



<u>Date(s) of Evaluation</u> 10/17-21, 12/07, 2011	<u>Test Report Serial No.</u> 092811OWD-T1126-S90V	<u>Test Report Revision No.</u> Rev. 1.5
<u>Test Report Issue Date</u> July 28, 2016	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)



DECLARATION OF COMPLIANCE		SAR RF EXPOSURE EVALUATION			FCC & IC	
Test Lab Information	Name	CELLTECH LABS INC.				
	Address	21-364 Lougheed Road, Kelowna, B.C. V1X 7R8 Canada				
Test Lab Accreditation(s)	A2LA	ISO/IEC 17025:2005 (A2LA Test Lab Certificate No. 2470.01)				
Applicant Information	Name	HARRIS CORPORATION				
	Address	221 Jefferson Ridge Parkway, Lynchburg, VA 24501 U.S.A.				
Standard(s) Applied	FCC	47 CFR §2.1093	IC	Health Canada Safety Code 6		
	FCC	OET Bulletin 65, Supplement C	FCC	KDB 447498 D01v05		
Procedure(s) Applied	FCC	KDB 643646 D01v01r01 (SAR Test Reduction Considerations for Occ. PTT Radios)				
	IC	RSS-102 Issue 5	IEEE	1528-2013	IEC	62209-2:2010
Device Classification(s)	FCC	Licensed Non-Broadcast Transmitter Held to Face (TNF) - FCC Part 90				
	IC	Land Mobile Radio Transmitter/Receiver (27.41-960 MHz) - RSS-119				
Device Identifier(s)	FCC ID:	OWDTR-0139-E	Application Type	FCC TCB Certification		
	IC:	3636B-0139	Application Type	IC CB Certification		
Date of Sample Receipt	Sep. 28, 2011		Dates of Evaluation	Oct. 17-21, Dec. 07, 2011		
Device Description	Portable VHF Digital Push-To-Talk (PTT) Radio Transceiver (with 1 mW Bluetooth)					
Device Model(s)	XG-25P VHF	Model Number: DPXG-PFV1B-e1		SYSTEM	With DTMF	
		Model Number: DPXG-PBV1B-e1		SCAN	Without DTMF	
Device Model(s) Tested	XG-25P VHF (SYSTEM)		S/N: TMS2 No.19 (Identical Prototype)			
	XG-25P VHF (SCAN)		S/N: TMS2 No.26 (Identical Prototype)			
Test Sample Revision No.s	Hardware	Revision -		Firmware	P12DJM	
Transmit Frequency Range(s)	FCC	150.8 - 173.4 MHz		IC	138.0-144.0, 150.8-173.4 MHz	
Manufacturer's Rated Output Power	5 Watts Nominal Rated (Conducted)		Upper Tolerance Spec.		+ 0.35 Watts	
	BlueTooth		2402-2480MHz		0.0011Watts	
Antenna Type(s) Tested	(1) Helical Coil	P/N: KRE 101 1219/1		Gain Spec.: 0 dBi	136-151 MHz	
	(2) Helical Coil	P/N: KRE 101 1219/2		Gain Spec.: 0 dBi	150-162 MHz	
	(3) Helical Coil	P/N: KRE 101 1219/3		Gain Spec.: 0 dBi	162-174 MHz	
	(4) Helical Coil	P/N: KRE 101 1219/21		Gain Spec.: 0 dBi	150-174 MHz	
Battery Type(s) Tested	Ni-MH	Immersible, non-IS		7.5V, 2400 mAh	BT-023406-003	
	Ni-MH	Immersible, <IS>		7.5V, 2400 mAh	BT-023406-004	
	Li-Ion	Immersible, non-IS		7.4V, 2000 mAh	BT-023406-005	
	Lithium-Polymer	Immersible, non-IS		7.4V, 3600 mAh	BT-023436-001	
Body-worn Accessories Tested	See manufacturer's accessory listing (Section 7.0)					
Audio Accessories Tested	See manufacturer's accessory listing (Section 7.0)					
Max. SAR Level(s) Evaluated	Face-held	0.78 W/kg	1g	50% PTT duty factor	Occupational / Controlled Exp.	
	Body-worn	5.70 W/kg	1g	50% PTT duty factor	Occupational / Controlled Exp.	
FCC/IC Spatial Peak SAR Limit	Head/Body	8.0 W/kg	1g	50% PTT duty factor	Occupational / Controlled Exp.	
Celltech Labs Inc. declares under its sole responsibility that this wireless portable device has demonstrated compliance with the Specific Absorption Rate (SAR) RF exposure requirements specified in FCC 47 CFR §2.1093 and Health Canada Safety Code 6 for the Occupational / Controlled Exposure environment. The device was tested in accordance with the measurement procedures specified in FCC OET Bulletin 65, Supplement C (Edition 01-01), Industry Canada RSS-102 Issue 5, IEEE Standard 1528-2013 and IEC International Standard 62209-2:2010. All measurements were performed in accordance with the SAR system manufacturer recommendations.						
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The results and statements contained in this report pertain only to the device(s) evaluated.						
Test Report Approved By			Art Voss	Lab Manager	Celltech Labs Inc.	

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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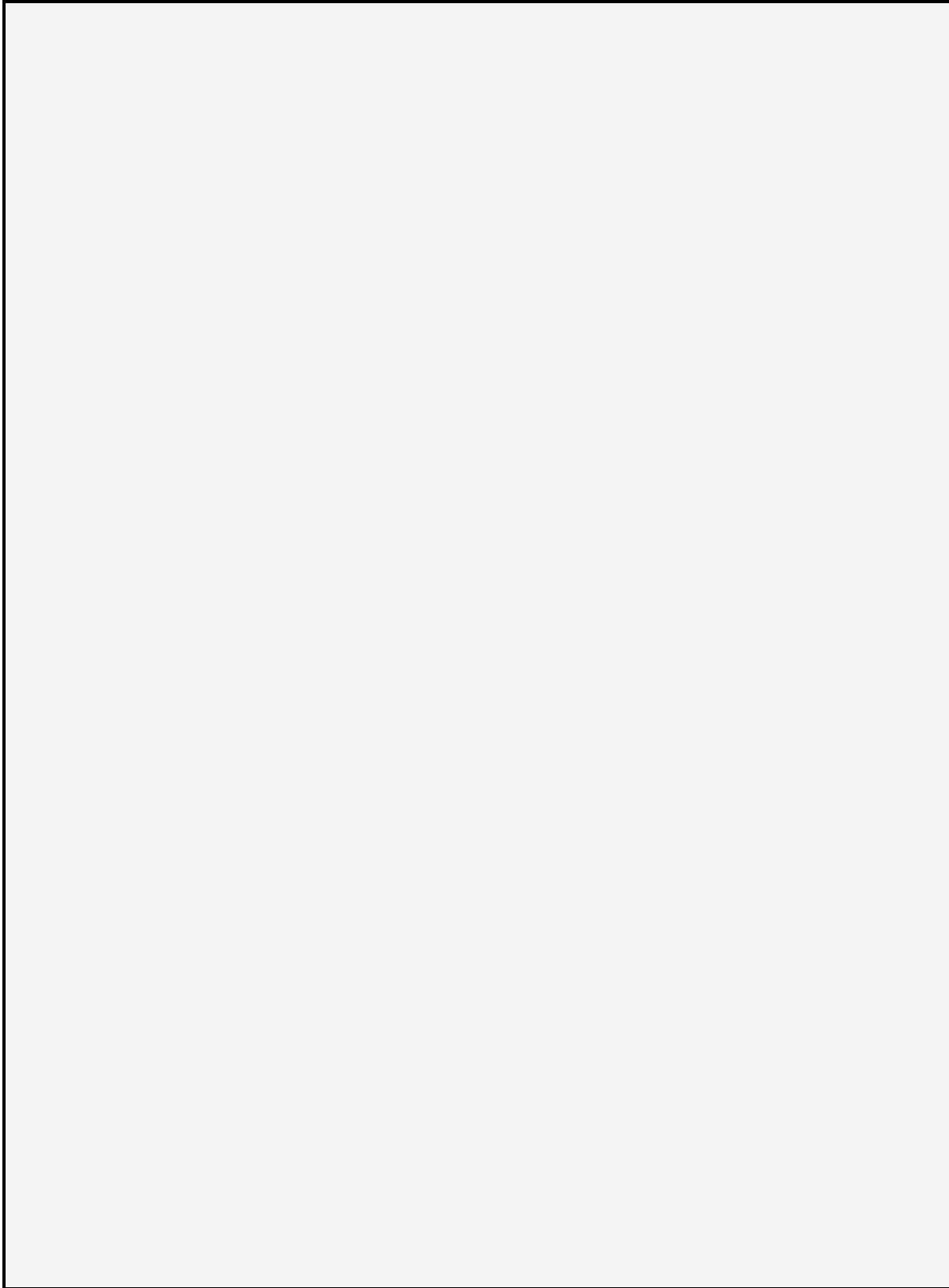
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	Test Report Issue Date July 28, 2016	Description of Test(s) Specific Absorption Rate	RF Exposure Category Occupational (Controlled)	


