


MOTOROLA

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: August 8, 2003
Report Revision: Rev. 0
Manufacturer: Motorola
Product Description: 1:6, 2:6, 81:120, 1:12 TDMA; 64 QAM, 16 QAM & QPSK Modulation; 0.6 W Pulse average
FCC ID: **AZ489FT5825**
Device Model: H63XAH6RR3AN

Test Period: 6/26/03-7/18/03
EME Tech: Clint Miller/Ed Church
EME Eng.: Deanna Zakharia (Elect. Principle Staff Eng.)
Authors: Michael Sailsman
 Global EME Regulatory Affairs Liaison
 and
 Deanna Zakharia (Elect. Principle Staff Eng.)

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.

Signature on file

8/8/2003

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

 Date Approved

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REVISION HISTORY

Date	Revision	Comments
8/8/03	O	Prototype results

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 H63XAH6RR3AN, FCC ID: AZ489FT5825.

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
- 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 Terminal communications (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: AZ489FT5825 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 3:1 mode that operates using a 16.67% transmission duty cycle. Two 7.5ms pulses occurs during the six time slots within the 90-msec frame format. This mode is available in both the 806-825 MHz and 896-902 MHz 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 both voice and data modes.

FCC ID: AZ489FT5825 is capable of operating in the 806-825 MHz and 896-902 MHz 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: AZ489FT5825 is offered with the following options and accessories:

Antenna

8585924F01 Retractable whip ¼ wave antenna; 806-941 MHz;
 -.90dBd @ 813MHz (extended) to 0.10dBd @ 896MHz (retracted)

Batteries

SNN5705B 750 mAh Lithium Ion
 SNN5704A 600 mAh Lithium Ion

Body-worn Accessories

NNTN4756A Holster

Applicable attachments

SYN0547A Digital Camera
 NTN8496A Light-weight headset w/ mic
 SYN7875C Hearing Aid Neck loop (incl. SYN8608C, SNN5536A battery)
 SYN8390B Privacy Earpiece and Microphone
 NNTN4033A Privacy earpiece and Mic w/ PTT
 NSN6066A Remote speaker w/PTT
 NNTN4877A Mini Keyboard
 SYN8146C Lightweight Over the Ear headset w/ boom microphone
 NTN8513B Lightweight headband
 NNTN4620A Silver Ear Bud
 NKN6544B RS232 Data cable
 NKN6540A Dual Port Adaptor cable
 NNTN4007A USB Data cable
 NNTN4049A USB Data cable
 NNTN4907A Battery Door Standard

3.1 Test Signal

Test Signal mode:

Test Mode 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/SN1547. 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. Result when normalized to 1W (mW/g)	Reference S.A.R @ 1W (mW/g)	Test Date(s)
1547	FCC Body	9/28/02	D900V2/084	11.90 +/- 0.2	11.99 +/- 10%	7/9/03-7/18/03 5 test days
1547	IEEE/ CENELEC Head	9/28/02	D900V2/084	11.84 +/- 0.28	11.66 +/- 10%	6/26/03-7/18/03 15 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 EME S.A.R. 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).

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

4.3.2 Simulated Tissue Composition

	Tissue Ingredients (%)					
	900 MHz		NA		NA	
	Head	Body	Head	Body	Head	Body
Sugar	57	44.9	NA	NA	NA	NA
DGBE (Glycol)	NA	NA	NA	NA	NA	NA
De ionized -Water	40.45	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	54.7-56.3	0.97	0.97-.99
899	55.0	53.9-53.9	1.05	1.07-1.07
900	55.0	53.8-55.5	1.05	1.06-1.09

IEEE/CENELEC Head				
Frequency (MHz)	Di-electric Constant Target	Di-electric Constant Meas. (Range)	Conductivity Target S/m	Conductivity Meas. (Range) S/m
813	41.6	41.9-42.9	0.90	.92-.93
899	41.5	40.2-41.7	0.97	.99-1.01
900	41.5	40.2-41.7	0.97	.99-1.01

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: 20.1-24.8 °C Avg. 22.8°C
Relative Humidity	30 - 70 %	Range: 40.4-66.5% Avg. 51.9%
Tissue Temperature	NA	Range: 20.0-22.0°C Avg. 21.16°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 containing FCC body simulated tissue to assess performance at the abdomen and a SAM phantom containing IEEE head simulated tissue to assess performance at the side of the head and in front of the face using the applicable transmission modes.

Assessment at the left ear (800 MHz band)

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in the 1:3 transmission mode, in the cheek touch position, using the offered batteries.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, in the 15° tilt position, using the battery above that produced the highest S.A.R. result.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, using the worst case test configuration from above along with the offered camera option attached.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, using the worst case test configuration from above along with the offered mini keyboard option attached.

The DUT was assessed at the band edges of the 806-825 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in the 1:3 transmission mode, using the configuration from the left ear assessment above that produced the highest S.A.R. results.

Assessment at the right ear (800 MHz band)

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, in the 15° tilt position, using the battery that produced the highest S.A.R. results at the left ear.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the right ear of the SAM phantom, in the 1:3 transmission mode, in the cheek touch position, using the battery that produced the highest S.A.R. results at the left ear.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, with the offered camera option attached.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, with the offered mini keyboard option attached.

The DUT was assessed at the transmission band edges of the 806-825 MHz band, with antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, using the test configuration that produced the highest S.A.R. results at the right ear above.

Assessment at the face (800 MHz band)

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, with the tip of the opened flip and the bottom edge of the device towards the phantom and separated 2.5cm from the phantom, using the flat area of the SAM phantom, in 1:6 transmission mode, using the battery that produced the highest S.A.R. results from the head assessments above.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, with the antenna in and out, with the closed flip of the device towards the phantom and separated 2.5cm from the phantom, using the flat area of the SAM phantom, in 1:6 transmission mode, using the battery that produced the highest S.A.R. results from the head assessments above.

