Certificate Number: 1449-02

MOTOROLA

ACCREDITED

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

Attention:	FCC
Date of Report:	May 22, 2003
Report Revision:	Rev. B
Device Manufacturer:	Motorola
Device Description:	HT1250LS 2.5W Portable Transceiver 746-794MHZ
FCC ID:	ABZ99FT5000
Device Model:	PMUF1105A

Test Period: 9/12/02 – 10/03/02

Test Engineer: Jim Fortier
Sr. Staff Engineer

Author: Michael Sailsman
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.

Signature on File — 5/27/03

Ken Enger
Senior Resource Manager, Product Safety and EME Director

Date Approve

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REVISION HISTORY

Date	Revision	Comments
3/18/02	O	Initial Release
1/28/03	A	Pilot Release
5/22/03	B	Chest pack model HLN6602A was removed from the accessory offering

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 FCC ID ABZ99FT5000. A design modification was made to FCC ID ABZ99FT5000 subsequent to the initial filing and issued FCC grant. The output-matching network for the final transmit power amplifier of the product was modified. The modification included (2) capacitor value changes, a resistor value change in second stage of the transmit power amplifier, and an added resistor to the antenna connector for ESD protection.

The applicable exposure environment is Occupational/Controlled.

The test results included herein represent the highest S.A.R. levels applicable to this product and clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8.0 mW/g per the requirements of 47 CFR 2.1093(d).

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 2001
- 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: ABZ99FT5000 is a hand held portable transceiver with LTR/Passport, and DTMF capabilities. The intended use of the radio is as a hand-held Push-To-Talk (PTT) transceiver held one to two inches away from the users lips or with approved accessories.

The radio operates on traditional Trunked radio systems, PassPort trunked systems (an enhanced trunking protocol for wide area dispatch), LTR trunked systems (a transmission based trunking protocol for single site trunking) and Conventional radio systems (single channel unit to unit communications).

FCC ID: ABZ99FT5000 is capable of operating in the 746-794MHz RF band. The rated power of the device is 2.5W with a maximum conducted power output of 3W.

The HTT1250LS radio is offered with the following options and accessories:

Batteries:

HNN9008AR NiMH High Capacity Battery
HNN9009AR NiMH Ultra High Capacity Battery
HNN9010AR NiMH Ultra High Capacity Battery Factory Mutual
HNN9011AR NiCd High Capacity Battery Factory Mutual
HNN9012AR NiCd High Capacity Battery
HNN9013BR Lithium Ion Battery

Antennas:

NAF5083A Whip Dipole 746-794MHz ½ wave length –0.5dBi gain

Body-Worn Accessory:

HLN9844A Spring Belt Clip (for 1.5" belt loop)
HLN9714A Spring Belt Clip
HLN9952A Belt Clip Carry Holder
HLN9701B Case, Nylon
HLN9690A Case, Std Leather, Short, DTMF, Swivel, Thin Batt's
HLN9652A Case, Std Leather, Short, Plain, Belt Loop, thin Batt's
HLN9665A Case, Standard leather, Short, Plain, Belt Loop, Std Batt's
HLN9670A Case, Standard Leather, Short, Plain, Swivel, Thin Battery
HLN9676A Case, Standard Leather, Short, Plain, Swivel, Std Battery
HLN9677A Case, Std Leather, Short, DTMF, Belt Loop, Thin Batt's
HLN9689A Case, Std Leather, Short, DTMF, Belt Loop, Std Batt's
HLN9694A Case, Std Leather, Short, DTMF, Swivel, Std Batt's
HLN9946A Limited Keypad, Hard Leather, W/ Belt Loop, Std Battery
HLN9945A Limited Keypad, Hard Leather, W/ Belt Loop, Thin Battery
HLN9955A Limited Keypad, Hard Leather, W/ Swivel, Thin Battery
HLN9998A Limited Keypad, Hard Leather, W/ Swivel, Std Battery
HLN9985B Waterproof Bag
RLN4815A Fanny Pack Carry Accessory (Universal Radio Pack)
PMLN4280A Carry Case (Full Thin Leather)
PMLN4281A Carry Case (Basic Thin Leather)
NTN5243A Carry Strap

