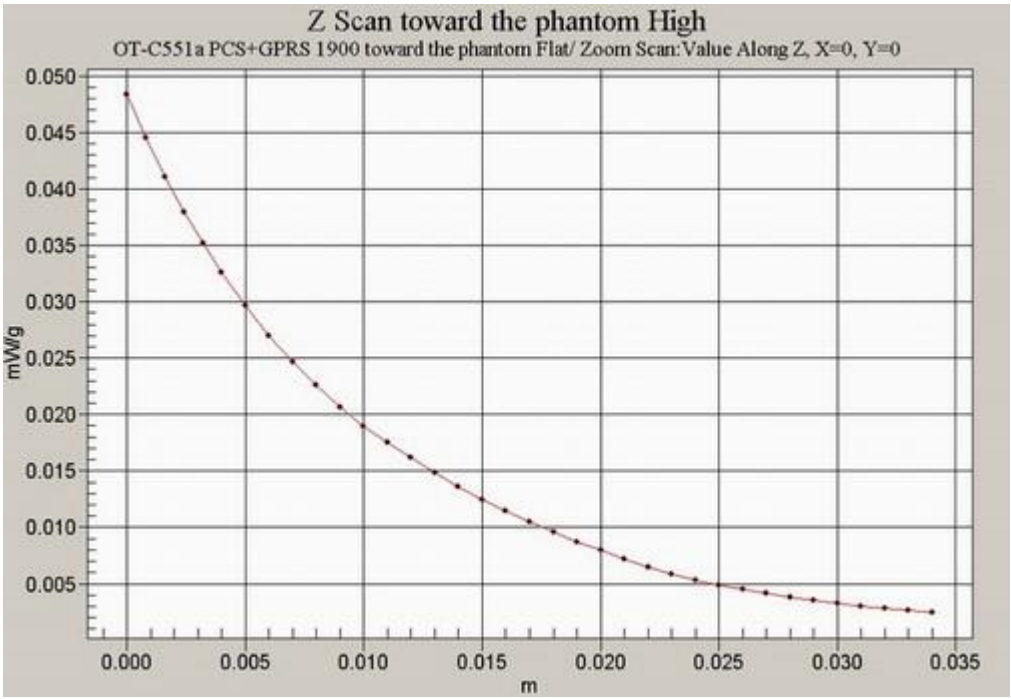
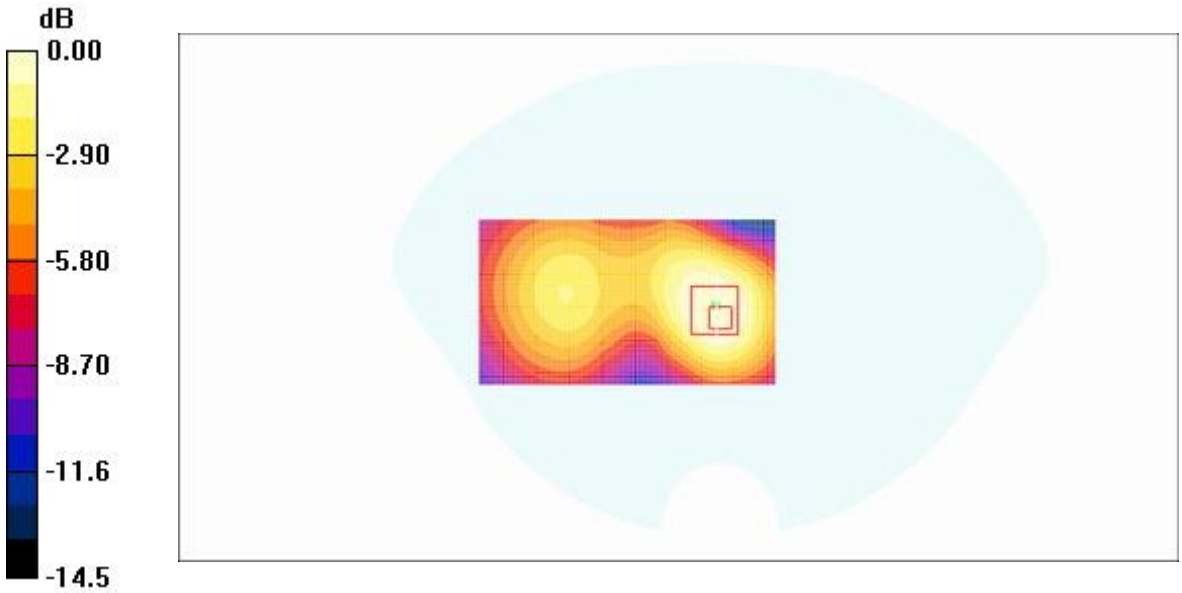