The DUT was assessed at the transmission band edges of the 806-825 MHz band, with antenna in and out, in 1:6 transmission mode, using the test configuration that produced the highest S.A.R. results above.

Assessment at the left ear (900 MHz band)

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in the 1:3 transmission mode, in the cheek touch position, using the offered batteries.

The DUT was assessed at TX center frequency of the 896-902 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, in the 15° tilt position, using the battery above that produced the highest S.A.R. result.

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, with the offered camera option attached.

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, with the offered mini keyboard option attached.

The DUT was assessed at the band edges of the 896-902 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in the 1:3 transmission mode, in the cheek touch position, using the configuration from the left ear assessment above that produced the highest S.A.R. results.

Assessment at the right ear (900 MHz band)

The DUT was assessed at TX center frequency of the 896-902 MHz band, with the antenna in and out, at the left ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, using the battery that produced the highest S.A.R. results at the left ear.

The DUT was assessed at TX center frequency of the 896-902MHz band, with the antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, in the 15° tilt positions, using the battery that produced the highest S.A.R. results at the left ear.

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, with the offered camera option attached.

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, in the cheek touch position, with the offered mini keyboard option attached.

The DUT was assessed at the transmission band edges of the 896-902 MHz band, with antenna in and out, at the right ear of the SAM phantom, in 1:3 transmission mode, using the test configuration that produced the highest S.A.R. results at the right ear above.

Assessment at the face (900 MHz band)

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the tip of the opened flip and the bottom edge of the device towards the phantom and separated 2.5cm from the phantom, using the flat area of the SAM phantom, with the antenna in and out, in 1:6 transmission mode, using the battery that produced the highest S.A.R. results from the head assessments above.

The DUT was assessed at the TX center frequency of the 896-902 MHz band, with the antenna in and out, with the closed flip of the device towards the phantom, and separated 2.5cm, using the flat area of the SAM phantom, in 1:6 transmission mode, using the battery that produced the highest S.A.R. results from the head assessments above.

The DUT was assessed at the transmission band edges of the 896-902 MHz band, with antenna in and out, in 1:6 transmission mode, using the test configuration that produced the highest S.A.R. results above.

Assessment at the abdomen (800 MHz band)

The DUT was assessed at the TX center frequency of the 806-825 MHz band, against the flat phantom, in the 81:120 transmission mode, with antenna in and out, along with each offered batteries and holster.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, against the flat phantom, in the 81:120 transmission mode, with antenna in and out, using the worst-case test configuration from above along with the applicable data cables.

The DUT was assessed at the TX center frequency of the 806-825 MHz band, against the flat phantom, in the 81:120 transmission mode, with antenna in and out, using the worst-case test configuration from above along with each the offered camera option.

Assessment at the abdomen of audio accessories (800 MHz band)

The DUT was assessed at the TX center frequency of the 806-825 MHz band, against the flat phantom, with antenna in and out, in the 1:3 transmission mode, using the battery from above that produced the highest S.A.R., along with each applicable audio accessories.

The DUT was assessed at the TX band edges of the 806-825 MHz band, against the flat phantom, in the 81:120 transmission mode, using the configuration from the 800 MHz abdomen assessments above that produced the highest S.A.R.

The DUT was assessed in the 81:120 transmission mode, with its front, back, and antenna separated 2.5 cm from the flat phantom, using the configuration from the 800 MHz abdomen assessment above that produced the highest S.A.R. results.

Assessment at the abdomen of audio accessories (900 MHz band)

The DUT was assessed at the low, mid, and high frequencies of the 896-902MHz band, against the flat phantom, in the 1:3 transmission mode (81:120 Packet Data mode not functional in the 896-902Mhz band), with antenna in and out, using the audio accessory configuration from the 806-825MHz assessment above that produced the highest S.A.R. results.

Shortened scan assessment

A “shortened” scan was performed using the configuration from the SAM phantom assessments above that produced the highest S.A.R. results.

A “shortened” scan was performed using the configuration from the flat phantom assessments above that produced the highest S.A.R. results..

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 Abdomen

The DUT was positioned such that it was centered against the flat phantom with the carry case and applicable optional attachments. The DUT was positioned under the flat phantom with front side, backside, and antenna of the DUT positioned with a 2.5cm separation distance 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 with and without applicable optional attachments.

5.1.3 Face

The DUT was placed with DUT front 2.5cm separation from the flat area of the SAM phantom with the flip open and closed as well as with and without applicable optional attachments.

5.2 Test Position Photographs

**Figure 1: Highest S.A.R. Test Position @ the right ear
(DUT in Cheek touch position)**



SAM Phantom
(SAMTP1208)
Right Ear

< 0.05 Loss
Tangent DUT
support structure

**Figure 2. Assessment @ the Left ear; Cheek touch position; with antenna retracted.
Same position used for antenna extended.**



Figure 3. Assessment @ the Left ear; 15° tilt position; with antenna retracted. Same position used for antenna extended.



Figure 4. Assessment @ the Right ear; 15° tilt position; with antenna retracted. Same position used for antenna extended.



Figure 5. Assessment @ the Left ear; cheek touch position; w/ camera attached and antenna retracted. Same position used for antenna extended.

