Certificate Number: 1449-02

MOTOROLA

ACCREDITED

CGISS EME Test Laboratory
8000 West Sunrise Blvd
Fort Lauderdale, FL. 33322

S.A.R. EME Compliance Test Report
Part 1 of 2

Date of Report:	January 29, 2004
Report Revision:	Rev. A
Manufacturer:	Motorola
Product Description:	1:6, 1:3, 81:120, 1:12 TDM; 64 QAM, 16 QAM & QPSK Modulation; 0.6 W Pulse average
FCC ID:	**AZ489FT5827**
Device Model:	H75XAH6RR3AN/NUF3790A

Test Period:	12/29/03-01/13/04
EME Tech:	Ed Church
EME Eng.:	Stephen Whalen (Sr. EME Eng.)
Author:	Michael Sailsman Global EME Regulatory Affairs Liaison

Note: Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 2.0 of this report.

Deanna Zakharia Signature on File for Ken Enger — 1/30/04

Ken Enger
Senior Resource Manager, Laboratory Director, CGISS EME Lab

Date Approved

TABLE OF CONTENTS

REVISION HISTORY

Date	Revision	Comments
1/20/04	O	Release of Pilot results
1/29/04	A	Revised antenna gain information in section 3.0

1.0 Introduction

This report details the utilization, test setup, test equipment, and test results of the Specific Absorption Rate (S.A.R.) measurements performed at the CGISS EME Test Lab for model number H75XAH6RR3AN/NUF3790A, FCC ID: AZ489FT5827.

The applicable exposure environment is General Population/Uncontrolled.

2.0 Reference Standards and Guidelines

This product is designed to comply with the following national and international standards and guidelines.

- United States Federal Communications Commission, Code of Federal Regulations; 47CFR part 2 sub-part J
- IEEE 1528, 2003 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques"
- American National Standards Institute (ANSI) / Institute of Electrical and Electronic Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronic Engineers (IEEE) C95.1-1999 Edition
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6. Limits of Human Exposure to Terminal frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz, 1999
- Australian Communications Authority Radiocommunications (Electromagnetic Radiation - Human Exposure) Standard 2003
- ANATEL, Brazil Regulatory Authority, Resolution 256 (April 11, 2001) "additional requirements for SMR, cellular and PCS product certification."

3.0 Description of Test Sample

FCC ID: AZ489FT5827 is a digital multi-service data capable device that employs time division multiplexing transmission technology with a duty cycle ranging from 16.67% to 33.33% using 16-QAM modulation for voice or circuit data transmission. There is a Split 1:3 mode that operates using a 16.67% transmission duty cycle. Two 7.5ms pulses occur during the six time slots within the 90-msec frame format. This mode is available in both the 806-825MHz and 896-902MHz bands in the telephone interconnect mode only. Packet data transmission is also supported up to a maximum duty cycle of 67.5% using quad QPSK modulation.
This device will be marketed to and used by the general population. This device may be used while held against the head in voice mode, in front of the face in PTT mode, and against the body in voice, PTT and data modes.
FCC ID: AZ489FT5827 is capable of operating in the 806-825 MHz and 896-902MHz bands. Packet data transmission is not available while transmitting in the 896-902 MHz band. The rated power is 0.6 watts pulsed averaged. The maximum output is 0.7 watts pulsed average as defined by the upper limit of the production line final test station.

FCC ID: AZ489FT5827 is offered with the following options and accessories:

Antenna	**Description**
8585522F01	Stubby ¼ wave antenna; 806-941 MHz; -2.8dBd (813MHz), -0.1dBd (896MHz)

Batteries

SNN5705B	750 mAH Lithium Ion
SNN5704A	600 mAH Lithium Ion
NNTN5508A	Slim battery cover (600mAh)
NNTN5507A	Standard size battery cover (750mAh)

Body-worn Accessories

NNTN4756A	Unique Cashew Holster
NNTN4747A	Belt clip

A**pplicable Audio accessories**

SYN8390B	Privacy Earpiece and Mic
NNTN4033A	Privacy earpiece and Mic w/ PTT
NSN6066A	Remote speaker Mic
NNTN4620A	Silver Earbud
SYN8146C	Lightweight over the ear headset w/boom Mic
SYN7875C	Hearing Aid Neck loop
NTN8496A	Lightweight Headset w/mic
NTN8513B	Lightweight Headband
NNTN5004A	Over-the-ear Headset
NNTN5005A	Over-the-ear Headset

Other applicable options:

NKN6560A	RS232 Data Cable
NKN6559A	USB Data Cable

3.1 Test Signal

Test Signal mode:

Test Mode	X	Base Station		Simulator	

Transmission Mode:

CW	
Native Transmission	**X**
TDMA: 1:6, 1:3, 81:120	**X**
Other:	

3.2 Test Output Power

A table of the characteristic power slump versus time is provided in Appendix A for all tested batteries.

4.0 Description of Test Equipment

4.1 Descriptions of S.A.R. Measurement System

The laboratory utilizes a Dosimetric Assessment System (DASY3™) S.A.R. measurement system manufactured by Schmid & Partner Engineering AG (SPEAG™), of Zurich Switzerland. The test system consists of a Stäubli RX90L robot with an ET3DV6 E-Field probe. Please reference the SPEAG user manual and application notes for detailed probe, robot, and S.A.R. computational procedures.
The S.A.R. measurements were conducted with probe model/serial number ET3DV6/SN1384. The system performance check was conducted daily and within 24 hours prior to testing. DASY output files of the system performance test results and the probe/dipole calibration certificates are included in appendices C and D respectively. The table below summarizes the system performance check results normalized to 1W.