Fig. 90 Z-Scan at power reference point (Flat Phantom 1900MHz GPRS CH810 with the display of the handset toward the phantom)

1900 Body-worn Towards Ground Low with GPRS

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1850.2 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Ground Low /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 14.4 V/m; Power Drift = -0.182 dB
Maximum value of SAR (interpolated) = 0.290 mW/g

Towards Ground Low /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.4 V/m; Power Drift = -0.182 dB
Maximum value of SAR (measured) = 0.275 mW/g
Peak SAR (extrapolated) = 0.440 W/kg
SAR(1 g) = 0.259 mW/g; SAR(10 g) = 0.160 mW/g



0 dB = 0.275mW/g

Fig.91 Flat Phantom Body-worn Position 1900MHz GPRS CH512 with the display of the handset toward the ground

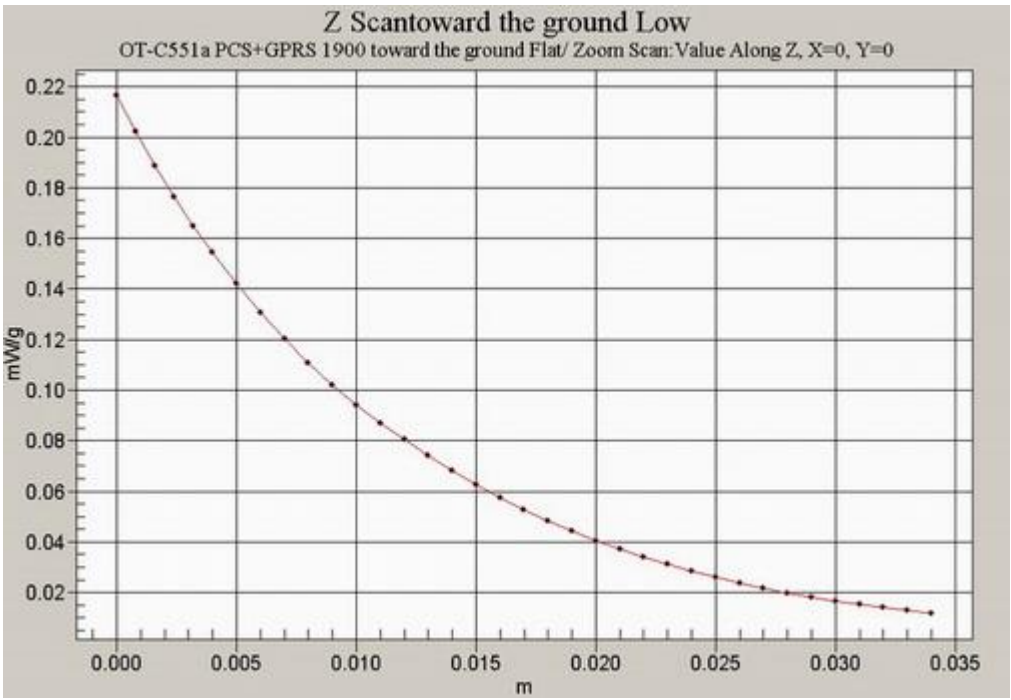
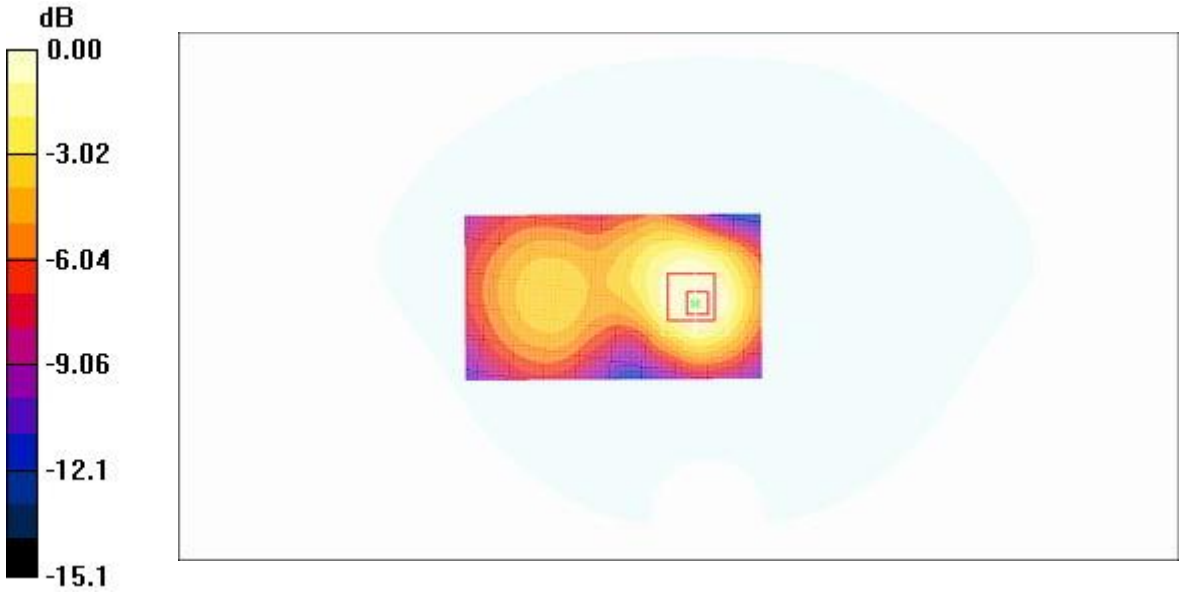