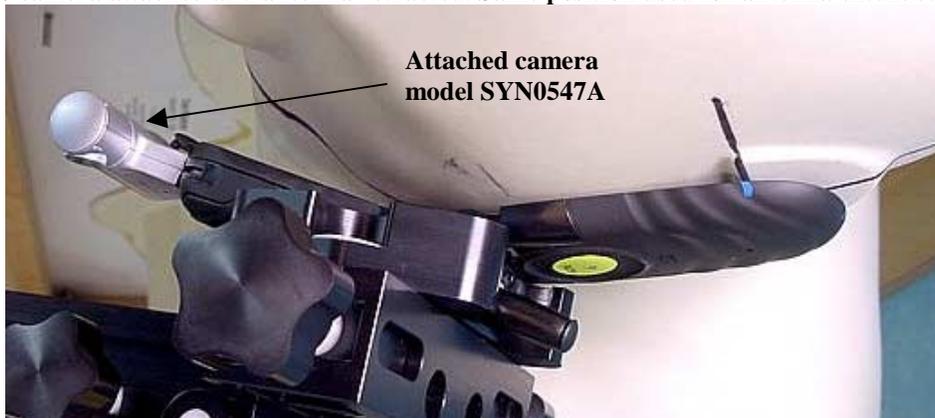


Figure 6. Assessment @ the Left ear; cheek touch position; w/ keyboard attached and antenna retracted. Same position used for antenna extended.



Figure 7. Assessment @ the Right ear; cheek touch position; w/ camera attached and antenna retracted. Same position used for antenna extended.

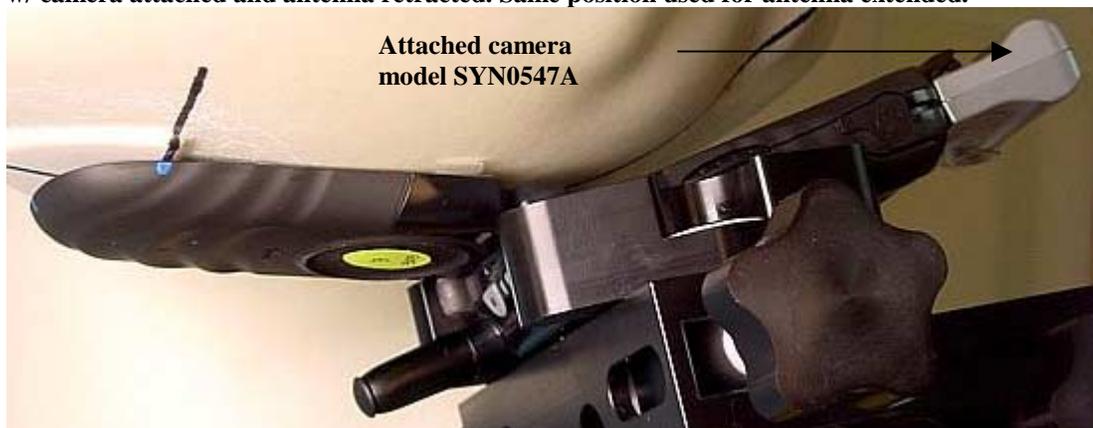


Figure 8. Assessment @ the Right ear; cheek touch position; w/ keyboard attached and antenna retracted. Same position used for antenna extended.



Attached keyboard model NNTN4877A

Figure 9. Assessment @ the Face; DUT flip open w/ ends separated 2.5cm from the flat area of SAM phantom. Same position used for antenna extended

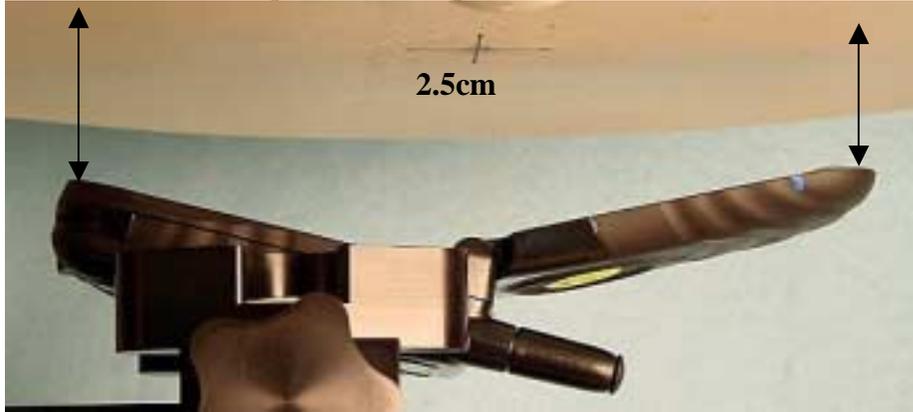
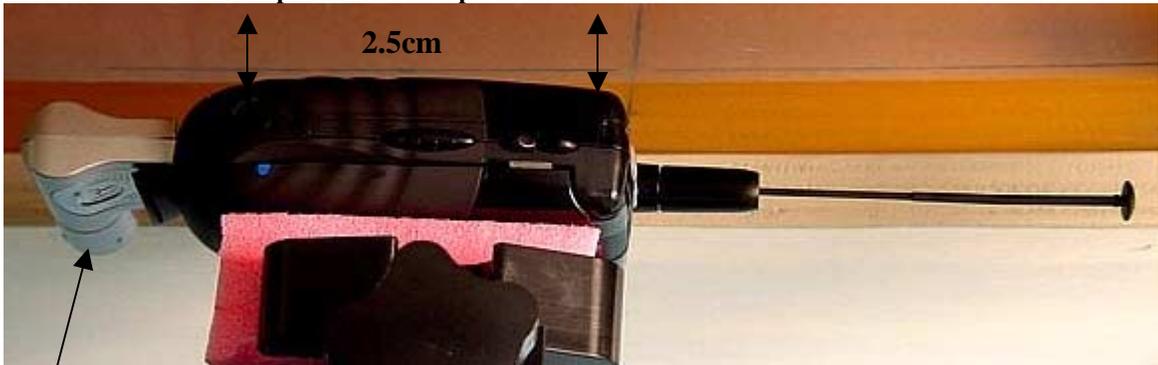


Figure 10. Assessment @ the Face; DUT flip closed w/ camera attached and flip separated 2.5cm from the flat area of SAM phantom. Same position used w/o camera and for antenna retracted



Attached camera
model SYN0547A

Figure 11. Assessment @ abdomen; DUT w/holster model NNTN4756A against the flat phantom and attached data cable model NKN6544B. Same position used for antenna extended and to assess data cable models NKN6540A, NNTN4007A, NNTN4049A as well as w/o a data cable.