Probe Serial #	Tissue Type	Probe Cal Date	Dipole Kit / Serial #	System Perf. 1-g S.A.R. Result when normalized to 1W (mW/g)	Reference 1-g S.A.R @ 1W (mW/g)	Test Date(s)
1384	FCC Body	5/15/03	D900V2/085	11.065 +/- 0.105	11.17 +/- 10%	1/7/04-1/13/04 4 test days
1384	IEEE Head	5/15/03	D900V2/085	12.240 +/- 0.510	12.00 +/- 10%	12/29/03-1/13/04 5 test days

The DASY3™ system is operated per the instructions in the DASY3™ Users Manual. The complete manual is available directly from SPEAG™. All measurement equipment used to assess S.A.R. EME compliance was calibrated according to 17025 A2LA guidelines.

4.2 Description of Phantom

4.2.1 Flat Phantom

A rectangular shaped box made of low loss acrylic material. The phantom is mounted on a wooden supporting structure that has a loss tangent of < 0.05. The structure has a 60.96 cm x 15.24 cm opening at its center to allow positioning the DUT to the phantom's surface. The flat phantom dimensions used for S.A.R. performance assessment are L = 40cm, W = 23cm, H = 20cm, Surface Thickness = 0.2cm.

4.2.2 SAM Phantom

A SAM TP1208 phantom supplied by SPEAG was used to assess S.A.R. performance at the head.

4.3 Simulated Tissue Properties

4.3.1 Type of Simulated Tissue

The simulated tissue used is compliant to that specified in FCC Supplement C (Edition 01-01) to OET Bulletin 65 (Edition 97-01) and IEEE 1528, 2003 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques"

Simulated Tissue	Body Position
FCC Body	Torso
IEEE Head	Head/Face

4.3.2 Simulated Tissue Composition

	Tissue Ingredients (%)					
	900MHz		NA		NA	
	Head	Body	Head	Body	Head	Body
Sugar	56.50	44.90	NA	NA	NA	NA
DGBE (Glycol)	NA	NA	NA	NA	NA	NA
De ionized -Water	40.95	53.06	NA	NA	NA	NA
Salt	1.45	0.94	NA	NA	NA	NA
HEC	1	1	NA	NA	NA	NA
Bact.	0.1	0.1	NA	NA	NA	NA

Characterization of Simulated tissue materials and ambient conditions:

Simulated tissue prepared for S.A.R. measurements is measured daily and within 24 hours prior to actual S.A.R. testing to verify that the tissue is within 5% of target parameters at the center of the transmit band. This measurement is done using the Agilent (HP) probe kit model 85070C and a HP8753D Network Analyzer.

Target tissue parameters

FCC Body				
Frequency (MHz)	**Di-electric Constant Target**	**Di-electric Constant Meas. (Range)**	**Conductivity Target S/m**	**Conductivity Meas. (Range) S/m**
813	55.3	53.5-53.7	0.97	0.93-0.93
900	55.0	52.7-52.8	1.05	1.02-1.03

IEEE Head				
Frequency (MHz)	**Di-electric Constant Target**	**Di-electric Constant Meas. (Range)**	**Conductivity Target S/m**	**Conductivity Meas. (Range) S/m**
813	41.6	42.1-43.1	0.90	0.93-0.93
900	41.5	41.1-42.0	0.97	1.01-1.01

4.4 Test conditions

The EME Laboratory ambient environment is well controlled resulting in very stable simulated tissue temperature and therefore stable dielectric properties. Simulated tissue temperature is measured prior to each scan to insure it is within +/- 2°C of the temperature at which the dielectric properties were determined. The liquid depth in the phantom used for measurements was 15cm +/- 0.5cm. Additional precautions are routinely taken to ensure the stability of the simulated tissue such as covering the phantoms when scans are not actively in process in order to minimize evaporation. The lab environment is continuously monitored. The table below presents the range and average environmental conditions during the S.A.R. tests reported herein:

	Target	**Measured**
Ambient Temperature	20 - 25 ˚C	Range: 20.6-23.4˚C Avg. 22.2˚C
Relative Humidity	30 - 70 %	Range: 40.0-49.3% Avg. 44.8%
Tissue Temperature	NA	Range: 19.9-21.0˚C Avg. 20.52˚C

The EME Lab RF environment uses a Spectrum Analyzer to monitor for extraneous large signal RF contaminants that could possibly affect the test results. If such unwanted signals are discovered the S.A.R scans are repeated. However, the lab environment is sufficiently protected such that no S.A.R. impacting interference has been experienced to date.

5.0 Description of Test Procedure

All options and accessories listed in section 3.0 were considered in order to develop the S.A.R. test plan for this product. S.A.R. measurements were performed using a flat phantom to assess performance at the abdomen and a SAM phantom to assess performance at the side of the head and in front of the face using the applicable transmission modes.

Assessments at the head (806-825MHz)

The DUT was assessed at the TX center frequency of the band, in cheek touch position at the left ear of the SAM phantom, using the offered batteries, in the 1:3 transmission mode.
The DUT was assessed at the TX center frequency of the band, in the 15˚ tilt position, using the worst-case battery and test configuration from above.
The DUT was assessed at the TX band edges, in 1:3 transmission mode, using the test configuration from above that produced the highest S.A.R results.
The same procedure above was used for assessment at the right ear.

The DUT was assessed at the center frequency of the band, in the 1:6 transmission mode, with 2.5cm separation distance from the flat area of the SAM phantom, using the offered batteries.
Band edge assessment was done using the configuration from above that produced the highest S.A.R.

Assessments at the head (896-902MHz)

The DUT was assessed at the TX center frequency of the band, in cheek touch position at the left ear of the SAM phantom, using the offered batteries, in the 1:3 transmission mode.
The DUT was assessed at the TX center frequency of the band, in the 15˚ tilt position, using the worst-case battery and test configuration from above.
The DUT was assessed at the TX band edges, in 1:3 transmission mode, using the test configuration from above that produced the highest S.A.R results.
The same procedure above was used for assessment at the right ear.