Fig. 92 Z-Scan at power reference point (Flat Phantom 1900MHz GPRS CH512 with the display of the handset toward the ground)

1900 Body-worn Towards Ground Middle with GPRS

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1880 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Ground Middle /Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 10.9 V/m; Power Drift = -0.101 dB
Maximum value of SAR (interpolated) = 0.177 mW/g

Towards Ground Middle/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.9 V/m; Power Drift = -0.101 dB
Maximum value of SAR (measured) = 0.165 mW/g
Peak SAR (extrapolated) = 0.259 W/kg
SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.096 mW/g



0 dB = 0.165mW/g

Fig.93 Flat Phantom Body-worn Position 1900MHz GPRS CH661 with the display of the handset toward the ground

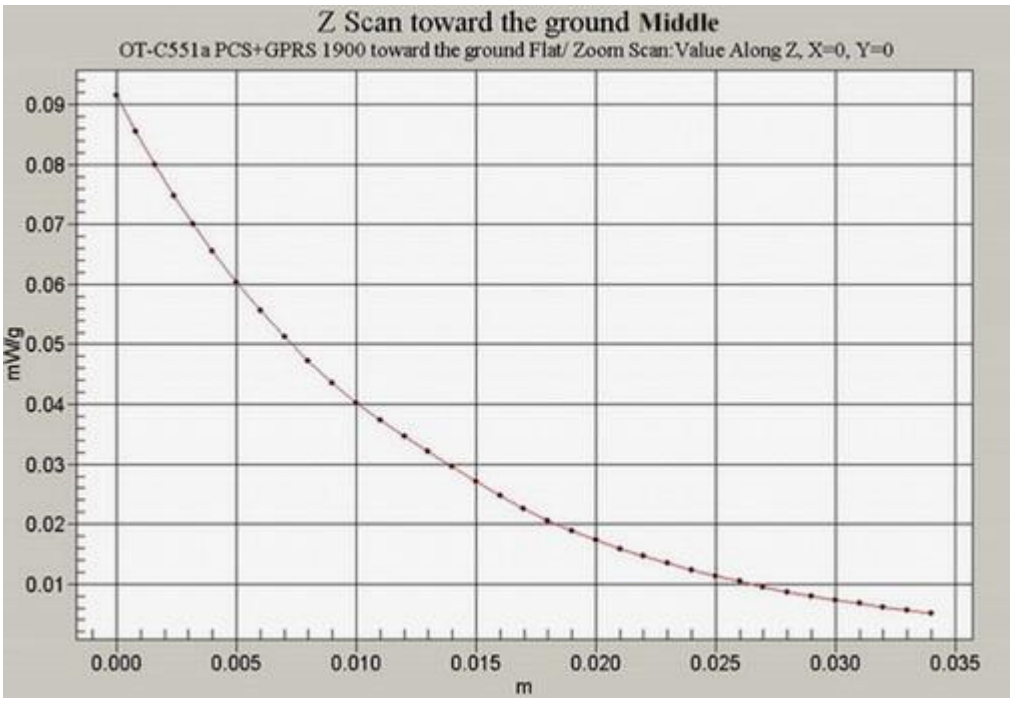