Other Attachments:

BDN6641A Ear Microphone (Gray) requires AARMN4044 OR AARMN4045 Interface Module - FM Approved
BDN6677A Ear Microphone (Black) requires AARMN4044 or AARMN4045 interface module
BDN6678A Ear Microphone (Beige) requires AARMN4044 or AARMN4045 interface module)

ENLN4135A	PTT Module
ENMN4010A	Noise Com
ENMN4011A	Helmet Com
ENMN4012A	Breeze Headset with PTT
ENMN4013A	1 Wire Flexible Ear Receiver
ENMN4014A	3-Wire Min Lapel Kit, Black
ENMN4015A	Lightweight Headset
ENMN4016A	Medium Weight Behind-the-head Headset with PTT
ENMN4017A	3-Wire Min Lapel Kit, Beige
HLN9716B	Audio Accessory Adapter for GP300 accessories
HLN9717A	3.5 mm Accessory Adapter
HMN9052E	Remote Speaker Microphone (Standard)
HMN9053E	Noise Canceling Remote Speaker Microphone
NTN1722A	Integrated Ear Microphone/Receiver System with PTT
NTN1723A	Integrated Ear Microphone/Receiver System with Palm PT
NTN1724A	Integrated Ear Microphone/Receiver System with Ring PTT
NTN8370A	Extreme Noise Earpiece Adapter Kit (use with AARMN4021, AARMN4022, AARMN4028 & AARMN4029)
NTN8371A	Low Noise Earpiece Adapter Kit (use with AARMN4021, AARMN4022, AARMN4028 & AARMN4029)
PMLN4418A	Ear bud with PTT microphone
RKN4097A	In-Line PTT Adapter Cable for use with RMN4051, RMN4052 & RMN4053 Headsets
RLN4885A	Receive Only Ear bud with 3.5mm plug (for use with HMN9053)
RLN4922A	Completely Discrete Earpiece Kit (for use with 2 wire earpieces)
RLN4941A	Receive Earpiece with tube, rubber ear tip and 3.5mm plug (For use with HMN9053)
AARMN4017A	Ultra Light Headset with Streamlined Boom Microphone
AARMN4018B	Light Weight Headset W/Boom Mic and In-Line PTT
AARMN4019A	Medium Weight Over the Head Dual Muff Headset w/ Noise Canceling Mic & In-Line
AARMN4020A	Heavy Weight Headset, w/ boom microphone
AARMN4021A	Earpiece W/O Volume Control
AARMN4022A	2 Wire Earpiece W/ Mic and PTT
AARMN4028A	Ear piece W/O Volume Control
AARMN4029A	2 Wire Ear piece W/Mic and PTT
AARMN4031A	Lightweight Headset with Boom Microphone (no In-Line PTT) (VOX operational only on conventional channel)
RMN4044A	Ear Microphone Interface Module for PTT Only
RMN4045A	Ear Microphone System, Push to Talk w/ Voice
RMN4048A	Bone Vibrator Headset
RMN4051A	2-Way Hard-hat Mount Headset, Black - Noise Reduction
RMN4052A	Tactical Headband-Style Headset, Gray - Noise Reduction
RMN4053A	Tactical hard-hat Mount Headset, Gray - Noise Reduction
RMN4054A	Receive-Only Hard-hat Mount Headset with 3.5mm right angle plug – Noise Reduction Rating - 22dB
RMN4055A	Receive-Only Headband-Style Headset with 3.5mm right angle plug
WADN4190B	Flexible ear receiver w/ coiled cable For use with the HMN9053, HMN9054, & HMN9057 RSM and PSM
HKN9055A	Remote Speaker Microphone Replacement Cable
0180358B38	Finger Push to Talk for Ear Microphone FM Approved

3.1 Test Signal

Test Signal mode:

Test Mode	X	Base Station		Simulator	

Transmission Mode:

CW	X
Native Transmission	
TDMA	
Other	

3.2 Test Output Power

Output power was measured before and after each test. A characteristic power slump table is provided in Appendix A for the battery producing the highest S.A.R. results. Appendix A also presents a shortened S.A.R. cube scan to assess the validity of the calculated results presented herein.
Note that 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.