The DUT was assessed at the center frequency of the band, in the 1:6 transmission mode, with 2.5cm separation distance from the flat area of the SAM phantom, using the offered batteries.
Band edge assessment was done using the configuration from above that produced the highest S.A.R.

Shortened scan assessment at the head

A “shortened” scan assessment was done using the test configuration from above that produced the highest S.A.R. results overall at the head.

Assessments at the Body (806-825MHz)

The DUT was assessed at the TX center frequency of the band, against the flat phantom, in the 81:120 transmission mode, with each of the offered batteries, using the offered body worn holster and with data cable model NKN6560A attached.
The DUT was assessed at the TX center frequency of the band using the worst case battery from above and the offered belt clip, with and without the offered data cable models attached.
The DUT was assessed in the 1:3 transmission mode, using the worst case test configuration from above, with each of the offered audio accessories attached.
The DUT was assessed at the edges of the band, using the over all worst case test configuration from above.

Assessments at the Body (896-902MHz)

The DUT was assessed at the low, mid, and high frequencies of the band, against the flat phantom, in the 1:3 transmission mode, using the test configuration from the audio accessories assessment in the 806-825MHz band that produced the highest S.A.R. results.
Note that data mode is not a user option in the 896-902MHz band therefore this test condition was not assessed.

Assessments at the Abdomen 2.5cm separation

The DUT was also assessed with the front, and back of the device separated 2.5cm from the flat phantom using the worst-case battery and frequency from the 802-825MHz body assessment above.

Shortened scan assessment at the body
A "shortened" scan was performed using the test configuration that produced the highest S.A.R. results overall at the body.

5.1 Device Test Positions

Reference figure 1 for the device orientation and position which exhibited the highest S.A.R. performance.

5.1.1 Body

The DUT was positioned such that it was centered against the flat phantom with the carry case and applicable accessory attachments. The DUT was positioned with its' back and front housing separated 2.5cm from the flat phantom.

5.1.2 Head

The DUT was placed in the cheek touch and 15° tilt positions at the left and right ears of the SAM phantom

5.1.3 Face

The DUT was placed with 2.5cm separation from the flat area of the SAM phantom.

5.2 Test Position Photographs

Figure 1: Highest S.A.R. Test Position (@ Left Ear)
DUT in cheek touch position.

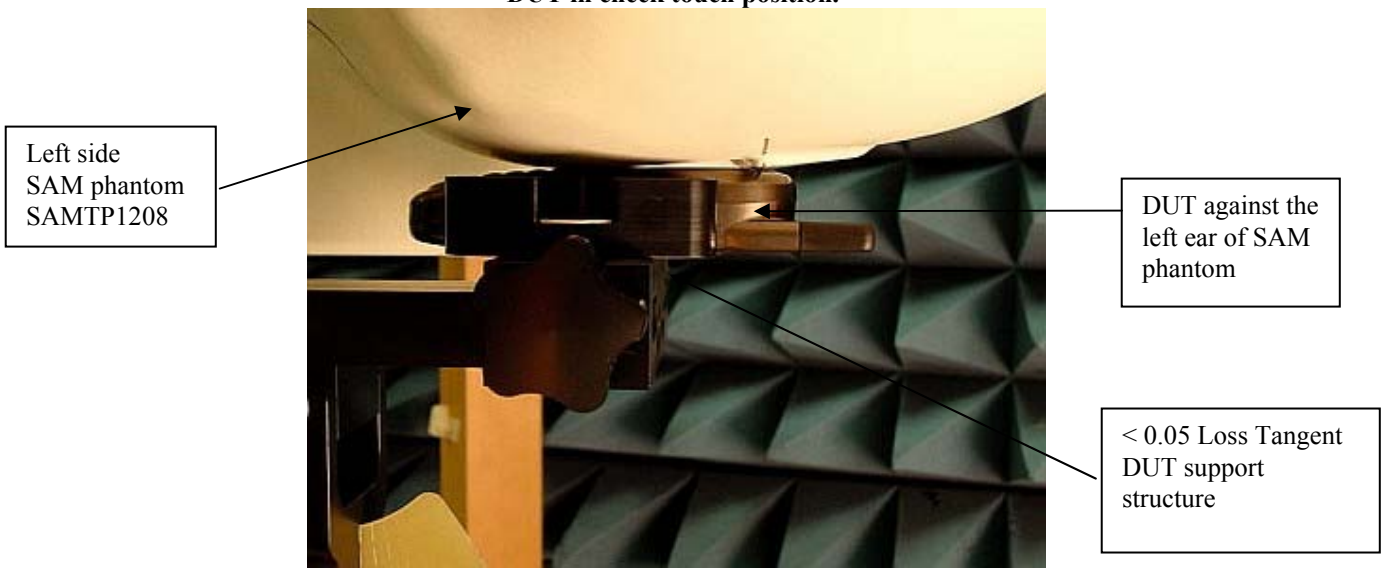


Figure 2. Assessment @ the Left ear
DUT in 15° tilt position

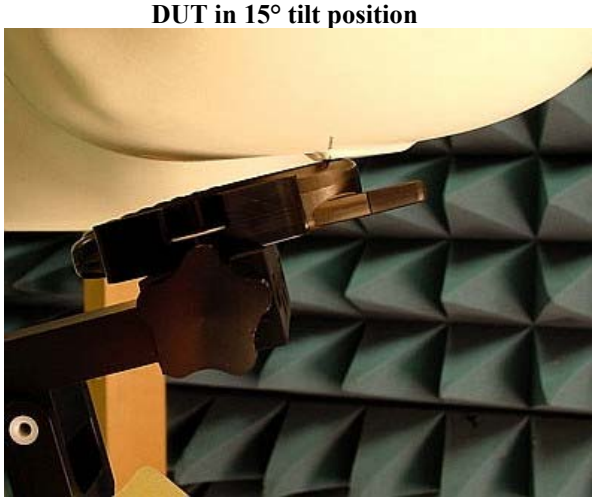


Figure 3. Assessment @ the Right ear
DUT in Cheek touch position;