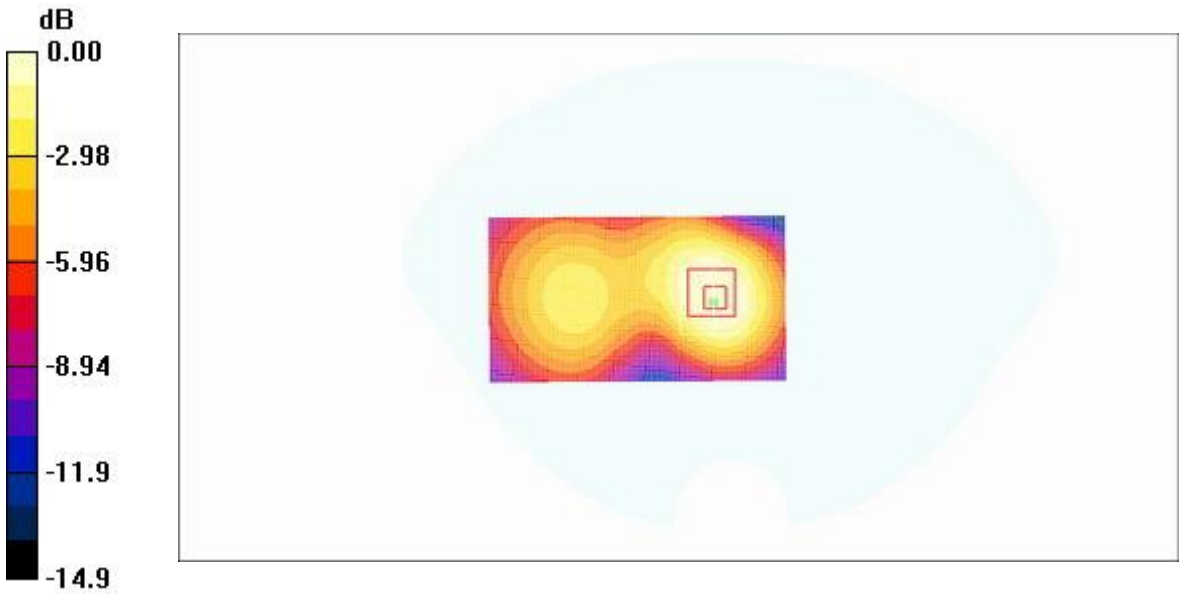


Fig. 94 Z-Scan at power reference point (Flat Phantom 1900MHz GPRS CH661 with the display of the handset toward the ground)

1900 Body-worn Towards Ground High with GPRS

Electronics: DAE3 Sn589
Communication System: GSM 1900MHz Frequency: 1909.8 MHz Duty Cycle: 1:4
Probe: ET3DV6 - SN1600 ConvF(4.88, 4.88, 4.88)
Towards Ground High/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 9.91 V/m; Power Drift = -0.095 dB
Maximum value of SAR (interpolated) = 0.150 mW/g

Towards Ground High/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.91 V/m; Power Drift = -0.095 dB
Maximum value of SAR (measured) = 0.142 mW/g
Peak SAR (extrapolated) = 0.224 W/kg
SAR(1 g) = 0.133 mW/g; SAR(10 g) = 0.083 mW/g



0 dB = 0.142mW/g

Fig.95 Flat Phantom Body-worn Position 1900MHz GPRS CH810 with the display of the handset toward the ground