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/SN1393. 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 SAR @ 1W (mW/g)	Test Date(s)
1393	FCC Body	3/23/02	D835V2/SN426	10.485 +/- 0.105	10.65 +/- 10%	9/12/02 - 9/19/02 4 test days
1393	IEEE Head	3/23/02	D835V2/SN426	9.53 +/- 0.00	10.04 +/- 10%	9/20/02

The DASY3™ system is operated per the instructions in the DASY3™ Users Manual. The complete manual is available directly from SPEAG™.

4.2 Description of Phantom

4.2.1 Body and Face Phantom:

Flat Phantom:

A rectangular shaped box made of high-density polyethylene (HDPE) with a dielectric constant of 2.26 and a loss tangent of less than .00031. The phantom is mounted on a wooden supporting structure that has a loss tangent of < 0.05. The structure has a 67 x 20.32 centimeter opening at its center to allow positioning the DUT to the flat phantom's surface. The supporting structure is assembled with wooden pegs and glue. The table below shows the flat phantom dimensions.

Length	80cm
Width	30cm
Height	20cm
Surface Thickness	0.2cm

4.2.2 SAM Phantom

SAM Phantom assessment was not applicable for this filing.

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	Face

4.3.2 Simulated Tissue Composition

Tissue Ingredient (%) @ 776 MHz		
	Head	**Body**
Sugar	57	44.9
DGBE (Glycol)	-	-
De ionized -Water	40.45	53.06
Salt	1.45	0.94
HEC	1.0	1.0
Bact.	0.1	0.1

Characterization of Simulated tissue materials and ambient conditions:

Simulated tissue prepared for SAR measurements is measured daily and within 24 hours prior to actual SAR 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**
835	55.2	52.7 - 53.2	0.97	0.98 - 0.99
776	55.4	53.2 - 53.9	0.97	0.93

IEEE Head				
Frequency (MHz)	**Di-electric Constant Target**	**Di-electric Constant Meas. (Range)**	**Conductivity Target S/m**	**Conductivity Meas. S/m**
835	41.5	42.9	0.90	0.91
776	41.8	43.5	0.90	0.85

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^{o}C of the temperature at which the dielectric properties were determined. 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: 21.1 - 24.0˚C Avg. 22.2˚C
Relative Humidity	30 - 70 %	Range: 44.8 54.3% Avg. 49.7%
Tissue Temperature	NA	Range: 20.9 - 21.9˚C Avg. 21.5˚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 SAR 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. assessment test plan for the modified FCC ID: ABZ99FT5000. S.A.R. measurements were performed using a flat phantom to assess performance at the abdomen and face. All assessments were done with the DUT in CW mode.
Assessments at the abdomen were performed at the center frequency of the transmit band using the offered antenna along with battery model HNN9013B (offers closest separation distance), and body-worn accessory models HLN9714A, HLN9844A, PMLN4280A, and HLN9701B. The standard Remote Speaker Microphone (RSM) and audio accessory model PMLN4418A were included in the above assessments.
The additional offered batteries were assessed at the center frequency using the configuration from above that produced the highest S.A.R. results.
Assessments were performed at the band edges using the configuration from above that produced the highest S.A.R. results.
Assessments at the face were performed across the transmit band using the configuration that produced the highest S.A.R. from the initial filing.
Assessments at 2.5cm separation distance were performed using the configuration from the 2.5cm assessment of the previous filing. Band edge assessments were also performed at 2.5cm separation distance.

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 applicable body-worn accessories or with 2.5cm separation distance from the phantom.

5.1.2 Head

Assessments at the head was not applicable for this filing

5.1.3 Face

The DUT was positioned at the center of the flat phantom with a 2.5cm separation distance from the microphone.