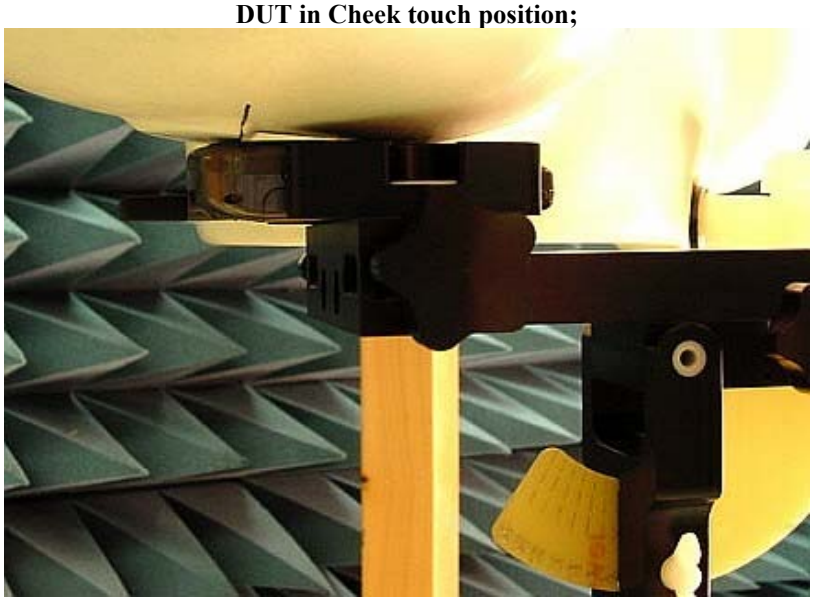


Figure 4. Assessment @ the Right ear
DUT in 15° tilt position;

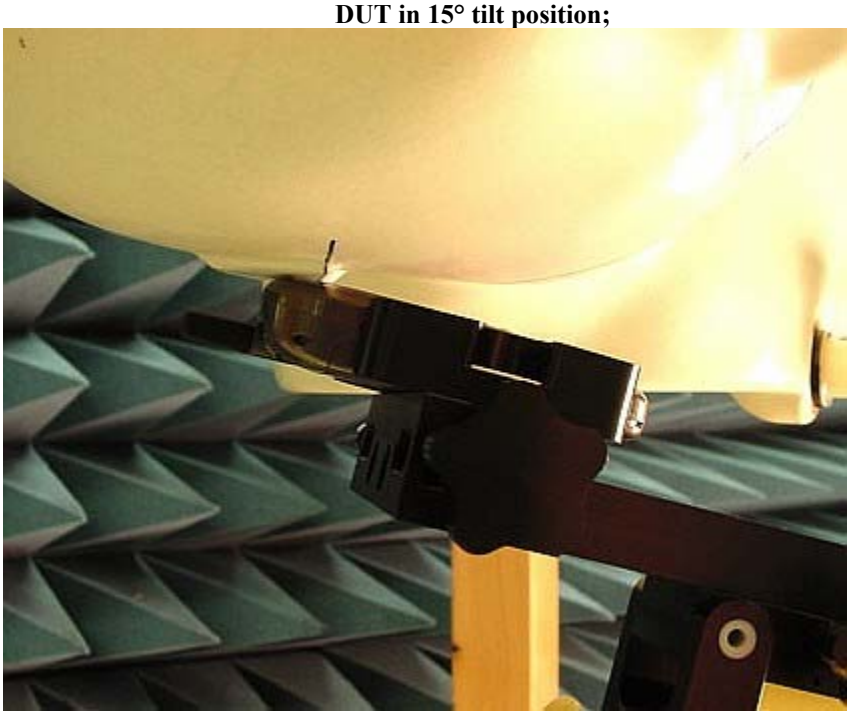


Figure 5. Assessment @ the Face
DUT front 2.5cm separation distance from flat phantom.

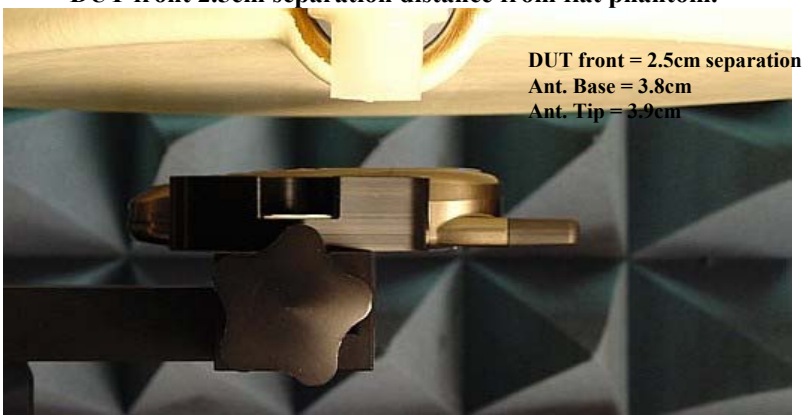


Figure 6. Assessment @ Body
DUT w/ holster model NNTN4756A against the flat phantom
and attached data cable model NKN6560A.
(Same position used to assess data cable model NKN6559A as well as w/o a data cable.)

