PCTEST ENGINEERING LABORATORY, INC.

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http://www.pctestlab.com (email: randy@pctestlab.com)

CERTIFICATE OF COMPLIANCE (SAR EVALUATION)

APPLICANT NAME & ADDRESS:
Symbol Technologies Inc.
1 Symbol Plaza
Holtsville, NY 11742-1300
Attn: Sandy Mazzola, Requlatoty Engineer
CC: Dean La Rosa, Senior Design Engineer

DATE & LOCATION OF TESTING:
Dates of Tests: April 29-30, 2002
Test Report S/N: SAR.220416199.H9P
Test Site: PCTEST Lab, Columbia, MD USA

FCC ID:	**H9PPPT2837**
APPLICANT:	**SYMBOL TECHNOLOGIES Inc.**

EUT Type:	**GSM Handheld Terminal**
Tx Frequency:	**1850.2 – 1909.8 MHz**
Rx Frequency:	**1850.2 – 1909.8 MHz**
Max. RF Output Power:	**1 W EIRP**
Max. SAR Measurement:	**0.165mW/g (2.50 cm) Body SAR**
Trade Name/Model(s):	***SYMBOL PPT-2837***
FCC Classification:	**Licensed Portable Transmitter Worn on Body (PCT)**
FCC Rule Part(s):	**§2.1093; FCC/OET Bulletin 65 Supplement C [July 2001]**
Application Type:	**Certification**
Test Device Serial No.:	***identical* prototype**

This wireless portable device has been shown to be capable of compliance for localized specific absorption rate (SAR) for uncontrolled environment/general population exposure limits specified in ANSI/IEEE Std. C95.1-1992 and had been tested in accordance with the measurement procedures specified in FCC/OET Bulletin 65 Supplement C (2001) and IEEE Std. 1528-200X (Draft 6.4, July 2001).

I attest to the accuracy of data. All measurements reported herein were performed by me or were made under my supervision and are correct to the best of my knowledge and belief. I assume full responsibility for the completeness of these measurements and vouch for the qualifications of all persons taking them.

PCTEST certifies that no party to this application has been denied the FCC benefits pursuant to Section 5301 of the Anti-Drug Abuse Act of 1988, 21 U.S.C. 862.

Randy Ortanez
President

SAR DATA SUMMARY

Mixture Type: 1900MHz Hand

14.1 MEASUREMENT RESULTS (PCS Hand SAR – Touch)-No Body Holster

FREQUENCY		Modulation	Begin / End POWER‡			Separation Distance (cm) ‡‡	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
1850.2	512	GSM	29.58	29.58	Standard	TOUCH	Fixed	**.532**
1880.0	661	GSM	30.0	30.0	Standard	TOUCH	Fixed	**.377**
1909.8	810	GSM	29.92	29.92	Standard	TOUCH	Fixed	**.497**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						**Hand 1.6 W/kg (mW/g)** averaged over 10 gram		

NOTES:

1. The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
2. All modes of operation were investigated, and worst-case results are reported.
3. Battery is fully charged for all readings.

	‡Power Measured	☒	Conducted	☐	ERP	☒	EIRP
4.	SAR Measurement System	☒	DASY3	☐	IDX	☒	No Body Holster
	Phantom Configuration	☐	Left Head	☒	Flat Phantom	☐	Right Head
5.	SAR Configuration	☐	Head	☐	Body	☒	Hand
6.	Test Signal Call Mode	☐	Manu. Test Codes	☐	Base Station Simulator		

7. Tissue parameters and temperatures are listed on the SAR plots.

Randy Ortanez
President

SAR DATA SUMMARY

Mixture Type: 1900MHz Body

14.1 MEASUREMENT RESULTS (PCS Body SAR – Touch)-With Holster

FREQUENCY		Modulation	Begin / End POWER‡			Separation Distance (cm) ‡‡	Antenna Position	SAR (W/kg)
MHz	Ch.		(dBm)		Battery			
1850.2	512	GSM	29.58	29.58	Standard	2.5	Fixed	**.165**
1880.0	661	GSM	30.0	30.0	Standard	2.5	Fixed	**.156**
1909.8	810	GSM	29.92	29.92	Standard	2.5	Fixed	**.165**
ANSI / IEEE C95.1 1992 - SAFETY LIMIT Spatial Peak Uncontrolled Exposure/General Population						**Body 1.6 W/kg (mW/g)** averaged over 1 gram		

NOTES:

1. The test data reported are the worst-case SAR value with the antenna-head position set in a typical configuration. Test procedures used are according to FCC/OET Bulletin 65, Supp.C [July 2001].
2. All modes of operation were investigated, and worst-case results are reported.
3. Battery is fully charged for all readings.