5.2 Test Position Photographs

Figure 1: Highest S.A.R. configuration. Assessment at the Abdomen; (DUT with audio accessory PMLN4418A; Antenna 2.5cm separation)

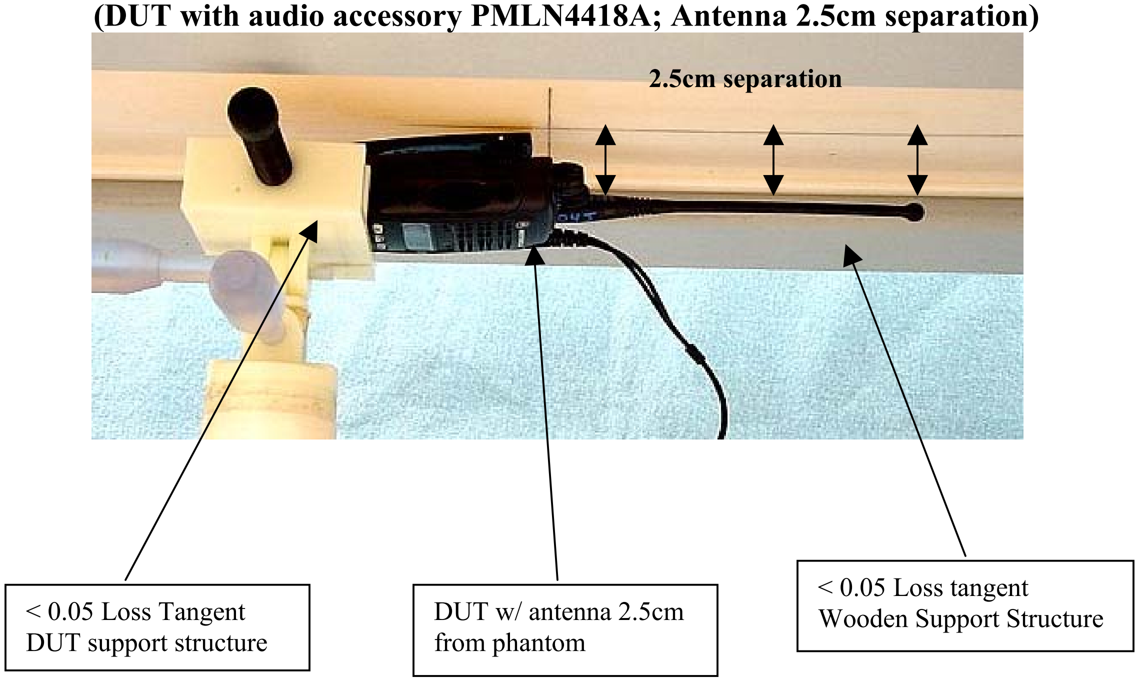


Figure 2: Assessment at the Abdomen;
DUT Against phantom w/ HLN9714A belt clip and attached RSM

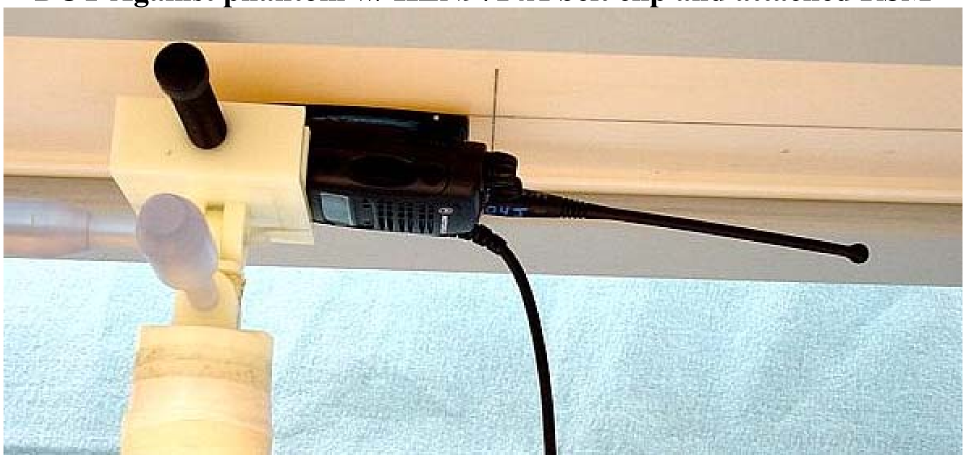


Figure 3: Assessment at the Abdomen;
DUT w/ HLN9714A belt clip and attached audio accessory model PMLN4418A