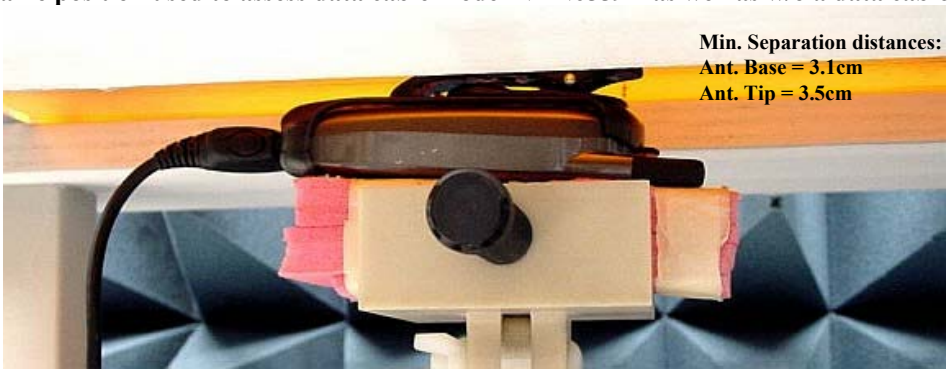


Figure 7. Assessment @ the Body
DUT w/ belt clip model NNTN4747A and attached data cable model NKN6560A.
(Same position used w/ data cable model NKN6559A attached,
w/o any attachments, as well as w/ each of the offered audio accessories)

Figure 8. Assessment @ the Body
DUT front w/ 2.5cm separation.

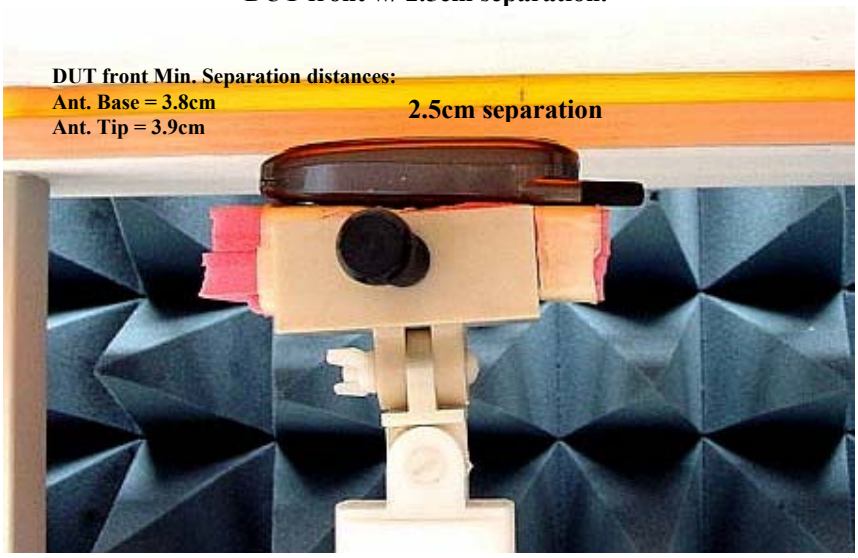


Figure 9. Assessment @ the Body
DUT Back w/ 2.5cm separation.

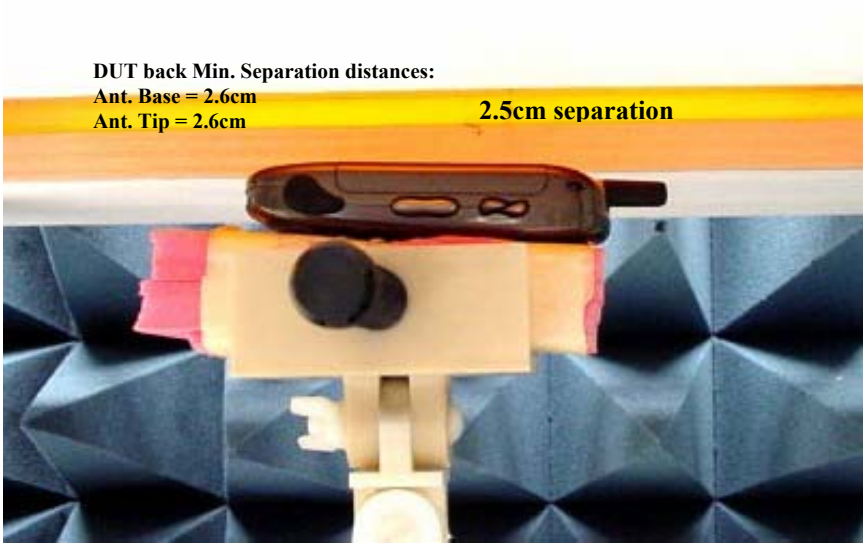


Figure 10: Robot Test System (Flat Phantom)

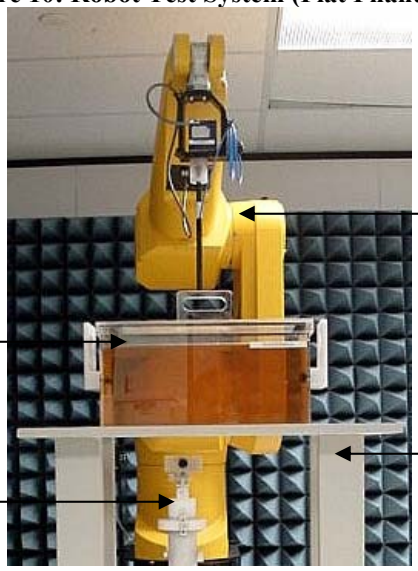
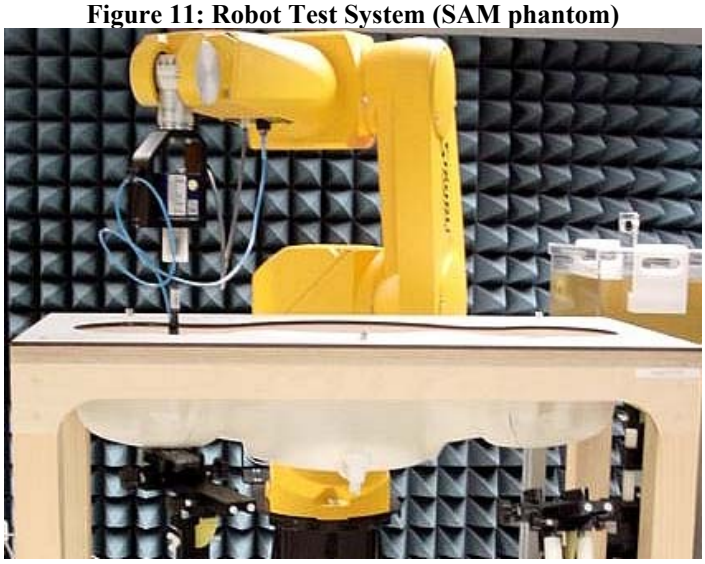