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Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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REVISION HISTORY			
REVISION NO.	DESCRIPTION	IMPLEMENTED BY	RELEASE DATE
1.0	1st Release	Jon Hughes	November 10, 2011
1.1	2nd Release	Jon Hughes	December 14, 2011
	Added SAR data for Leather Belt-Loop & Swivel Mount accessory (Section 11.0 & Appendix A)		
	Added Leather Belt-Loop & Swivel Mount accessory to Body-worn accessory listing (Section 7.0)		
1.2	Reissue for C2PC, corrected FCC/IC IDs, updated reference standards revision	Art Voss	July 13, 2016
1.3	Corrections to IC ID numbers, Section 1 and footers	Art Voss	July 15, 2016
1.4	Corrected Model Numbers	Art Voss	July 18, 2016
1.5	Included simultaneous transmission data	Art Voss	July 28, 2016

TEST REPORT SIGN-OFF				
REVISION	DEVICE TESTED BY	REPORT PREPARED BY	QA REVIEW BY	REPORT APPROVED BY
1.0,1.1	Mike Meaker	Mike Meaker	Jon Hughes	Sean Johnston
1.2 – 1.5	n/a	Art Voss	Ben Hewson	Art Voss

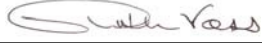
Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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1.0 INTRODUCTION

This measurement report demonstrates that the HARRIS Corporation Model: XG-25P VHF (DPXG-PFV1B-e1 and DPXG-PBV1B-e1) Portable VHF PTT Radio Transceiver complies with the SAR (Specific Absorption Rate) RF exposure requirements specified in FCC 47 CFR §2.1093 (see reference [1]) and Health Canada's Safety Code 6 (see reference [2]) for the Occupational / Controlled Exposure environment. The measurement procedures described in FCC OET Bulletin 65, Supplement C 01-01 (see reference [3]), IC RSS-102 Issue 5 (see reference [4]), IEEE Standard 1528-2013 (see reference [5]), IEC 62209-1:2005 (see reference [6]) and IEC 62209-2:2010 (see reference [7]) were employed. A description of the device, operating configuration, detailed summary of the test results, methodology and procedures used in the evaluation, equipment used and the various provisions of the rules are included within this test report.


I have reviewed the changes proposed for this new filing and have determined that these changes will not impact the SAR magnitude or distribution indicated on the original report Revision 1.1 for the original FCC ID: OWDTR-0072-E. The replacement Bluetooth module exhibits a lower output power than the original device and is in the same physical location. This report reflects test data and measurement procedures dated October 2011. Although there have been newer releases of the test standards used during the original evaluation, I have reviewed those changes in those standards and have determined that those changes would not impact the measurement procedures or the SAR results obtained during the evaluation. As such, the latest releases of those standards have been cited in this report.



<p>I attest that the data reported herein is true and accurate within the tolerance of the Measurement Instrument Uncertainty; that all tests and measurements were performed in accordance with accepted practices or procedures. The results of this investigation are based solely on the test sample(s) provided by the client which were not adjusted, modified or altered in any manner whatsoever, except as required to carry out specific tests or measurements. This test report has been completed in accordance with ISO/IEC 17025.</p>	 <hr/> Art Voss, P.Eng. Technical Manager Celltech Labs Inc. <hr/> 18 July 2016 <hr/> Date
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2.0 SAR MEASUREMENT SYSTEM

Celltech Labs Inc. SAR measurement facility utilizes the Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY4 measurement system is comprised of the measurement server, robot controller, computer, near-field probe, probe alignment sensor, specific anthropomorphic mannequin (SAM) phantom, and various planar phantoms for head and/or body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller, teach pendant (Joystick), and remote control, is used to drive the robot motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical into digital electric signal of the DAE and transfers data to the DASY4 measurement server. The DAE4 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter and a command decoder and control logic unit. Transmission to the DASY4 measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot uses a controller with a built in VME-bus computer.

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3.0 RF CONDUCTED OUTPUT POWER MEASUREMENTS



MEASURED RF CONDUCTED OUTPUT POWER LEVELS

Band	Radio	Test Freq.	Mode	dBm	Watts	Method
IC	System	138.0 MHz	CW	37.1	5.08	Average Conducted
IC	System	144.0 MHz	CW	37.2	5.20	Average Conducted
FCC/IC	System	150.8 MHz	CW	37.1	5.17	Average Conducted
FCC/IC	System	156.4 MHz	CW	37.1	5.08	Average Conducted
FCC/IC	System	158.3 MHz	CW	37.1	5.13	Average Conducted
FCC/IC	System	162.0 MHz	CW	37.1	5.13	Average Conducted
FCC/IC	System	165.9 MHz	CW	37.1	5.09	Average Conducted
FCC/IC	System	167.7 MHz	CW	37.1	5.08	Average Conducted
FCC/IC	System	173.4 MHz	CW	37.1	5.17	Average Conducted

Notes

- The test channels were selected in accordance with the procedures specified in FCC KDB 447498 Section 6) c) (see reference [8]).
- The RF conducted output power levels of the DUT were measured by Celltech prior to the SAR evaluations using a Gigatronics 8652A Universal Power Meter at the external antenna connector of the radio in accordance with FCC 47 CFR §2.1046 (see reference [14]) and IC RSS-Gen (see reference [15]).

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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4.0 FCC POWER THRESHOLDS FOR PTT DEVICES ($f \leq 0.5$ GHz)

FCC SAR Evaluation Power Thresholds for PTT Devices, $f \leq 0.5$ GHz*		
Exposure Conditions	P mW (General Population)	P mW (Occupational)
Held to face, $d \geq 2.5$ cm	250	1250
Body-worn, $d \geq 1.5$ cm	200	1000
Body-worn, $d \geq 1.0$ cm	150	750

1. The time-averaged output power, corresponding to the required PTT duty factor, is compared with these thresholds.
2. The closest distance between the user and the device or its antenna is used to determine the power thresholds.
* Per FCC KDB 447498 D01v05 Section 5)b)i) (see reference [8]).