Figure 4: Assessment at the Face;
DUT microphone 2.5cm separation

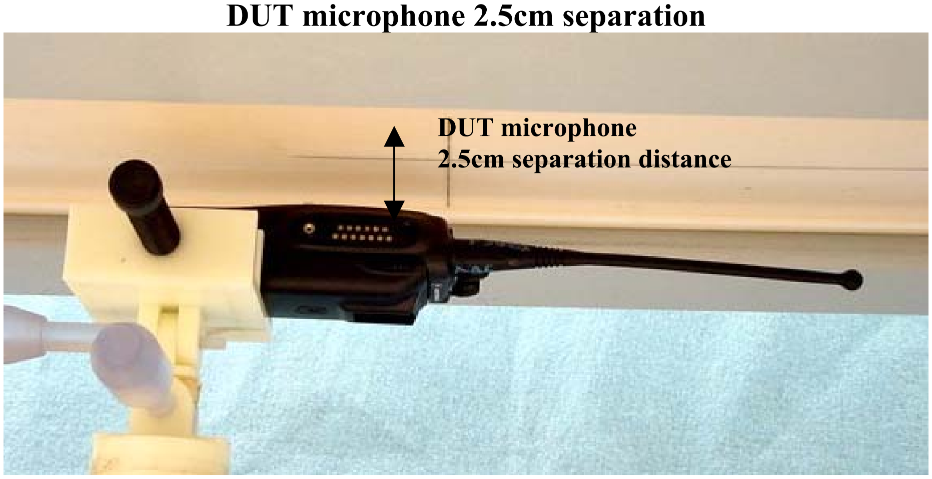
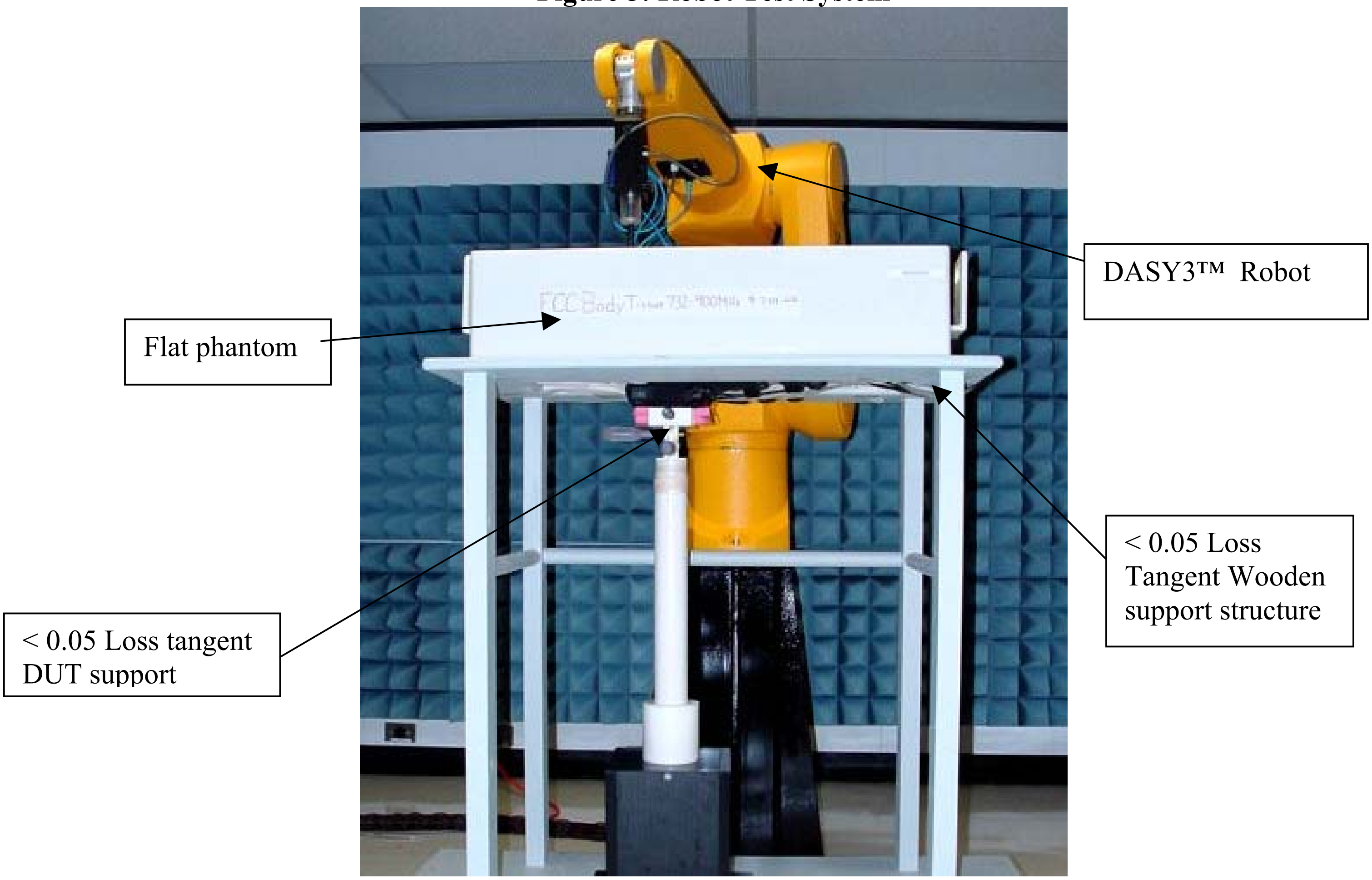