Figure 12. Assessment @ the Abdomen; w/holster model NNTN4756A against the phantom and attached digital camera model SYN0547A. Same position used for antenna retracted



Figure 13. Assessment @ the Abdomen; w/ holster model NNTN4756A against the phantom and attached audio accessory model SYN8390B. Same position used to assess audio accessory models NNTN4620A, SYN8146C, NTN8513B, SYN7875C, NTN8496A, NNTN4033A, and NSN6066A w/ antenna extended and retracted.

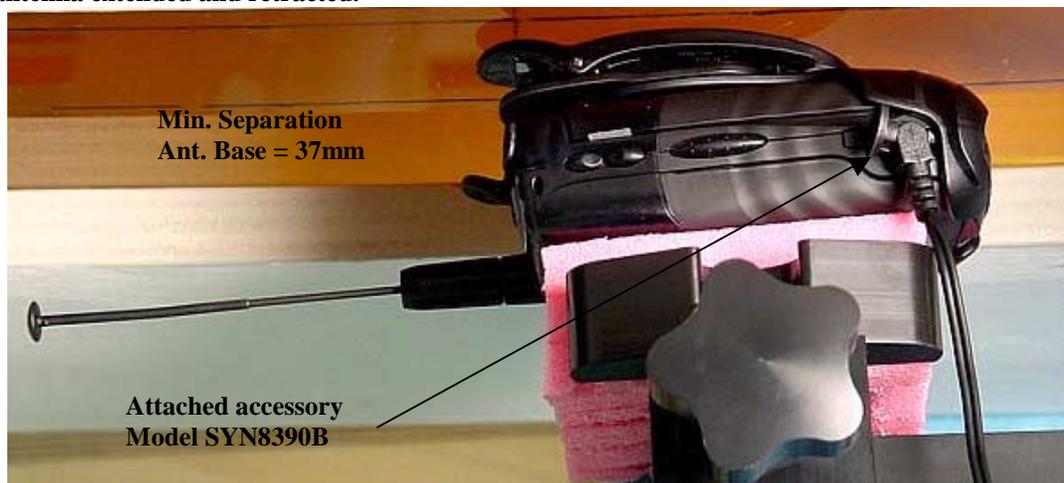


Figure 14. Assessment @ the Abdomen; DUT back 2.5cm separation. Similar position used for antenna extended and DUT front 2.5cm from phantom



**Figure 15. Assessment @ the Abdomen; DUT back towards phantom w/ attached keyboard and antenna separated 2.5cm.
Similar position used w/o camera and keyboard options and for antenna extended**



Figure 16: Robot Test System (Flat Phantom)

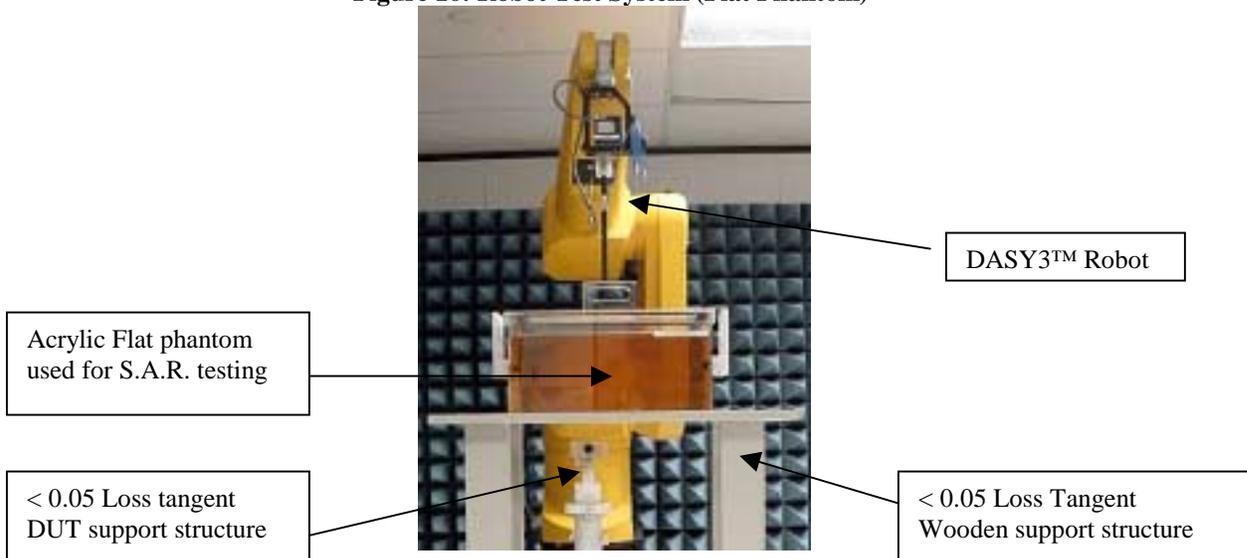


Figure 17: Robot Test System (SAM phantom)