5.0 SAR PROBE CALIBRATION & MEASUREMENT FREQUENCIES

The following procedures are recommended for measurements at 150 MHz - 3 GHz to minimize probe calibration and tissue dielectric parameter discrepancies. In general, SAR measurements below 300 MHz should be within ± 50 MHz of the probe calibration frequency. At 300 MHz to 3 GHz, measurements should be within ± 100 MHz of the probe calibration frequency. Measurements exceeding 50% of these intervals, ± 25 MHz < 300 MHz and ± 50 MHz ≥ 300 MHz, require additional steps (per FCC KDB 450824 D01 v01r01, SAR Probe Calibration and System Verification Considerations for Measurements at 150 MHz - 3 GHz - see reference [10]).


Probe Calibration Freq.	Device Measurement Freq.	Frequency Interval	± 25 MHz ≤ 300 MHz
150 MHz	138.0 MHz	12 MHz	< 25 MHz
	144.0 MHz	6 MHz	< 25 MHz
	150.8 MHz	0.8 MHz	< 25 MHz
	156.4 MHz	6.4 MHz	< 25 MHz
	158.3 MHz	8.3 MHz	< 25 MHz
	162.0 MHz	12 MHz	< 25 MHz
	165.9 MHz	15.9 MHz	< 25 MHz
	167.7 MHz	17.7 MHz	< 25 MHz
	173.4 MHz	23.4 MHz	< 25 MHz



Note: The probe calibration and measurement frequency interval is < 25 MHz; therefore additional steps were not required.

6.0 NO. OF TEST CHANNELS (N_c)

Antenna Part No.	Antenna Type	Antenna Freq. Range	Band	N_c	Test Frequencies (MHz)
(1) KRE 101 1219/1	Helical Coil	136 - 151 MHz	IC	2	138.0, 144.0
(2) KRE 101 1219/2	Helical Coil	150 - 162 MHz	FCC/IC	3	150.8, 156.4, 162.0
(3) KRE 101 1219/3	Helical Coil	162 - 174 MHz	FCC/IC	3	162.0, 167.7, 173.4
(4) KRE 101 1219/21	Helical Coil	150 - 174 MHz	FCC/IC	4	150.8, 158.3, 165.9, 173.4


Note: The number of test channels (N_c) were calculated in accordance with the procedures specified in FCC KDB 447498 Section 6) c) (see reference [8]).



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7.0 MANUFACTURER'S DISCLOSED ACCESSORY LISTING

Accessory ID # for Test Report	ACCESSORY CATEGORY: ANTENNA		
	Part Number	Description	SAR Evaluation
1	KRE 101 1219/1	Helical Coil (136-151 MHz)	Yes
2	KRE 101 1219/2	Helical Coil (150-162 MHz)	Yes
3	KRE 101 1219/3	Helical Coil (162-174 MHz)	Yes
4	KRE 101 1219/21	Helical Coil (150-174 MHz)	Yes
Accessory ID # for Test Report	ACCESSORY CATEGORY: BATTERY		
	Part Number	Description	SAR Evaluation
a	BT-023406-003	Ni-MH, immersible, non-IS (7.5V, 2400mAh)	Yes
b	BT-023406-004	Ni-MH, immersible, <IS> (7.5V, 2400mAh)	Yes
c	BT-023406-005	Li-Ion, immersible, non-IS (7.4V, 2000mAh)	Yes
d	BT-023436-001	Lithium-Polymer, non-IS (7.4V, 3600mAh)	Yes
e	BT-023406-103	Ni-MH, immersible, Goldpeak cells, non-IS (7.5V, 2400mAh)	No ¹
Accessory ID # for Test Report	ACCESSORY CATEGORY: BODY-WORN		
	Part Number	Description	SAR Evaluation
1	14011-0012-01	Kit containing: 14011-0011-01 P7300/XG-75/XG-25 BEE Nylon case (Black) (with radio retaining strap) & CC-014527 BEE Leather Belt Loop	Yes
2	14011-0012-02	Kit containing: 14011-0011-02 P7300/XG-75/XG-25 BEE Nylon case (Orange) (with radio retaining strap) & CC-014527 BEE Leather Belt Loop	No ²
3	14011-0012-03	Kit contains: 14011-0011-03 P7300/XG-75/XG-25 BEE Leather Case (with radio retaining strap) w/o Shoulder Strap D-rings,, KRY1011608/2 Swivel Mount & CC-014527 BEE Leather Belt Loop	Yes
4	14011-0012-04	Kit contains: 14011-0011-04 P7300/XG-75/XG-25 BEE Leather Case with Shoulder Strap D-rings (with radio retaining strap), KRY1011608/2 Swivel Mount & CC-014524-001 BEE Shoulder Strap	Yes
5	CC23894	Metal Belt Clip	Yes
6	FM-017262-001 CC-014527	Swivel Mount Belt Loop, Leather (BEE)	Yes


Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
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Accessory ID # for Test Report	ACCESSORY CATEGORY: AUDIO			
	Part Number	Description	Audio Accessory Grouping	SAR Evaluation
G7a	MC-023933-001	Speaker-Mic, No Ant. (cc), <IS>	Group 7	Yes
G7b	MC-009104-002	Speaker-Mic, GPS, non-IS	Group 7	No ⁴
n/a	LS103239V1	Earphone for speaker-mic <IS>	n/a (acc. to Group 7)	Yes
G7c	MC-011617-601	Ruggedized Speaker Mic-Coil Cord	Group 7	No ⁴
G7d	MC-011617-701	Standard Speaker Mic - Non Ant	Group 7	No ⁴
G12a	EA-009580-001	Earphone Kit, Black	Group 12	Yes
G12b	EA-009580-002	Earphone Kit, Beige	Group 12	No ³
G8a	EA-009580-003	2-Wire Kit, Palm mic, Black	Group 8	Yes
G8b	EA-009580-004	2-Wire Kit, Palm mic, Beige	Group 8	No ³
G9a	EA-009580-005	3-Wire Kit, Mini-Lapel Mic, Black	Group 9	Yes
G9b	EA-009580-006	3-Wire Kit, Mini-Lapel Mic, Beige	Group 9	No ³
G4	EA-009580-007	Explorer Headset w/ PTT	Group 4	Yes
G2	EA-009580-008	Lightweight headset single spkr w/ PTT	Group 2	Yes
G3a	EA-009580-009	Breeze Headset w/ PTT	Group 3	No ⁴
G1a	EA-009580-010	Headset, heavy duty, N/C behind the head, w/ PTT	Group 1	Yes
G5	EA-009580-011	Ranger Headset w/ PTT	Group 5	Yes
G10	EA-009580-012	Skull mic w/body PTT & earcup	Group 10	Yes
G1b	EA-009580-013	Headset, heavy duty, N/C over the head, w/ PTT	Group 1	No ⁴
G11a	EA-009580-014	Throat mic w/acoustic tube & body PTT	Group 11	No ⁴
G11b	EA-009580-015	Throat mic w/acoustic tube, body PTT, & ring PTT	Group 11	Yes
G3b	EA-009580-016	Breeze headset w/ PTT & pigtail jack	Group 3	Yes
G6a	EA-009580-017	Hurricane headset w/ PTT	Group 6	No ⁴
G6b	EA-009580-018	Hurricane headset w/ PTT & pigtail jack	Group 6	Yes

Manufacturer's disclosed accessory listing information provided by HARRIS Corporation

Footnotes
1. Goldpeak cells are the same physical form factor as the Sanyo cells used in battery "a".
2. The orange nylon case is identical to body-worn accessory #1 except for color difference only.
3. Audio accessories #G8b, #G9b and #G12b are identical to audio accessories #G8a, #G9a and #G12a respectively except for color difference only.
4. Audio accessories not evaluated for SAR in accordance with the procedures and provisions of FCC KDB 643646 D01v01r01 Page 10 Section 1).