Figure 5: Robot Test System



5.2 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

a	*b*	*c*	*d*	*e = f(d,k)*	*f*	*g*	*h = c x f / e*	*i = c x g / e*	*k*
Uncertainty Component	**Section of IEEE P1528**	**Tol. (± %)**	**Prob. Dist.**	**Divisor**	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	∞
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				11.72	11.09	1363
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				22.98	21.75	

Table 2: Uncertainty Budget for System Performance Check

a	*b*	*c*	*d*	*e* = *f(d,k)*	*f*	*g*	*h* = *c x f / e*	*i* = *c x g / e*	*k*
Uncertainty Component	**Section of IEEE P1528**	**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	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	8, E.4.2	1.0	R	1.73	1	1	0.6	0.6	∞
Input Power and SAR Drift Measurement	8, 6.6.2	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				10.16	9.43	∞
Expanded Uncertainty (95% CONFIDENCE LEVEL)			*k*=2				19.92	18.48	

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 SAR 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 all of the highest measured S.A.R. results.

7.1 SAR Results

Compliance assessment at the abdomen CW mode										
Run Number/ SN	**Freq. (MHz)**	**Antenna**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (mW)**	**End Power (mW)**	**Measured 1g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**
Body-Worn/Audio accessory Assessments										
R3-020912-02-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Against Phantom	HLN9714A	RSM HMN9052E	2.95	2.65	3.36	**1.90**
R3-020913-06-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Against Phantom	HLN9714A	PMLN4418A	2.960	2.69	3.21	1.79
R3-021002-04-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Against Phantom	HLN9844A Belt clip	RSM HMN9052E	2.96	2.68	2.95	1.65
R3-021003-02-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Against Phantom	PMLN4280 A Soft Leather	RSM HMN9052E	2.970	2.69	2.10	1.17
R3-021003-03-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Against Phantom	HLN9701B Nylon	RSM HMN9052E	2.980	2.68	2.25	1.26
R3-020930-02-JF/ 008TCL1865	776	NAF5083A	HNN9008A	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	2.98	2.70	3.17	1.76
R3-020930-03-JF/ 008TCL1865	776	NAF5083A	HNN9009A	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	2.97	2.70	2.61	1.45
R3-021001-02-JF/ 008TCL1865	776	NAF5083A	HNN9010A	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	2.98	2.68	2.59	1.45
R3-021002-02-JF/ 008TCL1865	776	NAF5083A	HNN9011A	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	2.99	2.66	2.55	1.44