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

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = f(d,k)</i>	<i>f</i>	<i>g</i>	<i>h = cxf/e</i>	<i>i = cxg/e</i>	<i>k</i>
Uncertainty Component	Section of IEEE P1528	Tol. (± %)	Prob. Dist.	Divisor	<i>c_f</i> (1 g)	<i>c_g</i> (10 g)	1 g <i>n_f</i> (±%)	10 g <i>n_g</i> (±%)	<i>v_i</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	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	5.8	R	1.73	1	1	3.3	3.3	∞
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	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.6	N	1.00	1	1	3.6	3.6	29
Device Holder Uncertainty	E.4.1	2.8	N	1.00	1	1	2.8	2.8	8
Output Power Variation - SAR drift measurement	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	10.0	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Permittivity - deviation from target values	E.3.2	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity - measurement uncertainty	E.3.3	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Combined Standard Uncertainty			RSS				12	11	1363
Expanded Uncertainty (95% CONFIDENCE LEVEL)			<i>k=2</i>				23	22	

Table 2: Uncertainty Budget for System Performance Check

<i>a</i>	<i>b</i> Section of IEEE P1528	<i>c</i> Tol. (± %)	<i>d</i> Prob. Dist.	<i>e</i> = <i>f</i> (<i>d</i> , <i>k</i>)			<i>h</i> = <i>cxf/e</i>		<i>k</i>
				Div.	<i>f</i> <i>c_f</i> (1 g)	<i>g</i> <i>c_g</i> (10 g)	1 g <i>u_f</i> (±%)	10 g <i>u_g</i> (±%)	
Uncertainty Component									<i>v_i</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	5.8	R	1.73	1	1	3.3	3.3	∞
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	0.0	R	1.73	1	1	0.0	0.0	∞
Integration Time	E.2.8	0.0	R	1.73	1	1	0.0	0.0	∞
RF Ambient Conditions	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.3	R	1.73	1	1	0.2	0.2	∞
Probe Positioning with respect to Phantom Shell	E.6.3	1.1	R	1.73	1	1	0.6	0.6	∞
Extrapolation, interpolation and Integration Algorithms for Max. SAR Evaluation	E.5	3.9	R	1.73	1	1	2.3	2.3	∞
Dipole									
Dipole Axis to Liquid Distance	E.4.2	1.0	R	1.73	1	1	0.6	0.6	∞
Input Power and SAR Drift Measurement	E.6.2	4.7	R	1.73	1	1	2.7	2.7	∞
Phantom and Tissue Parameters									
Phantom Uncertainty (shape and thickness tolerances)	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity - deviation from target values	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity - measurement uncertainty	E.3.3	10.0	R	1.73	0.64	0.43	3.7	2.5	∞
Liquid Permittivity - deviation from target values	E.3.2	10.0	R	1.73	0.6	0.49	3.5	2.8	∞
Liquid Permittivity - measurement uncertainty	E.3.3	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Combined Standard Uncertainty			RSS				10	9.4	∞
Expanded Uncertainty (95% CONFIDENCE LEVEL)			<i>k</i> =2				20	18	

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) *c_i* - sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.
- g) *u_i* – SAR uncertainty
- h) *v_i* - 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 a shortened S.A.R. cube scan 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

Batteries, accessories and band edges assessment at the Left ear; Cheek Touch and Tilt; 1:3 mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case battery, antenna, test position, accessory assessment												
CM-LEAR-R2-030626-03/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Touch	None	None	.698	-.430	1.03	1.14	.691	.765
CM-LEAR-R2-030626-08/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Touch	None	None	.694	-.250	.898	.959	.606	.647
CM-LEAR-R2-030627-03/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Touch	None	None	.687	-.260	.971	1.05	.650	.703
CM-LEAR-R2-030627-04/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Touch	None	None	.688	-.270	.906	.981	.616	.667
CM-LEAR-R2-030627-05/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	15D Tilt	None	None	.675	-.360	.285	.321	.207	.233
CM-LEAR-R2-030627-06/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	15D Tilt	None	None	.675	-.350	.285	.320	.205	.230
CM-LEAR-R2-030708-04/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Touch	None	SYN0547A Camera	.690	-.550	.695	.800	.481	.554
CM-LEAR-R2-030708-05/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Touch	None	SYN0547A Camera	.710	-.660	.645	.751	.433	.504
CM-LEAR-R2-030628-02/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Touch	None	NNTN4877A Keyboard	.661	-.240	.983	1.1	.664	.743
CM-LEAR-R2-030628-04/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Touch	None	NNTN4877A Keyboard	.658	-.280	.929	1.054	.631	.716
Band edge assessment												
CM-LEAR-R2-030715-02/364TOL002L	806.0125	IN	SNN5705B NNTN4907A	Touch	None	None	.700	-.440	1.05	1.162	.726	.803
CM-LEAR-R2-030715-03/364TOL002L	806.0125	OUT	SNN5705B NNTN4907A	Touch	None	None	.706	-.700	.945	1.11	.647	.760
CM-LEAR-R2-030715-04/364TOL002L	824.9875	IN	SNN5705B NNTN4907A	Touch	None	None	.667	.210	.936	.982	.626	.657
CM-LEAR-R2-030715-05/364TOL002L	824.9875	OUT	SNN5705B NNTN4907A	Touch	None	None	.704	-.230	.872	.919	.601	.634