	‡Power Measured	☒	Conducted	☐	ERP	☒	EIRP
4.	SAR Measurement System	☒	DASY3	☐	IDX	☒	With Holster
	Phantom Configuration	☐	Left Head	☒	Flat Phantom	☐	Right Head
5.	SAR Configuration	☐	Head	☒	Body	☐	Hand
6.	Test Signal Call Mode	☐	Manu. Test Codes	☐	Base Station Simulator		

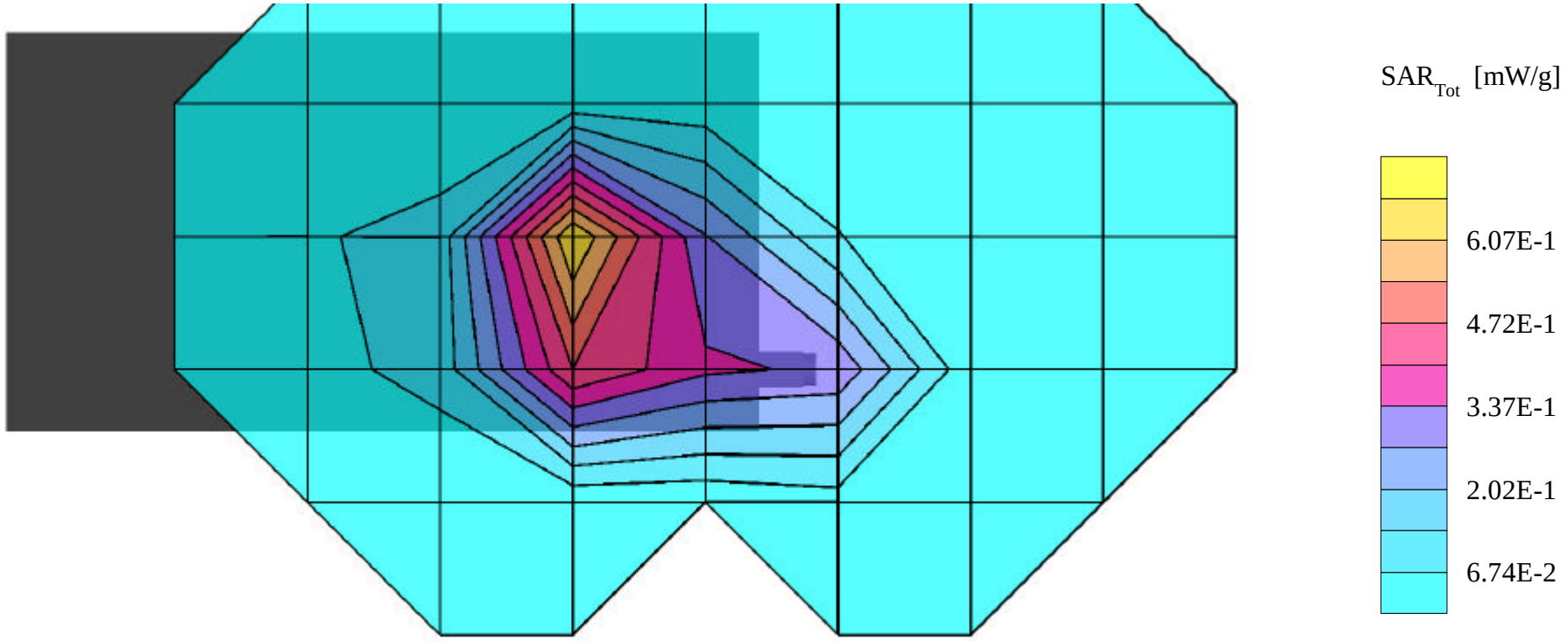
7. Tissue parameters and temperatures are listed on the SAR plots.