R3-021002-03-JF/ 008TCL1865	776	NAF5083A	HNN9012A	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	2.99	2.70	2.63	1.46
R3-020919-02-JF/ 008TCL1865	746	NAF5083A	HNN9013B	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	2.79	2.60	2.35	1.36
R3-020919-03-JF/ 008TCL1865	794	NAF5083A	HNN9013B	Against Phantom	HLN9714A Belt clip	RSM HMN9052E	3.04	2.71	2.94	1.63
Assessment at the abdomen 2.5 cm separation distance										
R3-020918-03-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Back w/Ant. & 2.5 cm	None	PMLN4418A Ear bud/mic	2.960	2.67	6.27	3.52
R3-020918-04-JF/ 008TCL1865	746	NAF5083A	HNN9013B	Back w/Ant. & 2.5 cm	None	PMLN4418A Ear bud/mic	2.760	2.60	3.79	2.19

R3-020918-05-JF/ 008TCL1865	794	NAF5083A	HNN9013B	Back w/Ant. & 2.5 cm	None	PMLN4418A Ear bud/mic	3.040	2.70	5.81	3.23
R3-020919-04-JF/ 008TCL1865	776	NAF5083A	HNN9013B	Front w/Ant. & 2.5 cm	None	PMLN4418A Ear bud/mic	2.960	2.66	6.42	**3.62**

Assessment at the Face (Flat phantom); CW mode										
Run Number/ SN	**Freq. (MHz)**	**Antenna**	**Battery**	**Test position**	**Carry Case**	**Additional attachments**	**Initial Power (mW)**	**End Power (mW)**	**Measured 1g-S.A.R. (mW/g)**	**Max Calc. 1g-S.A.R. (mW/g)**
R3-020920-02-JF/ 008TCL1865	746	NAF5083A	HNN9012A	Mic 2.5cm	None	None	2.79	2.62	1.28	0.73
R3-020920-03-JF/ 008TCL1865	776	NAF5083A	HNN9012A	Mic 2.5cm	None	None	3.00	2.72	2.18	**1.20**
R3-020920-04-JF/ 008TCL1865	794	NAF5083A	HNN9012A	Mic 2.5cm	None	None	3.12	2.76	2.04	1.11

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 averaged S.A.R. value is determined by scaling the measured S.A.R. to account for power leveling variations and power output slump below the reported maximum power during the S.A.R. measurements. For this device the Maximum Calculated 1-gram averaged peak S.A.R. is calculated using the following formula:

Max. Calc. 1-g Avg. SAR = (Pmax/Pint) x ((Pint/Pend) x DC % x S.A.R. meas.)
P_{max} = Maximum Power (W)
P_{int} = Initial Power (W)
P_{end} = End Power (W)
$SAR_{meas.}$ = Measured 1 gram averaged peak S.A.R. (mW/g)
DC % = Transmission mode duty cycle in % where applicable

Highest Max. Calc. 1-g Avg. SAR = (3.0/2.96) x ((2.96/2.66) x 0.50 x 6.42) = 3.62 mW/g

8.0 Conclusion

The highest Operational Maximum Calculated 1-gram average S.A.R. values found for FCC ID: ABZ99FT5000

At the abdomen: 3.62 mW/g
At the Face: 1.20 mW/g
At the Head: N/A
The previous results on file at the FCC were 5.32 mW/g at the abdomen and 1.54mW/g at the face. These test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of **8.0 mW/g** per the requirements of 47 CFR 2.1093(d)