Accessories and band edges assessment at the Right ear; Cheek Touch and Tilt; 1:3 mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case antenna, test position and accessory assessment												
CM-REAR-R2-030629-05/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	15D Tilt	None	None	.686	-.660	.303	.360	.222	.264
CM-REAR-R2-030630-05/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	15D Tilt	None	None	.684	-.480	.270	.309	.201	.230
CM-REAR-R2-030629-07/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Touch	None	None	.690	-.240	.905	.970	.611	.655
CM-REAR-R2-030715-06/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Touch	None	None	.665	-.690	1.01	1.246	.681	.840
CM-REAR-R2-030629-09/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Touch	None	SYN0547A Camera	.687	.180	.720	.734	.507	.517
CM-REAR-R2-030629-10/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Touch	None	SYN0547A Camera	.690	-.280	.589	.637	.412	.446
CM-REAR-R2-030630-03/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Touch	None	NNTN4877A Keyboard	.704	-.760	.948	1.129	.646	.770
CM-REAR-R2-030630-04/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Touch	None	NNTN4877A Keyboard	.670	-.010	.780	.817	.533	.558
Band edge assessment												
CM-REAR-R2-030715-07/364TOL002L	806.0125	IN	SNN5705B NNTN4907A	Touch	None	None	.730	-.540	1.210	1.370	.815	.923
CM-REAR-R2-030716-07/364TOL002L shortened scan	806.0125	IN	SNN5705B NNTN4907A	Touch	None	None	.707	-.370	1.160	1.263	.793	.864
CM-REAR-R2-030715-08/364TOL002L	806.0125	OUT	SNN5705B NNTN4907A	Touch	None	None	.721	-.560	1.02	1.160	.700	.796
CM-REAR-R2-030716-02/364TOL002L	824.9875	IN	SNN5705B NNTN4907A	Touch	None	None	.673	-.720	1.080	1.326	.725	.890
CM-REAR-R2-030716-03/364TOL002L	824.9875	OUT	SNN5705B NNTN4907A	Touch	None	None	.679	-.130	.911	.968	.609	.647

Accessory and band edge assessment at the Face; Flip open and closed; 2.5cm separation; 1:6 mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case assessment with flip open and closed and accessory attached.												
CM-FACE-R2-030709-02/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Flip Open	None	None	.702	.090	.085	.042	.061	.031
CM-FACE-R2-030709-03/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Flip Open	None	None	.701	.090	.066	.033	.048	.024
CM-FACE-R2-030708-11/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Flip Closed	None	None	.697	.020	.200	.100	.143	.072
CM-FACE-R2-030708-12/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Flip Closed	None	None	.687	.050	.181	.092	.131	.067

CM-FACE-R2-030709-04/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Flip Closed	None	SYN0547A Camera	.702	-.420	.159	.088	.112	.062
CM-FACE-R2-030709-05/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Flip Closed	None	SYN0547A Camera	.698	-.480	.142	.080	.103	.058
Band edge assessment												
CM-FACE-R2-030709-06/364TOL002L	806.0125	IN	SNN5705B NNTN4907A	Flip Closed	None	None	.707	-.390	.206	.113	.149	.081
CM-FACE-R2-030709-07/364TOL002L	806.0125	OUT	SNN5705B NNTN4907A	Flip Closed	None	None	.716	-.430	.189	.104	.138	.076
CM-FACE-R2-030709-08/364TOL002L	824.9875	IN	SNN5705B NNTN4907A	Flip Closed	None	None	.684	-.480	.169	.097	.122	.070
CM-FACE-R2-030709-09/364TOL002L	824.9875	OUT	SNN5705B NNTN4907A	Flip Closed	None	None	.683	-.380	.157	.088	.113	.063

Batteries, accessories and band edges assessment at the Left ear; Cheek Touch and Tilt; 1:3 mode; 896-902 MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case battery search and test position assessment												
CM-LEAR-R2-030630-10/364TOL002L	899.66875	IN	SNN5705B NNTN4907A	Touch	None	None	.675	-.060	.539	.567	.358	.376
CM-LEAR-R2-030701-02/364TOL002L	899.66875	OUT	SNN5705B NNTN4907A	Touch	None	None	.670	.080	.733	.766	.490	.512
CM-LEAR-R2-030701-03/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Touch	None	None	.681	-.270	.549	.601	.366	.400
CM-LEAR-R2-030701-04/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Touch	None	None	.657	-.280	.829	.942	.549	.624
CM-LEAR-R2-030701-05/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	15D Tilt	None	None	.688	-.290	.148	.161	.104	.113
CM-LEAR-R2-030701-06/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	15D Tilt	None	None	.690	-.200	.201	.214	.142	.151
CM-LEAR-R2-030701-07/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Touch	None	SYN0547A Camera	.682	-.150	.415	.441	.272	.289
CM-LEAR-R2-030701-08/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Touch	None	SYN0547A Camera	.701	-.110	.586	.601	.380	.390
CM-LEAR-R2-030701-09/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.695	-.820	.581	.707	.382	.465
CM-LEAR-R2-030702-02/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.680	-.360	.826	.924	.548	.613
Band edge assessment												
CM-LEAR-R2-030702-03/364TOL002L	896.01875	IN	SNN5704A NNTN4907A	Touch	None	None	.703	-.300	.555	.595	.372	.399
CM-LEAR-R2-030702-04/364TOL002L	896.01875	OUT	SNN5704A NNTN4907A	Touch	None	None	.685	-.180	.811	.864	.545	.581
CM-LEAR-R2-030702-05/364TOL002L	901.98125	IN	SNN5704A NNTN4907A	Touch	None	None	.674	-.250	.516	.568	.345	.380
CM-LEAR-R2-030702-06/364TOL002L	901.98125	OUT	SNN5704A NNTN4907A	Touch	None	None	.671	-.200	.801	.875	.536	.586