Figure 11: Robot Test System (SAM phantom)



5.3 Probe Scan Procedures

The E-field probe is first scanned in a coarse grid over a large area inside the phantom in order to locate the interpolated maximum S.A.R. distribution. After the coarse scan measurement, the probe is automatically moved to a position at the interpolated maximum. The subsequent scan can directly use this position as reference for the cube evaluations.

6.0 Measurement Uncertainty

Table 1: Uncertainty Budget for Device Under Test: 75 – 3000 MHz

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	IEEE 1528 section	Tol. (± %)	Prob Dist	Div.	c_i (1 g)	c_i (10 g)	1 g u_i (±%)	10 g u_i (±%)	v_i
Measurement System									
Probe Calibration	E.2.1	4.8	N	1.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions - Noise	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	0.0	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mech. Tolerance	E.6.2	1.0	R	1.73	1	1	0.6	0.6	∞
Probe Positioning w.r.t Phantom	E.6.3	4.0	R	1.73	1	1	2.3	2.3	∞
Max. SAR Evaluation (ext., int., avg.)	E.5	3.4	R	1.73	1	1	2.0	2.0	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.4	N	1.00	1	1	3.4	3.4	29
Device Holder Uncertainty	E.4.1	3.8	N	1.00	1	1	3.8	3.8	8
SAR drift	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3	6.5	N	1.00	0.64	0.43	4.2	2.8	∞
Liquid Permittivity (target)	E.3.2	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.3	4.0	N	1.00	0.6	0.49	2.4	2.0	∞
Combined Standard Uncertainty			RSS				12	11	601
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				23	22	

Table 2: Uncertainty Budget for System Check: 75 – 3000 MHz

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	IEEE 1528 section	**Tol. (± %)**	**Prob. Dist.**	**Div.**	c_i (1 g)	c_i (10 g)	**1 g** u_i (±%)	**10 g** u_i (±%)	v_i
Measurement System									
Probe Calibration	E.2.1	4.8	N	1.00	1	1	4.8	4.8	∞
Axial Isotropy	E.2.2	4.7	R	1.73	1	1	2.7	2.7	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0	0	0.0	0.0	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	1.0	N	1.00	1	1	1.0	1.0	∞
Response Time	E.2.7	0.8	R	1.73	1	1	0.5	0.5	∞
Integration Time	E.2.8	1.3	R	1.73	1	1	0.8	0.8	∞
RF Ambient Conditions - Noise	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	0.0	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning w.r.t. Phantom	E.6.3	1.4	R	1.73	1	1	0.8	0.8	∞
Max. SAR Evaluation (ext., int., avg.)	E.5	3.4	R	1.73	1	1	2.0	2.0	∞
Dipole									
Dipole Axis to Liquid Distance	8, E.4.2	2.0	R	1.73	1	1	1.2	1.2	∞
Input Power and SAR Drift Measurement	8, 6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3	6.0	R	1.73	0.64	0.43	2.2	1.5	∞
Liquid Permittivity (target)	E.3.2	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.3	6.0	R	1.73	0.6	0.49	2.1	1.7	∞
Combined Standard Uncertainty			RSS				9	8	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				17	17	

Notes for Tables 1 and 2
a) Column headings *a-k* are given for reference.
b) Tol. - tolerance in influence quantity.
c) Prob. Dist. – Probability distribution
d) N, R - normal, rectangular probability distributions
e) Div. - divisor used to translate tolerance into normally distributed standard uncertainty
f) *ci* - sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.
g) *ui* – SAR uncertainty
h) *vi* - degrees of freedom for standard uncertainty and effective degrees of freedom for the expanded uncertainty.

7.0 S.A.R. Test Results

All S.A.R. results obtained by the tests described in Section 5.0 are listed in section 7.1 below. The bolded result indicates the highest observed S.A.R. performance. DASY3™ S.A.R. measurement scans are provided in APPENDIX B for the highest observed S.A.R.
Appendix A presents shortened S.A.R. cube scans to assess the validity of the calculated results presented herein.
Note: The results of the shortened cube scans presented in Appendix A demonstrate that the scaling methodology used to determine the calculated S.A.R. results presented herein are valid.