Randy Ortanez
President

SYMBOL FCC ID:H9PPPT2837

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1677; ConvF(4.90,4.90,4.90)
Med. Parameters 1900 MHz Muscle: σ = 1.55 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3; Antenna Position -- In; Crest Factor 8.0
SAR (1g): 0.827 mW/g, SAR (10g): 0.497 mW/g

SYMBOL MODEL:PPT2837 GSM HAND HELD TERMINAL
CHAN 810 BODY SAR; Ambient Temp. = 22.2°C / Meas. Tissue Temp. 22.0°C
With no body holster
04-30-2001



SYMBOL FCC ID:H9PPPT2837

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1677; ConvF(4.90,4.90,4.90)

Med. Parameters 1900 MHz Muscle: σ = 1.55 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3; Antenna Position -- In; Crest Factor 8.0

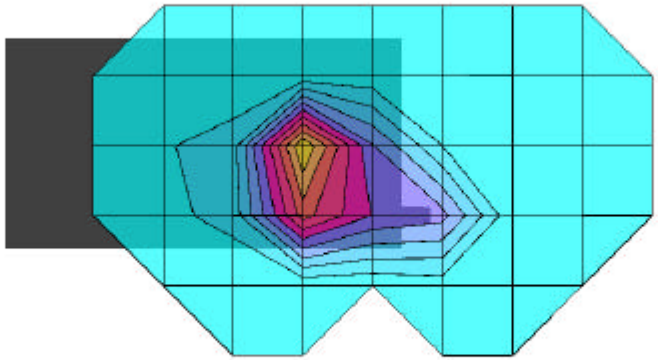
SAR (1g): 0.897 mW/g, SAR (10g): 0.532 mW/g

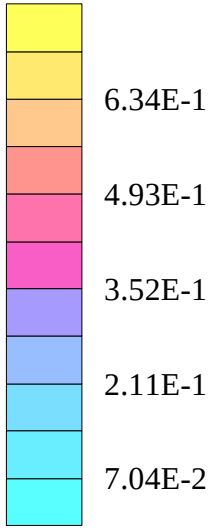
SYMBOL MODEL:PPT2837 GSM HAND HELD TERMINAL

CHAN 512 (1850.2.2 MHz) BODY SAR; Ambient Temp. = 22.2°C / Meas. Tissue Temp. 22.0°C

With no body holster

04-30-2001





SYMBOL FCC ID:H9PPPT2837

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1677; ConvF(4.90,4.90,4.90)

Med. Parameters 1900 MHz Muscle: σ = 1.55 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3; Antenna Position -- In; Crest Factor 8.0