Accessory and band edges assessment at the Right ear; Cheek Touch and Tilt; 1:3 mode; 896-902 MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case antenna, test position and accessory assessment												
CM-REAR-R2-030702-07/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Touch	None	None	.706	-.300	.519	.556	.336	.360
CM-REAR-R2-030702-08/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Touch	None	None	.706	-.290	.786	.840	.511	.546
CM-REAR-R2-030702-09/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	15D Tilt	None	None	.703	-.340	.162	.175	.116	.125
CM-REAR-R2-030708-06/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	15D Tilt	None	None	.705	-.410	.197	.217	.143	.157
CM-REAR-R2-030708-03/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Touch	None	SYN0547A Camera	.678	-.450	.407	.466	.251	.287
CM-REAR-R2-030708-02/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Touch	None	SYN0547A Camera	.684	-.330	.455	.502	.280	.309
CM-REAR-R2-030703-04/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.701	-1.020	.565	.715	.384	.486
CM-REAR-R2-030703-05/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.702	-.600	.868	.997	.585	.672
Band edge assessment												
CM-REAR-R2-030703-07/364TOL002L	896.01875	IN	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.703	-.850	.617	.750	.411	.500
CM-REAR-R2-030703-08/364TOL002L	896.01875	OUT	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.697	-.520	.890	1.008	.600	.679
CM-REAR-R2-030703-09/364TOL002L	901.98125	IN	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.695	-.460	.563	.630	.379	.424
CM-REAR-R2-030703-11/364TOL002L	901.98125	OUT	SNN5704A NNTN4907A	Touch	None	NNTN4877A Keyboard	.691	-1.040	.856	1.102	.577	.743

Accessory and band edge assessment at the Face; Flip open and closed; 2.5cm separation; 1:6 mode; 896-902 MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case assessment with flip open and closed and accessory attached.												
CM-FACE-R2-030703-12/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Flip Open	None	None	.667	-.420	.034	.020	.023	.014
CM-FACE-R2-030703-13/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Flip Open	None	None	.679	-.480	.043	.025	.030	.017
CM-FACE-R2-030703-14/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Flip Closed	None	None	.674	-.350	.102	.057	.071	.040
CM-FACE-R2-030707-02/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Flip Closed	None	None	.663	-.490	.144	.085	.101	.060
CM-FACE-R2-030708-07/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Flip Closed	None	SYN0547A Camera	.679	-.240	.131	.071	.092	.050

CM-FACE-R2-030708-08/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Flip Closed	None	SYN0547A Camera	.682	-.460	.143	.082	.102	.058
Band edge assessment												
CM-FACE-R2-030718-10/364TOL002L	901.98125	IN	SNN5704A NNTN4907A	Flip Closed	None	None	.728	-.390	.109	.060	.077	.042
CM-FACE-R2-030718-11/364TOL002L	901.98125	OUT	SNN5704A NNTN4907A	Flip Closed	None	None	.730	-.280	.149	.079	.105	.056
CM-FACE-R2-030717-04/364TOL002L	896.01875	IN	SNN5704A NNTN4907A	Flip Closed	None	None	.707	-.310	.120	.064	.084	.045
CM-FACE-R2-030717-05/364TOL002L	896.01875	OUT	SNN5704A NNTN4907A	Flip Closed	None	None	.708	-.370	.145	.079	.103	.056

Assessment of offered batteries at the abdomen; 81:120mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case battery search												
CM-Ab-R2-030709-11/364TOL002L	813.5125	IN	SNN5705B NNTN4907A	Against phantom	NNTN4756A Holster	None	.625	.200	.929	1.040	.671	.752
CM-Ab-R2-030709-12/364TOL002L	813.5125	OUT	SNN5705B NNTN4907A	Against phantom	NNTN4756A Holster	None	.637	-.220	.860	.994	.626	.724
CM-Ab-R2-030709-13/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	None	.627	-.290	.951	1.135	.689	.822
CM-Ab-R2-030709-14/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	None	.625	-.260	.840	.999	.608	.723

Assessment of offered data cable accessories at the abdomen; 81:120mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
CM-Ab-R2-030710-02/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NKN6544B Data Cable	.618	-.240	.726	.869	.523	.626
CM-Ab-R2-030710-03/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NKN6544B Data Cable	.623	-.200	.656	.772	.474	.558
CM-Ab-R2-030710-04/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NKN6540A Data Cable	.667	-.290	.659	.739	.480	.539
CM-Ab-R2-030710-05/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NKN6540A Data Cable	.627	-.210	.637	.746	.466	.546
CM-Ab-R2-030710-06/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4007A Data Cable	.626	-.270	.596	.709	.427	.508
CM-Ab-R2-030710-07/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4007A Data Cable	.693	-.270	.627	.674	.453	.487
CM-Ab-R2-030710-08/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4049A Data Cable	.618	-.210	.583	.693	.422	.502
CM-Ab-R2-030710-09/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4049A Data Cable	.620	-.210	.430	.510	.313	.371

Assessment of other accessory at the abdomen; 81:120mode; 806-825MHz band

Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Assessment of other accessory												
CM-Ab-R2-030710-10/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.622	-.290	.944	1.136	.684	.823
CM-Ab-R2-030710-11/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.622	-.860	.792	1.087	.579	.794