7.1 S.A.R. results

DUT assessment at the head; Cheek Touch, Tilt, and and edges; 1:3 mode; 806-825MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Left Ear												
EC-Lear-R1-031229-03/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Cheek Touch	None	None	0.695	0.210	1.370	0.952	1.38	0.96
EC-Lear-R1-031229-08/364VDW1Q4Q	Fixed	813.5125	SNN5705B	Cheek Touch	None	None	0.696	0.170	1.300	0.899	1.31	0.90
EC-Lear-R1-031229-09/364VDW1Q4Q	Fixed	813.5125	SNN5704A	15º tilt	None	None	0.710	0.060	1.070	0.734	1.07	0.73
EC-Lear-R1-031229-10/364VDW1Q4Q	Fixed	806.0125	SNN5704A	Cheek Touch	None	None	0.705	0.070	1.210	0.849	1.21	0.85
EC-Lear-R1-031229-11/364VDW1Q4Q	Fixed	824.9875	SNN5704A	Cheek Touch	None	None	0.708	0.110	1.390	0.969	1.39	0.97
EC-Lear-R1-040113-11/364VDW1Q9F	Fixed	824.9875	SNN5704A	Cheek Touch	None	None	0.707	-0.260	1.340	0.950	**1.42**	1.01
Right Ear												
EC-Rear-R1-031229-12/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Cheek Touch	None	None	0.705	0.020	1.210	0.854	1.21	0.85
EC-Rear-R1-031230-02/364VDW1Q4Q	Fixed	813.5125	SNN5705B	Cheek Touch	None	None	0.696	0.080	1.210	0.862	1.22	0.87
EC-Rear-R1-031230-03/364VDW1Q4Q	Fixed	813.5125	SNN5705B	15º tilt	None	None	0.702	0.160	0.963	0.669	0.96	0.67
EC-Rear-R1-031230-04/364VDW1Q4Q	Fixed	806.0125	SNN5705B	Cheek Touch	None	None	0.706	0.090	1.160	0.812	1.16	0.81
EC-Rear-R1-031230-05/364VDW1Q4Q	Fixed	824.9875	SNN5705B	Cheek Touch	None	None	0.703	0.020	1.320	0.932	1.32	0.93

DUT assessment at the Face; 2.5cm separation; 1:6 mode; 806-825MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
EC-Face-R1-031230-06/364VDW1Q4Q	Fixed	813.5125	SNN5704A	DUT front 2.5cm	None	None	0.695	0.030	0.184	0.132	0.09	0.07
EC-Face-R1-031230-07/364VDW1Q4Q	Fixed	813.5125	SNN5705B	DUT front 2.5cm	None	None	0.698	0.030	0.195	0.140	0.10	0.07
EC-Face-R1-031230-08/364VDW1Q4Q	Fixed	806.0125	SNN5705B	DUT front 2.5cm	None	None	0.703	0.040	0.198	0.142	**0.10**	0.07
EC-Face-R1-031230-09/364VDW1Q4Q	Fixed	824.9875	SNN5705B	DUT front 2.5cm	None	None	0.694	0.020	0.195	0.138	0.10	0.07

DUT assessment at the head; Cheek Touch, Tilt, and Band edges; 1:3 mode; 896-902 MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
Left Ear												
EC-Lear-R1-031230-10/364VDW1Q4Q	Fixed	899.66875	SNN5704A	Cheek Touch	None	None	0.693	-0.450	1.050	0.715	1.18	0.80
EC-Lear-R1-031230-11/364VDW1Q4Q	Fixed	899.66875	SNN5705B	Cheek Touch	None	None	0.691	-0.390	1.030	0.706	1.14	0.78
EC-Lear-R1-031230-12/364VDW1Q4Q	Fixed	899.66875	SNN5704A	15º tilt	None	None	0.694	-0.500	0.730	0.488	0.83	0.55
EC-Lear-R1-031230-13/364VDW1Q4Q	Fixed	896.01875	SNN5704A	Cheek Touch	None	None	0.697	-0.510	1.090	0.746	**1.23**	0.84
EC-Lear-R1-031230-14/364VDW1Q4Q	Fixed	901.98125	SNN5704A	Cheek Touch	None	None	0.694	-0.450	1.010	0.691	1.13	0.77
Right Ear												
SW-Rear-R1-040102-02/364VDW1Q4Q	Fixed	899.66875	SNN5704A	Cheek Touch	None	None	0.695	-0.430	0.940	0.653	1.05	0.73
SW-Rear-R1-040102-03/364VDW1Q4Q	Fixed	899.66875	SNN5705B	Cheek Touch	None	None	0.692	-0.290	0.953	0.657	1.03	0.71
SW-Rear-R1-040102-04/364VDW1Q4Q	Fixed	899.66875	SNN5704A	15º tilt	None	None	0.699	-0.330	0.673	0.442	0.73	0.48
SW-Rear-R1-040102-05/364VDW1Q4Q	Fixed	896.01875	SNN5704A	Cheek Touch	None	None	0.695	-0.470	1.010	0.701	1.13	0.79
SW-Rear-R1-040102-06/364VDW1Q4Q	Fixed	901.98125	SNN5704A	Cheek Touch	None	None	0.702	-0.460	0.966	0.660	1.07	0.73

DUT Assessment at the Face; 2.5cm separation; 1:6mode; 896-902MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
EC-Face-R1-040107-02/364VDW1Q4Q	Fixed	899.66875	SNN5704A	DUT Front 2.5cm	None	None	0.687	-0.160	0.131	0.092	0.07	0.05
EC-Face-R1-040107-03/364VDW1Q4Q	Fixed	899.66875	SNN5705B	DUT Front 2.5cm	None	None	0.688	-0.110	0.152	0.106	0.08	0.06
EC-Face-R1-040107-04/364VDW1Q4Q	Fixed	896.01875	SNN5705B	DUT Front 2.5cm	None	None	0.697	-0.160	0.154	0.108	**0.08**	0.06
EC-Face-R1-040107-05/364VDW1Q4Q	Fixed	901.98125	SNN5705B	DUT Front 2.5cm	None	None	0.696	-0.200	0.145	0.101	0.08	0.05