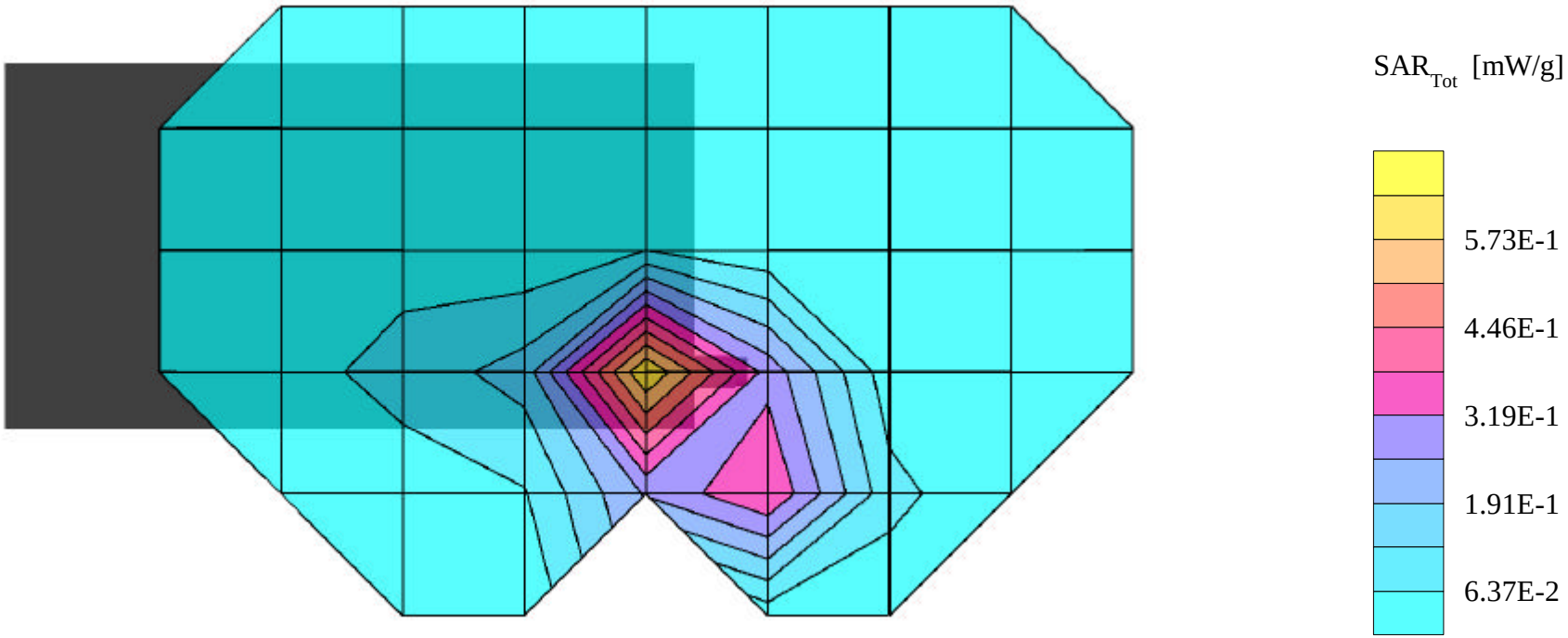
SAR (1g): 0.631 mW/g, SAR (10g): 0.377 mW/g

SYMBOL MODEL:PPT2837 GSM HAND HELD TERMINAL

CHAN 661 (1880 MHz) BODY SAR; Ambient Temp. = 22.2°C / Meas. Tissue Temp. 22.0°C

With no body holster

04-30-2001



SYMBOL FCC ID H9PPPT2837

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1677; ConvF(4.90,4.90,4.90)

Med. Parameters 1900 MHz Muscle: σ = 1.55 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3; Antenna Position -- In; Crest Factor 8.0

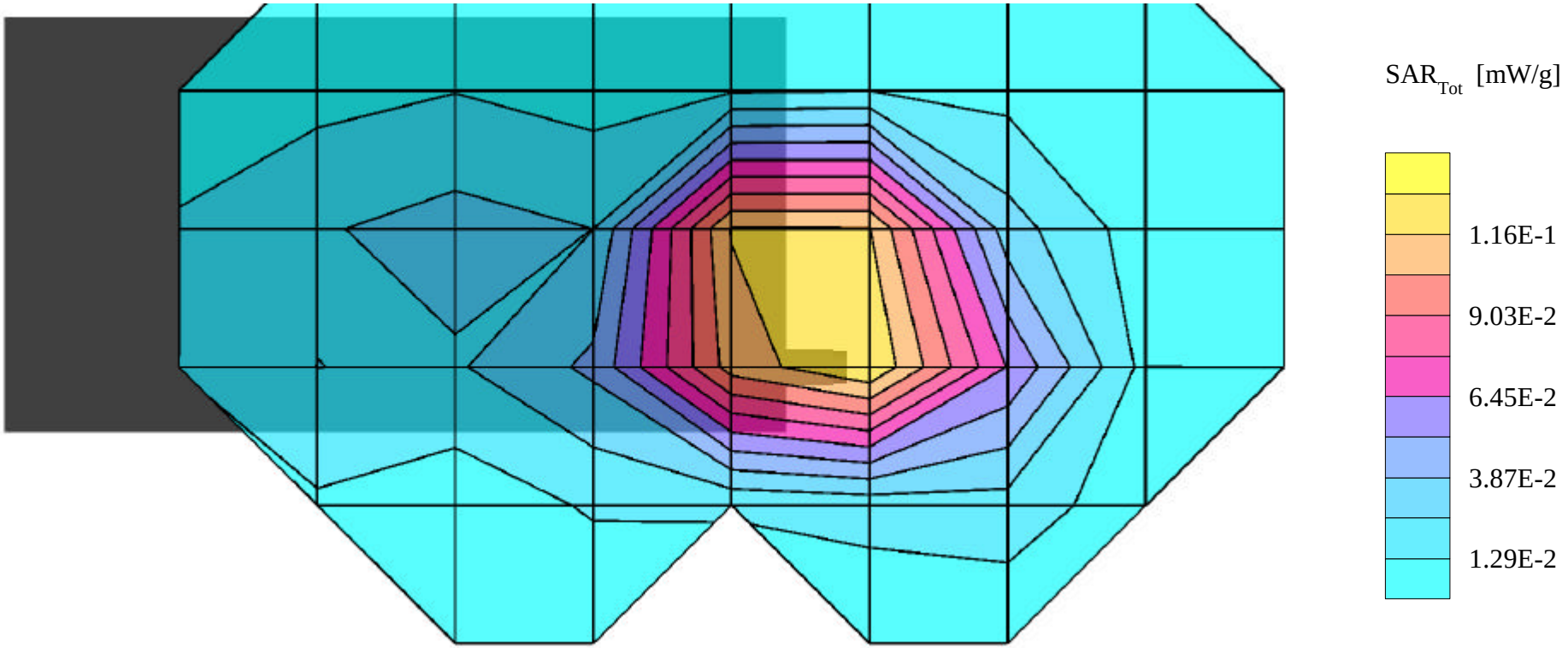
SAR (1g): 0.165 mW/g, SAR (10g): 0.106 mW/g