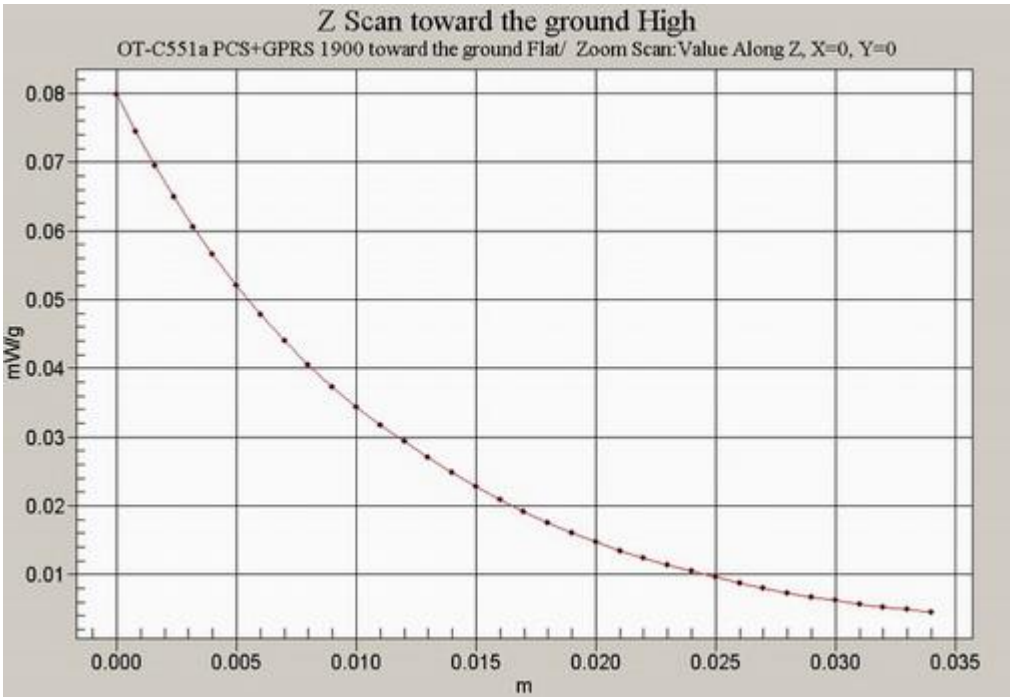


Fig. 96 Z-Scan at power reference point (Flat Phantom 1900MHz GPRS CH810 with the display of the handset toward the ground)

ANNEX D: SYSTEM VALIDATION RESULTS

Test Laboratory: TMC
File Name: 835MHz.da4

DUT: Dipole 835 MHz Type & Serial Number: D835V2 - SN:443
Program: System Performance Check; Dipole 835MHz,Pin=250mW,d=15mm

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm
Reference Value = 54.7 V/m
Peak SAR = 3.47 mW/g
SAR(1 g) = 2.35 mW/g; SAR(10 g) = 1.52 mW/g
Power Drift = -0.01 dB
Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