Assessment of offered audio accessories at the abdomen; 1:3mode; 806-825MHz band

Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
CM-Ab-R2-030710-12/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4620A Silver earbud	.702	-.320	.375	.404	.274	.295
CM-Ab-R2-030710-13/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4620A Silver earbud	.704	-.690	.397	.465	.280	.328
CM-Ab-R2-030711-02/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN8390B Privacy Earpc & Mic	.701	-.380	.446	.487	.315	.344
CM-Ab-R2-030711-03/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN8390B Privacy Earpc & Mic	.703	-.520	.346	.390	.250	.282
CM-Ab-R2-030711-04/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN8146C Lt- wgt hdset	.701	-.660	.400	.466	.286	.333
CM-Ab-R2-030711-05/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN8146C Lt- wgt hdset	.661	-.530	.400	.479	.290	.347
CM-Ab-R2-030711-06/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN7875C Neck Loop	.645	-.220	.390	.445	.273	.312
CM-Ab-R2-030711-07/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN7875C Neck Loop	.669	-.460	.317	.369	.232	.270
CM-Ab-R2-030711-08/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8496A Lt- wgt hdset w/mic	.660	-.500	.372	.443	.268	.319
CM-Ab-R2-030711-09/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8496A Lt- wgt hdset w/mic	.689	-.390	.351	.390	.256	.285
CM-Ab-R2-030711-10/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4033A Privacy earpc w/mic & PTT	.668	-.800	.422	.532	.296	.373
CM-Ab-R2-030711-11/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NNTN4033A Privacy earpc w/mic & PTT	.695	.780	.383	.386	.271	.273
CM-Ab-R2-030711-12/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NSN6066A RSM	.695	-.410	.398	.441	.277	.307
CM-Ab-R2-030711-13/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NSN6066A RSM	.689	-.580	.366	.425	.266	.309
EC-Ab-R2-030711-14/364TOL002L	813.5125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt- wgt Hdband	.692	-.370	.509	.561	.360	.397
EC-Ab-R2-030712-03/364TOL002L	813.5125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt- wgt Hdband	.691	-.350	.364	.400	.266	.292

Band edges assessment at the abdomen; 81:120mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
EC-Ab-R2-030712-04/364TOL002L	806.0125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.617	-.290	1.01	1.225	.737	.894
EC-Ab-R2-030713-06/364TOL0033	806.0125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.640	-.820	.978	1.292	.702	.927
EC-Ab-R2-030712-05/364TOL002L	806.0125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.621	-.250	.864	1.032	.629	.751
EC-Ab-R2-030712-06/364TOL002L	824.9875	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.615	-.190	.833	.991	.607	.722
EC-Ab-R2-030712-07/364TOL002L	824.9875	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	SYN0547A Camera	.614	-.250	.743	.897	.540	.652

Assessment at the abdomen; 2.5cm separation; w/ overall worst case configuration; 81:120mode; 806-825MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
CM-Ab-R2-030718-06/364TOL002L	806.0125	IN	SNN5704A NNTN4907A	DUT back ant. at 2.5cm	None	SYN0547A Camera	.634	-.360	.705	.846	.520	.624
CM-Ab-R2-030718-07/364TOL002L	806.0125	IN	SNN5704A NNTN4907A	DUT back unit at 2.5cm	None	SYN0547A Camera	.627	-.370	.633	.770	.467	.568
CM-Ab-R2-030718-08/364TOL002L	806.0125	IN	SNN5704A NNTN4907A	DUT front unit at 2.5cm	None	SYN0547A Camera	.625	-.420	.590	.728	.430	.531

Worst-case band edges assessments; w/ worst-case audio accessory from 800 band assessment; 1:3mode; 896-902MHz band												
Run Number/ SN	Freq. (MHz)	Antenna Position	Battery	Test position	Carry Case	Additional attachments	Initial Power (W)	S.A.R. Drift (dB)	Measured 1g-S.A.R. (mW/g)	Max Calc. 1g-S.A.R. (mW/g)	Meas. 10g-S.A.R. (mW/g)	Max Calc. 10g-S.A.R. (mW/g)
Worst-case band edge assessment												
EC-Ab-R2-030712-08/364TOL002L	896.01875	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt-wgt Hdband	.662	-.300	.351	.398	.246	.279
EC-Ab-R2-030712-09/364TOL002L	896.01875	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt-wgt Hdband	.660	-.290	.314	.356	.219	.248
EC-Ab-R2-030712-10/364TOL002L	899.66875	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt-wgt Hdband	.685	-.320	.341	.375	.240	.264
EC-Ab-R2-030712-11/364TOL002L	899.66875	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt-wgt Hdband	.686	-.270	.385	.418	.271	.294
EC-Ab-R2-030712-12/364TOL002L	901.98125	IN	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt-wgt Hdband	.685	-.310	.327	.359	.228	.250
EC-Ab-R2-030712-13/364TOL002L	901.98125	OUT	SNN5704A NNTN4907A	Against phantom	NNTN4756A Holster	NTN8513B Lt-wgt Hdband	.683	-.280	.387	.423	.273	.298

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:

$$\text{Max. Calc. 1-g Avg. SAR} = ((\text{S.A.R. meas.} / (10^{(\text{Pdrift}/10)})) * (\text{Pmax}/\text{Pint}))$$

P_{max} = Maximum Power (mW)

P_{int} = Initial Power (mW)

$\text{SAR}_{\text{meas.}}$ = Measured 1 or 10 gram averaged peak S.A.R. (mW/g)

Note: For positive drift values Max. Calc. S.A.R. = (measured S.A.R. * (Max Pwr/Init. Pwr.))

Note: Where initial power is greater than max power Max Calc. S.A.R. = ((S.A.R. meas. / (10^(Pdrift/10))) * (1))

Note: 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: AZ489FT5825 model H63XAH6RR3AN.

At the abdomen: 1-g Avg. = 1.29mW/g; 10-g Avg. = 0.93 mW/g

At the Face: 1-g Avg. = 0.11 mW/g; 10-g Avg. = 0.08 mW/g

At the Head: 1-g Avg. = 1.37 mW/g; 10-g Avg. = 0.92 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)