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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8.0 FLUID DIELECTRIC PARAMETERS

FLUID DIELECTRIC PARAMETERS						
Date: 10/17/2011		Frequency: 300 MHz			Tissue: Head	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.200	51.25	0.75	45.3	0.87	13.13%	-13.79%
0.210	50.19	0.75	45.3	0.87	10.79%	-13.79%
0.220	49.44	0.76	45.3	0.87	9.14%	-12.64%
0.230	48.49	0.77	45.3	0.87	7.04%	-11.49%
0.240	48.47	0.78	45.3	0.87	7.00%	-10.34%
0.250	47.97	0.79	45.3	0.87	5.89%	-9.20%
0.260	47.42	0.8	45.3	0.87	4.68%	-8.05%
0.270	47.72	0.8	45.3	0.87	5.34%	-8.05%
0.280	47.15	0.81	45.3	0.87	4.08%	-6.90%
0.290	46.47	0.82	45.3	0.87	2.58%	-5.75%
0.300	45.94	0.84	45.3	0.87	1.41%	-3.45%
0.310	45.27	0.83	45.3	0.87	-0.07%	-4.60%
0.320	45.04	0.86	45.3	0.87	-0.57%	-1.15%
0.330	45.11	0.86	45.3	0.87	-0.42%	-1.15%
0.340	44.41	0.87	45.3	0.87	-1.96%	0.00%
0.350	42.9	0.87	45.3	0.87	-5.30%	0.00%
0.360	43.5	0.89	45.3	0.87	-3.97%	2.30%
0.370	43.19	0.88	45.3	0.87	-4.66%	1.15%
0.380	43.18	0.9	45.3	0.87	-4.68%	3.45%
0.390	42.56	0.91	45.3	0.87	-6.05%	4.60%
0.400	42.82	0.9	45.3	0.87	-5.47%	3.45%

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Oct 17	300 Head	22.0°C	21.5°C	≥ 15 cm	101.1 kPa	32%	1000

FLUID DIELECTRIC PARAMETERS						
Date: 10/18/2011		Frequency: 150 MHz			Tissue: Head	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.050	91.06	0.63	52.3	0.76	74.11%	-17.11%
0.060	69.65	0.66	52.3	0.76	33.17%	-13.16%
0.070	74.44	0.7	52.3	0.76	42.33%	-7.89%
0.080	74.58	0.67	52.3	0.76	42.60%	-11.84%
0.090	57.88	0.68	52.3	0.76	10.67%	-10.53%
0.100	62.96	0.69	52.3	0.76	20.38%	-9.21%
0.110	57.37	0.71	52.3	0.76	9.69%	-6.58%
0.120	58.79	0.71	52.3	0.76	12.41%	-6.58%
0.130	56.24	0.73	52.3	0.76	7.53%	-3.95%
0.140	53.55	0.73	52.3	0.76	2.39%	-3.95%
0.144*	53	0.742	52.3	0.76	1.34%	-2.37%
0.150	52.14	0.76	52.3	0.76	-0.31%	0.00%
0.1508*	52.3	0.761	52.3	0.76	0.00%	0.13%
0.160	54.36	0.77	52.3	0.76	3.94%	1.32%
0.170	51.78	0.77	52.3	0.76	-0.99%	1.32%
0.1734*	52.3	0.773	52.3	0.76	0.00%	1.71%
0.180	53.27	0.78	52.3	0.76	1.85%	2.63%
0.190	52.63	0.78	52.3	0.76	0.63%	2.63%
0.200	51.47	0.79	52.3	0.76	-1.59%	3.95%
0.210	50.97	0.79	52.3	0.76	-2.54%	3.95%
0.220	49.56	0.8	52.3	0.76	-5.24%	5.26%
0.230	49	0.81	52.3	0.76	-6.31%	6.58%
0.240	50.31	0.81	52.3	0.76	-3.80%	6.58%
0.250	49.31	0.83	52.3	0.76	-5.72%	9.21%

*interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Oct 18	150 Head	22.0°C	21.6°C	≥ 15 cm	101.1 kPa	35%	1000

FLUID DIELECTRIC PARAMETERS						
Date: 10/19/2011		Frequency: 150 MHz			Tissue: Body	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.050	125.42	0.71	61.9	0.8	102.62%	-11.25%
0.060	87.77	0.71	61.9	0.8	41.79%	-11.25%
0.070	76.92	0.7	61.9	0.8	24.26%	-12.50%
0.080	81.16	0.72	61.9	0.8	31.11%	-10.00%
0.090	72.85	0.73	61.9	0.8	17.69%	-8.75%
0.100	70.22	0.75	61.9	0.8	13.44%	-6.25%
0.110	65.44	0.74	61.9	0.8	5.72%	-7.50%
0.120	68.68	0.77	61.9	0.8	10.95%	-3.75%
0.130	63.63	0.76	61.9	0.8	2.79%	-5.00%
0.140	63.6	0.77	61.9	0.8	2.75%	-3.75%
0.144*	63.7	0.77	61.9	0.8	2.91%	-3.75%
0.150	63.77	0.77	61.9	0.8	3.02%	-3.75%
0.1508*	63.6	0.77	61.9	0.8	2.75%	-3.75%
0.1564*	62.7	0.77	61.9	0.8	1.29%	-3.75%
0.160	62.09	0.77	61.9	0.8	0.31%	-3.75%
0.170	61.92	0.78	61.9	0.8	0.03%	-2.50%
0.1734*	62	0.783	61.9	0.8	0.16%	-2.13%
0.180	62.29	0.79	61.9	0.8	0.63%	-1.25%
0.190	63.28	0.79	61.9	0.8	2.23%	-1.25%
0.200	63.82	0.81	61.9	0.8	3.10%	1.25%
0.210	61.18	0.81	61.9	0.8	-1.16%	1.25%
0.220	61.46	0.81	61.9	0.8	-0.71%	1.25%
0.230	60.67	0.82	61.9	0.8	-1.99%	2.50%
0.240	59.76	0.82	61.9	0.8	-3.46%	2.50%
0.250	60.54	0.84	61.9	0.8	-2.20%	5.00%

*interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Oct 19	150 Body	22.0°C	21.0°C	≥ 15 cm	101.1 kPa	32%	1000