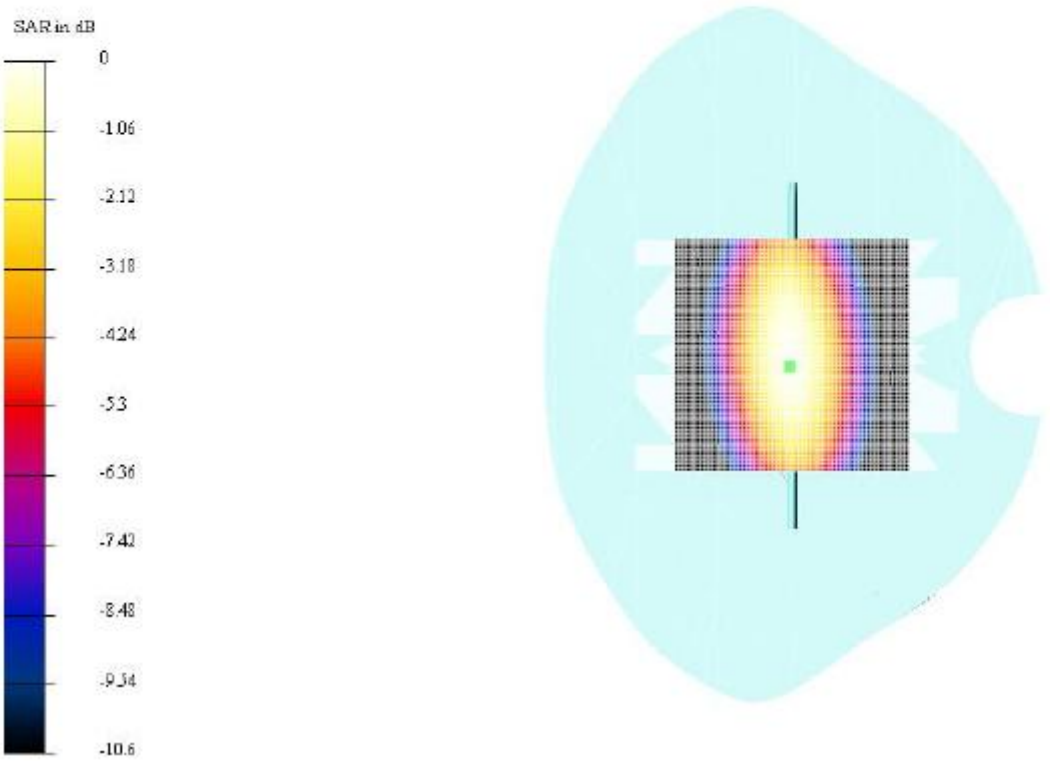


Fig.109 System Performance Check 835MHz 250mW

Test Laboratory: TMC
File Name: D1900_SystemCheck_040403.da4

DUT: Dipole 1900 MHz Type & Serial Number: D1900V2 - SN:541
Program: Unnamed Program; Dipole 1900MHz

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm
Reference Value = 90.9 V/m
Peak SAR = 18.3 mW/g
SAR(1 g) = 9.8 mW/g; SAR(10 g) = 4.91 mW/g
Power Drift = 0.004 dB
Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

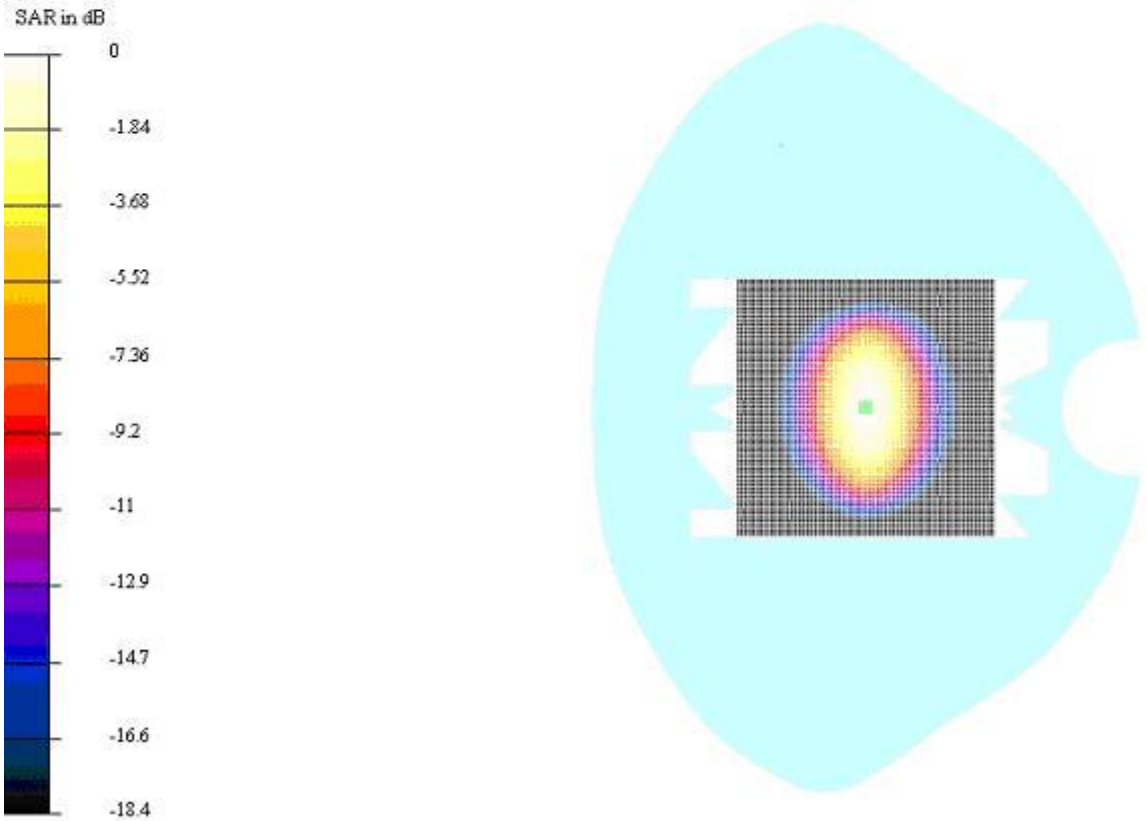


Fig.110 System Performance Check 1900MHz 250mW