DUT Assessment at the body; Battery, body worn, data cables; 81:120 mode; 806-825MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
EC-Ab-R1-040107-07/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4756A holster	NKN6560A data cable	0.690	-0.330	0.696	0.501	0.76	0.55
EC-Ab-R1-040107-08/364VDW1Q4Q	Fixed	813.5125	SNN5705B	Against phantom	NNTN4756A holster	NKN6560A data cable	0.720	-0.170	0.714	0.513	0.74	0.53
EC-Ab-R1-040107-09/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A belt clip	NKN6560A data cable	0.698	-0.290	0.780	0.551	0.84	0.59
SW-Ab-R1-040108-02/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A belt clip	NKN6559A data cable	0.696	-0.320	0.585	0.422	0.63	0.46
EC-Ab-R1-040108-04/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A belt clip	None	0.691	-0.070	1.230	0.878	**1.27**	0.90

DUT Assessment at the body; offered audio accessories, Band edges; 1:3 and 81:120 modes; 806-825MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
SW-Ab-R1-040109-02/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NNTN5004A	0.710	0.020	0.421	0.304	0.42	0.30
SW-Ab-R1-040109-03/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NNTN5005A	0.704	0.230	0.323	0.232	0.32	0.23
EC-Ab-R1-040109-05/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NNTN4620A	0.702	0.180	0.346	0.243	0.35	0.24
EC-Ab-R1-040109-06/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	SYN8390B	0.712	-0.210	0.370	0.261	0.39	0.27

DUT Assessment at the body; offered audio accessories, Band edges; 1:3 and 81:120 modes; 806-825MHz band (Continued)												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
EC-Ab-R1-040109-07/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	SYN8146C	0.714	0.230	0.434	0.306	0.43	0.31
EC-Ab-R1-040109-08/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	SYN7875C	0.720	0.030	0.372	0.262	0.37	0.26
EC-Ab-R1-040109-09/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NTN8496A	0.716	0.010	0.493	0.350	0.49	0.35
EC-Ab-R1-040109-10/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NTN8513B	0.718	0.060	0.346	0.242	0.35	0.24
EC-Ab-R1-040109-11/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NNTN4033A	0.711	-0.050	0.287	0.200	0.29	0.20
EC-Ab-R1-040109-12/364VDW1Q4Q	Fixed	813.5125	SNN5704A	Against phantom	NNTN4747A	NSN6066A	0.717	-0.630	0.335	0.236	0.19	0.27
EC-Ab-R1-040109-13/364VDW1Q4Q	Fixed	806.0125	SNN5704A	Against phantom	NNTN4747A	None	0.706	-0.220	1.190	0.839	1.25	0.88
EC-Ab-R1-040109-14/364VDW1Q4Q	Fixed	824.9875	SNN5704A	Against phantom	NNTN4747A	None	0.715	-0.050	1.360	0.968	**1.38**	0.98

DUT assessment at the body; Across the band, w/ worst case battery from 806-825MHz assessment 1:3 mode; 896-902MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
EC-Ab-R1-040109-15/364VDW1Q4Q	Fixed	896.01875	SNN5704A	Against phantom	NNTN4747A	NTN8496A	0.700	-0.600	0.360	0.251	0.41	0.29
EC-Ab-R1-040109-16/364VDW1Q4Q	Fixed	899.66875	SNN5704A	Against phantom	NNTN4747A	NTN8496A	0.705	-0.490	0.325	0.221	0.36	0.25
EC-Ab-R1-040109-17/364VDW1Q4Q	Fixed	901.98125	SNN5704A	Against phantom	NNTN4747A	NTN8496A	0.710	-0.440	0.382	0.265	**0.42**	0.29

DUT assessment at the body; 2.5cm separation; w/ overall worst case test configuration at the body; 81:120mode; 806-825 MHz band												
Run Number/ SN	**Antenna Position**	**Freq. (MHz)**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (W)**	**S.A.R. Drift (dB)**	**Meas. 1g-S.A.R. (mW/g)**	**Meas. 10g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**	**Max Calc. 10g-S.A.R. (mW/g)**
EC-Ab-R1-040113-03/364VDW1Q4Q	Fixed	824.9875	SNN5704A	DUT Back 2.5cm	None	None	0.704	-0.160	1.090	0.786	**1.13**	0.82
EC-Ab-R1-040113-04/364VDW1Q4Q	Fixed	824.9875	SNN5704A	DUT Front 2.5cm	None	None	0.708	-0.070	0.784	0.572	0.80	0.58

7.2 Peak S.A.R. location

Refer to APPENDIX B for detailed S.A.R. scan distributions.

7.3 Highest S.A.R. results calculation methodology

The calculated maximum 1-gram and 10-gram averaged S.A.R. values are determined by scaling the measured S.A.R. to account for power leveling variations and power slump. For this device the Maximum Calculated 1-gram and 10-gram averaged peak S.A.R. is calculated using the following formula:

Max. Calc. 1-g Avg. SAR = ((S.A.R. meas. / (10^(Pdrift/10))*(Pmax/Pint))* DC%
P_{max} = Maximum Power (W)
P_{int} = Initial Power (W)
Pdrift = DASY drift results (dB)
$SAR_{meas.}$ = Measured 1 gram averaged peak S.A.R. (mW/g)
DC % = Transmission mode duty cycle in % where applicable
Note that the use of the above formula should consider the relationship between the initial power, max power, and drift. Also, a 50% duty cycle is applied for PTT operation.

8.0 Conclusion

The highest Operational Maximum Calculated 1-gram and 10-gram average S.A.R. values found for FCC ID: AZ489FT5827 model H75XAH6RR3AN/NUF3790A.

At the Body: **1-g Avg. = 1.38 mW/g; 10-g Avg. = 0.98 mW/g**
At the Face: **1-g Avg. = 0.10 mW/g; 10-g Avg. = 0.07 mW/g**
At the Head: **1-g Avg. = 1.42 mW/g; 10-g Avg. = 1.01 mW/g**

These test results clearly demonstrate compliance with FCC General Population/Uncontrolled RF Exposure limits of **1.6 mW/g** per the requirements of 47 CFR 2.1093(d)