FLUID DIELECTRIC PARAMETERS						
Date: 10/20/2011		Frequency: 300 MHz			Tissue: Head	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.200	50.79	0.77	45.3	0.87	12.12%	-11.49%
0.210	50.44	0.79	45.3	0.87	11.35%	-9.20%
0.220	49.14	0.81	45.3	0.87	8.48%	-6.90%
0.230	48.62	0.81	45.3	0.87	7.33%	-6.90%
0.240	48.15	0.81	45.3	0.87	6.29%	-6.90%
0.250	46.35	0.82	45.3	0.87	2.32%	-5.75%
0.260	47.3	0.85	45.3	0.87	4.42%	-2.30%
0.270	48.42	0.84	45.3	0.87	6.89%	-3.45%
0.280	46.4	0.85	45.3	0.87	2.43%	-2.30%
0.290	46.79	0.85	45.3	0.87	3.29%	-2.30%
0.300	46.26	0.88	45.3	0.87	2.12%	1.15%
0.310	46.31	0.87	45.3	0.87	2.23%	0.00%
0.320	46.1	0.88	45.3	0.87	1.77%	1.15%
0.330	45.69	0.89	45.3	0.87	0.86%	2.30%
0.340	45.03	0.89	45.3	0.87	-0.60%	2.30%
0.350	43.55	0.9	45.3	0.87	-3.86%	3.45%
0.360	43.92	0.91	45.3	0.87	-3.05%	4.60%
0.370	43.91	0.93	45.3	0.87	-3.07%	6.90%
0.380	42.88	0.92	45.3	0.87	-5.34%	5.75%
0.390	43.3	0.94	45.3	0.87	-4.42%	8.05%
0.400	43.83	0.94	45.3	0.87	-3.25%	8.05%

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Oct 20	300 Head	22.0°C	22.0°C	≥ 15 cm	101.1 kPa	32%	1000

FLUID DIELECTRIC PARAMETERS						
Date: 10/20/2011		Frequency: 150 MHz			Tissue: Body	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.050	65.29	0.76	61.9	0.8	5.48%	-5.00%
0.060	85.62	0.74	61.9	0.8	38.32%	-7.50%
0.070	77.61	0.74	61.9	0.8	25.38%	-7.50%
0.080	72.04	0.73	61.9	0.8	16.38%	-8.75%
0.090	68.62	0.73	61.9	0.8	10.86%	-8.75%
0.100	67.53	0.76	61.9	0.8	9.10%	-5.00%
0.110	66.53	0.76	61.9	0.8	7.48%	-5.00%
0.120	63.82	0.79	61.9	0.8	3.10%	-1.25%
0.130	62.91	0.79	61.9	0.8	1.63%	-1.25%
0.140	64.78	0.79	61.9	0.8	4.65%	-1.25%
0.144*	64.5	0.79	61.9	0.8	4.20%	-1.25%
0.150	64.02	0.79	61.9	0.8	3.42%	-1.25%
0.1508*	63.9	0.788	61.9	0.8	3.23%	-1.50%
0.160	62.95	0.77	61.9	0.8	1.70%	-3.75%
0.170	62.89	0.79	61.9	0.8	1.60%	-1.25%
0.1734*	63.2	0.793	61.9	0.8	2.10%	-0.88%
0.180	63.66	0.8	61.9	0.8	2.84%	0.00%
0.190	60.76	0.81	61.9	0.8	-1.84%	1.25%
0.200	61.48	0.81	61.9	0.8	-0.68%	1.25%
0.210	61.27	0.82	61.9	0.8	-1.02%	2.50%
0.220	61.58	0.82	61.9	0.8	-0.52%	2.50%
0.230	61.26	0.84	61.9	0.8	-1.03%	5.00%
0.240	60.12	0.84	61.9	0.8	-2.88%	5.00%
0.250	61.53	0.85	61.9	0.8	-0.60%	6.25%

*interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Oct 20	150 Body	22.0°C	21.6°C	≥ 15 cm	101.1 kPa	32%	1000

FLUID DIELECTRIC PARAMETERS						
Date: 10/21/2011		Frequency: 150 MHz			Tissue: Body	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.050	82.48	0.71	61.9	0.8	33.25%	-11.25%
0.060	78.31	0.71	61.9	0.8	26.51%	-11.25%
0.070	87.36	0.72	61.9	0.8	41.13%	-10.00%
0.080	71.84	0.73	61.9	0.8	16.06%	-8.75%
0.090	77.2	0.74	61.9	0.8	24.72%	-7.50%
0.100	69.25	0.75	61.9	0.8	11.87%	-6.25%
0.110	67.22	0.76	61.9	0.8	8.59%	-5.00%
0.120	63.08	0.75	61.9	0.8	1.91%	-6.25%
0.130	64.18	0.76	61.9	0.8	3.68%	-5.00%
0.140	61.66	0.76	61.9	0.8	-0.39%	-5.00%
0.144*	62.6	0.76	61.9	0.8	1.13%	-5.00%
0.150	64.05	0.76	61.9	0.8	3.47%	-5.00%
0.1508*	64	0.762	61.9	0.8	3.39%	-4.75%
0.160	62.86	0.78	61.9	0.8	1.55%	-2.50%
0.170	63.45	0.76	61.9	0.8	2.50%	-5.00%
0.1734*	63	0.767	61.9	0.8	1.78%	-4.13%
0.180	62.22	0.78	61.9	0.8	0.52%	-2.50%
0.190	61.2	0.78	61.9	0.8	-1.13%	-2.50%
0.200	61.35	0.81	61.9	0.8	-0.89%	1.25%
0.210	60.92	0.81	61.9	0.8	-1.58%	1.25%
0.220	62.98	0.8	61.9	0.8	1.74%	0.00%
0.230	61.03	0.82	61.9	0.8	-1.41%	2.50%
0.240	59.8	0.84	61.9	0.8	-3.39%	5.00%
0.250	60.95	0.82	61.9	0.8	-1.53%	2.50%

*interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Oct 21	150 Body	22.0°C	21.4°C	≥ 15 cm	101.1 kPa	32%	1000



FLUID DIELECTRIC PARAMETERS						
Date: 12/7/2011		Frequency: 300 MHz			Tissue: Head	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.200	50.59	0.76	45.3	0.87	11.68%	-12.64%
0.210	51.68	0.79	45.3	0.87	14.08%	-9.20%
0.220	49.4	0.79	45.3	0.87	9.05%	-9.20%
0.230	49.61	0.81	45.3	0.87	9.51%	-6.90%
0.240	49.15	0.81	45.3	0.87	8.50%	-6.90%
0.250	48.12	0.83	45.3	0.87	6.23%	-4.60%
0.260	48.02	0.83	45.3	0.87	6.00%	-4.60%
0.270	47.09	0.84	45.3	0.87	3.95%	-3.45%
0.280	47.3	0.87	45.3	0.87	4.42%	0.00%
0.290	46.3	0.87	45.3	0.87	2.21%	0.00%
0.300	45.9	0.86	45.3	0.87	1.32%	-1.15%
0.310	46.51	0.88	45.3	0.87	2.67%	1.15%
0.320	45.77	0.89	45.3	0.87	1.04%	2.30%
0.330	46.16	0.89	45.3	0.87	1.90%	2.30%
0.340	44.97	0.91	45.3	0.87	-0.73%	4.60%
0.350	44.65	0.91	45.3	0.87	-1.43%	4.60%
0.360	44.39	0.92	45.3	0.87	-2.01%	5.75%
0.370	43.64	0.93	45.3	0.87	-3.66%	6.90%
0.380	43.92	0.92	45.3	0.87	-3.05%	5.75%
0.390	44.28	0.94	45.3	0.87	-2.25%	8.05%
0.400	43.44	0.96	45.3	0.87	-4.11%	10.34%

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Dec 7	300 Head	22.0°C	20.2°C	≥ 15 cm	101.1 kPa	30%	1000