SYMBOL MODEL:PPT2837 GSM HAND HELD TERMINAL

CHAN 512(1850.2 MHz) 29.58 dBm BODY SAR; Ambient Temp. = 22.2°C / Meas. Tissue Temp. 22.0°C

With holster

04-30-2001



SYMBOL FCC ID:H9PPPT2837

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1677; ConvF(4.90,4.90,4.90)

Med. Parameters 1900 MHz Muscle: σ = 1.55 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3; Antenna Position -- In; Crest Factor 8.0

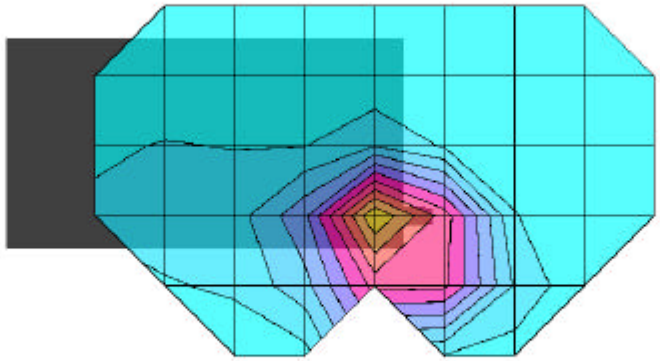
SAR (1g): 0.156 mW/g, SAR (10g): 0.0999 mW/g

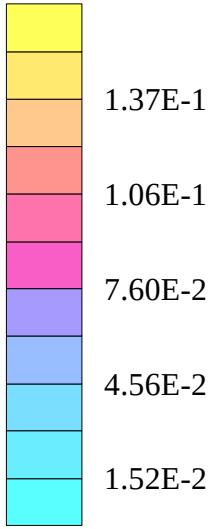
SYMBOL MODEL:PPT2837 GSM HAND HELD TERMINAL

CHAN 661 (1880 MHz) 30.0 dBm BODY SAR; Ambient Temp. = 22.2°C / Meas. Tissue Temp. 22.0°C

With holster

04-30-2001





SYMBOL FCC ID: H9PPPT2837

SAM Phantom; Flat Section; Probe:ET3DV6 - SN1677; ConvF(4.90,4.90,4.90)

Med. Parameters 1900 MHz Muscle: σ = 1.55 mho/m ε_r = 54.9 ρ = 1.00 g/cm^3; Antenna Position -- In; Crest Factor 8.0

SAR (1g): 0.165 mW/g, SAR (10g): 0.106 mW/g

SYMBOL MODEL:PPT-2837 GSM HAND HELD TERMINAL

CHAN 810 (1909.8 MHz) 29.92 dBm BODY SAR; Ambient Temp. = 22.2°C / Meas. Tissue Temp. 22.0°C

With holster

04-30-2001