FLUID DIELECTRIC PARAMETERS						
Date: 12/7/2011		Frequency: 150 MHz			Tissue: Body	
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.050	115.9	0.71	61.9	0.8	87.24%	-11.25%
0.060	93.63	0.72	61.9	0.8	51.26%	-10.00%
0.070	87.46	0.71	61.9	0.8	41.29%	-11.25%
0.080	75.62	0.76	61.9	0.8	22.16%	-5.00%
0.090	72.31	0.75	61.9	0.8	16.82%	-6.25%
0.100	71.69	0.75	61.9	0.8	15.82%	-6.25%
0.110	65.61	0.76	61.9	0.8	5.99%	-5.00%
0.120	69.25	0.79	61.9	0.8	11.87%	-1.25%
0.130	62.16	0.78	61.9	0.8	0.42%	-2.50%
0.140	64.29	0.8	61.9	0.8	3.86%	0.00%
0.144*	63.8	0.788	61.9	0.8	3.07%	-1.50%
0.150	63.18	0.77	61.9	0.8	2.07%	-3.75%
0.1508*	63.2	0.772	61.9	0.8	2.10%	-3.50%
0.160	63.95	0.8	61.9	0.8	3.31%	0.00%
0.170	62.42	0.81	61.9	0.8	0.84%	1.25%
0.1734*	62.4	0.81	61.9	0.8	0.81%	1.25%
0.180	62.39	0.81	61.9	0.8	0.79%	1.25%
0.190	61.53	0.81	61.9	0.8	-0.60%	1.25%
0.200	62.13	0.82	61.9	0.8	0.37%	2.50%
0.210	60.42	0.81	61.9	0.8	-2.39%	1.25%
0.220	61.98	0.83	61.9	0.8	0.13%	3.75%
0.230	60.31	0.83	61.9	0.8	-2.57%	3.75%
0.240	61.08	0.85	61.9	0.8	-1.32%	6.25%
0.250	59.88	0.84	61.9	0.8	-3.26%	5.00%


*interpolated using DASY4 software



Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Dec 7	150 Body	22.0°C	22.4°C	≥ 15 cm	101.1 kPa	30%	1000

	<u>Date(s) of Evaluation</u> 10/17-21, 12/07, 2011	<u>Test Report Serial No.</u> 092811OWD-T1126-S90V	<u>Test Report Revision No.</u> Rev. 1.5	 Test Lab Certificate No. 2470.01
	<u>Test Report Issue Date</u> July 28, 2016	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

9.0 SAR TEST REDUCTION PROCEDURES - SYSTEM MODEL (FCC KDB 643646)

- a. Face-held Configuration - Default Battery Selection - per FCC KDB 643646, Page 2, Section 1) A): *"When multiple standard batteries are supplied with a radio, the battery with the highest capacity is considered the default battery for making head SAR measurements."*
- b. Body-worn Configuration - Default Battery Selection - per FCC KDB 643646, Page 5, Section 1) A): *"Start by testing a PTT radio with the thinnest battery and a standard (default) Body-worn accessory that are both supplied with the radio and, if applicable, a default audio accessory....."*
- c. Body-worn Configuration - Default Body-worn Accessory Selection - the belt-clip was selected as the default Body-worn accessory based on the smaller separation distance it provides between the radio and the user in comparison to the remaining accessories. Per FCC KDB 643646, Page 5, Section 1) A): *"When multiple default Body-worn accessories are supplied with a radio, the standard Body-worn accessory expected to result in the highest SAR based on its construction and exposure conditions is considered the default Body-worn accessory for making Body-worn measurements."*
- d. Body-worn Configuration - Additional Body-worn Accessories - the remaining Body-worn accessories were evaluated based on the *"additional Body-worn accessory"* guidance provided in FCC KDB 643646, Page 7, Section 4). The remaining Body-worn accessories can be utilized with all the audio accessory options.
- e. Body-worn Configuration - Default Audio Accessory Selection - According to the manufacturer, the radio is not supplied to the end user with a standard default audio accessory (as referenced in FCC KDB 643646, Page 4, Section "Body SAR Test Considerations for Body-worn Accessories"); therefore the procedures described in note (j) below were applied in order to establish the default audio accessory.
- f. Body-worn Configuration - Selection of Remaining Default Audio Accessories by Category - the Remaining Default Audio Accessories by Category were selected based on the guidance provided in FCC KDB 643646, Section "Body SAR Test Considerations for Audio Accessories without Built-in Antenna", Page 10: *"For audio accessories with similar construction and operating requirements, test only the audio accessory within the group that is expected to result in the highest SAR, with respect to changes in RF characteristics and exposure conditions for the combination. If it is unclear which audio accessory within a group of similar accessories is expected to result in the highest SAR, good engineering judgment and preliminary testing should be applied to select the accessory that is expected to result in the highest SAR."* Please refer to note (i) below for the procedure implemented to establish the Default Audio Accessory by Category (Grouping). The Remaining Default Audio Accessories by Category were evaluated on the highest SAR channel and antenna combination from the Default Audio Accessory evaluations (see note e.) based on the guidance provided in FCC KDB 643646, Page 10, Section 1) A) thru D).
- g. Body-worn Configuration - Selection of Additional Audio Accessories by Category - the Additional Audio Accessories by Category were selected based on the guidance provided in FCC KDB 643646, Section "Body SAR Test Considerations for Audio Accessories without Built-in Antenna", Page 10.
- h. According to the manufacturer, all the optional audio accessories can be used with any accessory combination (antenna, battery & Body-worn accessory) - see also Appendix H (Audio Accessory Combinations). Therefore, in order to establish the overall default audio accessory and default accessory by category (grouping), preliminary SAR evaluations (area scans with belt-clip, thinnest battery and worst-case antenna configuration from face-held evaluations) were performed by Celltech with all of the optional audio accessories connected to the radio consecutively.


Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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	<u>Date(s) of Evaluation</u> 10/17-21, 12/07, 2011	<u>Test Report Serial No.</u> 092811OWD-T1126-S90V	<u>Test Report Revision No.</u> Rev. 1.5	
	<u>Test Report Issue Date</u> July 28, 2016	<u>Description of Test(s)</u> Specific Absorption Rate	<u>RF Exposure Category</u> Occupational (Controlled)	

10.0 SAR TEST REDUCTION PROCEDURES - SCAN MODEL (FCC KDB INQ. #235657)



With respect to the SAR results for the *original model*, please test the SAR for *additional models* according to the following where reported and measured should mean the SAR results at 50% duty factor before further scaling or compensation.

1. For face exposure, *additional models* should be measured for each of the antennas using the highest SAR configuration reported among the battery configurations for the *base model*; i.e., one SAR per antenna for each additional model.
2. For body-worn accessories with the default audio accessory, *additional models* should be measured for each of the antennas and body-worn accessories using the highest SAR configuration reported among the battery configurations for the *base model*; i.e., one SAR per antenna and body-worn accessory combination. For each of these configurations, if the measured SAR for the *additional models* is > 7.0 W/kg repeat all SAR measured for the *base model* that are > 6.0 W/kg using the *additional models*. In addition, all SAR measured for the *base model* > 7.0 W/kg must be repeated for the *additional models*.
3. For the remaining default audio accessories, all SAR measured for each combination of antenna, battery, body-worn accessory and audio accessory with the *base model* with SAR ≥ 7.0 W/kg must be repeated for the *additional models* for such combinations. When the highest SAR measured for a *base model* combination of antenna, battery, body-worn accessory and audio accessory is < 7.0 W/kg, measure SAR for the *additional models* using the highest SAR reported for each *base model* combination; i.e., at least one test per combination. However, if the highest reported SAR for a *base model* combination is < 5.0 W/kg, no test is needed for that combination. For each *additional model* combination, if the measured SAR is > 7.0 W/kg repeat all SAR measured for that combination when the reported *base model* SAR is > 6.0 W/kg.
4. For the rest of the additional (non-default) audio accessories tested for the *base model*, apply the same procedures used for the remaining default audio accessories in #3 above. A combination should be determined according to audio accessory part numbers; not by audio category.

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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11.0 SAR MEASUREMENT SUMMARY

TABLE 1				FACE-HELD SAR EVALUATION RESULTS															
Device-Under-Test				XG-25P VHF Radio Transceiver (System)															
Test Date(s)				October 18, 2011															
C				1		2		3		4		5		6		7		8	
R	Ant. Acc. ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	SAR W/kg 1g				SAR W/kg 1g				SAR W/kg 1g				SAR W/kg 1g			
				Battery (d) - Default				Battery (a) - Additional				Battery (b) - Additional				Battery (c) - Additional			
				100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f	
				Drift (dB)		50%+droop		Drift dB		50%+droop		Drift dB		50%+droop		Drift dB		50%+droop	
1	1 (IC only)	138.0	5.08	N/A				N/A				N/A							
2		144.0	5.20	F1	1.32	0.660	F5	1.24	0.620	F6	1.15	0.575	F7	1.43	0.715				
3					0.012	n/a		-0.387	0.678		-0.228	0.606		-0.113	0.734				
4	2	150.8	5.17	F2	0.404	0.202	N/A				N/A								
5					-0.104	0.207	N/A				N/A								
6		156.4	5.08	N/A				N/A				N/A							
7	162.0	5.13	N/A				N/A				N/A								
8	3	162.0	5.13	N/A				N/A				N/A							
9				167.7	5.08	N/A				N/A				N/A					
10		173.4	5.17	F3	0.206	0.103	N/A				N/A								
11	-0.384				0.113	N/A				N/A									
12	4	150.8	5.17	N/A				N/A				N/A							
13		158.3	5.13	N/A				N/A				N/A							
14		165.9	5.09	N/A				N/A				N/A							
15		173.4	5.17	F4	1.25	0.625	N/A				N/A								
16	-0.233				0.659	N/A				N/A									
SAR LIMITS				HEAD				SPATIAL PEAK				RF EXPOSURE CATEGORY							
FCC 47 CFR 2.1093		Health Canada Safety Code 6		8.0 W/kg				1 gram average				Occupational / Controlled							
Notes																			
C = Column; R = Row								Fx (F = Face) denotes the corresponding Face SAR Plot # as shown in Appendix A											
Test Mode = CW (Unmodulated Continuous Wave)								Phantom = Side Planar Phantom											
Front of DUT Distance to Planar Phantom (see Appendix D) (Front of DUT Parallel to Planar Phantom)								Shortest Antenna Distance to Planar Phantom (see Appendix D)											
								Antenna 1		Antenna 2		Antenna 3		Antenna 4					
2.5 cm								5.5 cm		5.5 cm		5.5 cm		5.5 cm					
Test Procedures in accordance with FCC KDB 643646 (see reference [9])																			
1. For face-held configuration, battery "d" was selected as the default battery (highest mAh).																			
2. When the head SAR of an antenna tested on the highest output power channel with the default battery is ≤ 3.5 W/kg, testing of all other required channels is not necessary.																			
3. When the SAR for all antennas tested using the default battery is ≤ 4.0 W/kg, test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas.																			
4. When test reduction applies, the data table entries for such configurations are denoted with N/A (Not Applicable).																			

	Date(s) of Evaluation 10/17-21, 12/07, 2011	Test Report Serial No. 092811OWD-T1126-S90V	Test Report Revision No. Rev. 1.5	 Test Lab Certificate No. 2470.01
	Test Report Issue Date July 28, 2016	Description of Test(s) Specific Absorption Rate	RF Exposure Category Occupational (Controlled)	

Subsets of tests were performed for the Scan radio model variant based on re-evaluating the maximum SAR levels per antenna configuration from the System model evaluations.

FACE-HELD SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparison)															
TABLE 2			XG-25P VHF SCAN Radio Keypad Variant Model					XG-25P VHF SYSTEM Radio Base Model							
C			Cond. Power Before Test (W)	1		2		3		Cond. Power Before Test (W)	4		5		Battery Accessory ID #
R	Antenna Accessory ID #	Test Freq. (MHz)		SAR W/kg (1g)		SAR W/kg (1g)		Battery Accessory ID #			SAR W/kg (1g)		SAR W/kg (1g)		
				100% ptt d/f		50% ptt d/f					100% ptt d/f		50% ptt d/f		
				Drift (dB)		50%+droop					Drift dB		50%+droop		
1	1 (IC only)	138.0	5.11		N/A				5.08	N/A					
2		144.0	5.21	F8	1.49	0.745		c	5.20	F7	1.43	0.715		c	
3					-0.115	0.765					-0.113	0.734			
4	2	150.8	5.17	F9	0.431	0.216		d	5.17	F2	0.404	0.202		d	
5					-0.181	0.225					-0.104	0.207			
6		156.4	5.08		N/A				5.08	N/A					
7	162.0	5.15		N/A				5.13	N/A						
8	3	162.0	5.15		N/A				5.13	N/A					
9		167.7	5.11		N/A				5.08	N/A					
10		173.4	5.17	F10	0.202	0.101		d	5.17	F3	0.206	0.103		d	
11	-0.408				0.111		-0.384				0.113				
12	4	150.8	5.17		N/A				5.17	N/A					
13		158.3	5.08		N/A				5.13	N/A					
14		165.9	5.08		N/A				5.09	N/A					
15	173.4	5.17	F11	1.27	0.635		d	5.17	F4	1.25	0.625		d		
16				-0.241	0.671					-0.233	0.659				
SAR LIMITS				HEAD		SPATIAL PEAK		RF EXPOSURE CATEGORY							
FCC 47 CFR 2.1093		Health Canada Safety Code 6		8.0 W/kg		1 gram average		Occupational / Controlled							
Notes															
Test Mode = CW (Unmodulated Continuous Wave)						Phantom = Side Planar Phantom									
C = Column; R = Row						Fx (F = Face) denotes the corresponding Face SAR Plot # as shown in Appendix A									
N/A = Not Applicable						Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657									
Front of DUT Distance to Planar Phantom (see Appendix D) (Front of DUT Parallel to Planar Phantom)						Shortest Antenna Distance to Planar Phantom (see Appendix D)									
						Antenna 1		Antenna 2		Antenna 3		Antenna 4			
2.5 cm						5.5 cm		5.5 cm		5.5 cm		5.5 cm			


Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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TABLE 3 BODY-WORN SAR EVALUATION RESULTS

Device-Under-Test	XG-25P VHF Radio Transceiver (System)														
Body-worn Accessory ID #	5 (Default)														
Audio Accessory ID #	G7a (Default)														
Test Date(s)	October 19, 2011														

C				1		2		3		4		5		6		7		8	
R	Ant. Acc. ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	SAR W/kg 1g				SAR W/kg 1g				SAR W/kg 1g				SAR W/kg 1g			
				Battery (d) - Default				Battery (a) - Additional				Battery (b) - Additional				Battery (c) - Additional			
				100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f	
				Drift (dB)		50%+droop		Drift dB		50%+droop		Drift dB		50%+droop		Drift dB		50%+droop	
1	1 (IC only)	138.0	5.08	N/A				N/A				N/A							
2		144.0	5.20	B1	0.575	0.288	N/A				N/A								
3					-0.167	0.299	N/A				N/A								
4	2	150.8	5.17	B2	9.16	4.58	B6	1.47	0.735	B7	9.29	4.65	B8	10.8	5.40				
5					-0.211	4.81		-0.141	0.759		0.061	n/a		0.243	n/a				
6		156.4	5.08	B3	6.68	3.34	N/A				N/A								
7					-0.274	3.56	N/A				N/A								
8					162.0	5.13	N/A				N/A								
9		3	162.0	5.13	N/A				N/A				N/A						
10			167.7	5.08	N/A				N/A				N/A						
11	173.4		5.17	B4	0.345	0.173	N/A				N/A								
12					-0.180	0.183	N/A				N/A								
13	4	150.8	5.17	N/A				N/A				N/A							
14		158.3	5.13	N/A				N/A				N/A							
15		165.9	5.09	N/A				N/A				N/A							
16		173.4	5.17	B5	1.26	0.630	N/A				N/A								
17					-0.180	0.657	N/A				N/A								

SAR LIMITS				BODY				SPATIAL PEAK				RF EXPOSURE CATEGORY			
FCC 47 CFR 2.1093		Health Canada Safety Code 6		8.0 W/kg				1 gram average				Occupational / Controlled			

Notes															
C = Column; R = Row								Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A							
Test Mode = CW (Unmodulated Continuous Wave)								Phantom = Side Planar Phantom							
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)								Shortest Antenna Distance to Planar Phantom (see Appendix D)							
								Antenna 1		Antenna 2		Antenna 3		Antenna 4	
1.6 cm								1.8 cm		1.8 cm		1.8 cm		1.8 cm	

Test Procedures applied in accordance with FCC KDB 643646 (see reference [9])

- For body-worn configuration, battery "d" was selected as the default battery (All batteries are the same thickness and battery "d" has the highest mAh).
- When the body SAR of an antenna tested on the highest output power channel with the default battery is > 4.0 W/kg and < 6.0 W/kg, test the immediately adjacent channels for that antenna.
- When the body SAR of an antenna is ≤ 3.5 W/kg, testing of all other required channels is not necessary for that antenna.
- When the highest SAR of an antenna tested with the default battery using the default body-worn and audio accessory is > 4.0 W/kg, test additional batteries with the default body-worn and audio accessory on the channel that resulted in the highest SAR for that antenna.
- The audio accessory G7a was selected as the default audio accessory based on preliminary evaluations resulting in the most conservative SAR of all the disclosed audio accessory options.
- When test reduction applies, the data table entries for such configurations are denoted with N/A (Not Applicable).

TABLE 4 BODY-WORN SAR EVALUATION RESULTS

Device-Under-Test	XG-25P VHF Radio Transceiver (System)												
Body-worn Accessory ID #	1 (Additional)												
Audio Accessory ID #	G7a (Default)												
Test Date(s)	October 20, 2011												

C				1	2	3	4	5	6	7	8				
R	Ant. Acc. ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	SAR W/kg 1g			SAR W/kg 1g			SAR W/kg 1g					
				Battery (d) - Default			Battery (a) - Additional			Battery (b) - Additional			Battery (c) - Additional		
				100% ptt d/f	50% ptt d/f	Drift (dB)	100% ptt d/f	50% ptt d/f	Drift dB	50%+droop	100% ptt d/f	50% ptt d/f	Drift dB	50%+droop	
				100% ptt d/f	50% ptt d/f	Drift (dB)	100% ptt d/f	50% ptt d/f	Drift dB	50%+droop	100% ptt d/f	50% ptt d/f	Drift dB	50%+droop	
1	1 (IC only)	138.0	5.08	N/A			N/A			N/A					
2		144.0	5.20	B9	0.125	0.063	N/A			N/A					
3					-1.65	0.091	N/A			N/A					
4	2	150.8	5.17	B10	0.223	0.112	N/A			N/A					
5					-0.227	0.117	N/A			N/A					
6		156.4	5.08	N/A			N/A			N/A					
7		162.0	5.13	N/A			N/A			N/A					
8	3	162.0	5.13	N/A			N/A			N/A					
9				167.7	5.08	N/A			N/A			N/A			
10		173.4	5.17	B11	0.190	0.095	N/A			N/A					
11					-0.253	0.101	N/A			N/A					
12	4	150.8	5.17	N/A			N/A			N/A					
13		158.3	5.13	N/A			N/A			N/A					
14		165.9	5.09	N/A			N/A			N/A					
15		173.4	5.17	B12	1.16	0.580	B13	1.02	0.510	B14	1.01	0.505	B15	1.12	0.560
16	-0.178				0.604	-1.57		0.732	-0.195		0.528	-0.164		0.582	

SAR LIMITS	BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average
			Occupational / Controlled

Notes				
C = Column; R = Row		Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A		
Test Mode = CW (Unmodulated Continuous Wave)		Phantom = Side Planar Phantom		
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)		Shortest Antenna Distance to Planar Phantom (see Appendix D)		
		Antenna 1	Antenna 2	Antenna 3
4.6 cm		4.8 cm	4.8 cm	4.8 cm

Test Procedures applied in accordance with FCC KDB 643646 (see reference [9])				
1. For body-worn configuration, battery "d" was selected as the default battery (All batteries are the same thickness and battery "d" has the highest mAh).				
2. When the body SAR of an antenna is ≤ 3.5 W/kg, testing of all other required channels is not necessary for that antenna.				
3. When the SAR for all antennas tested using the default battery is ≤ 4.0 W/kg, test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas. Testing of additional batteries in combination with the default body-worn and audio accessory and remaining antennas is unnecessary.				
4. The audio accessory G7a was selected as the default audio accessory based on preliminary evaluations resulting in the most conservative SAR of all the disclosed audio accessory options.				
5. When test reduction applies, the data table entries for such configurations are denoted with N/A (Not Applicable).				

TABLE 5				BODY-WORN SAR EVALUATION RESULTS															
Device-Under-Test				XG-25P VHF Radio Transceiver (System)															
Body-worn Accessory ID #				3 (Additional)															
Audio Accessory ID #				G7a (Default)															
Test Date(s)				October 20 & 21, 2011															
C				1		2		3		4		5		6		7		8	
R	Ant. Acc. ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	SAR W/kg 1g				SAR W/kg 1g				SAR W/kg 1g				SAR W/kg 1g			
				Battery (d) - Default				Battery (a) - Additional				Battery (b) - Additional				Battery (c) - Additional			
				100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f		100% ptt d/f		50% ptt d/f	
				Drift (dB)		50%+droop		Drift dB		50%+droop		Drift dB		50%+droop		Drift dB		50%+droop	
1	1 (IC only)	138.0	5.08	N/A				N/A				N/A							
2		144.0	5.20	B16	0.104	0.052	N/A				N/A								
3					-1.71	0.077	N/A				N/A								
4	2	150.8	5.17	B17	0.244	0.122	N/A				N/A								
5					-0.306	0.131	N/A				N/A								
6		156.4	5.08	N/A				N/A				N/A							
7		162.0	5.13	N/A				N/A				N/A							
8	3	162.0	5.13	N/A				N/A				N/A							
9		167.7	5.08	N/A				N/A				N/A							
10		173.4	5.17	B18	0.175	0.088	N/A				N/A								
11					-0.299	0.094	N/A				N/A								
12	4	150.8	5.17	N/A				N/A				N/A							
13		158.3	5.13	N/A				N/A				N/A							
14		165.9	5.09	N/A				N/A				N/A							
15		173.4	5.17	B19	0.987	0.494	B20	0.811	0.406	B21	0.813	0.407	B22	0.929	0.465				
16			0.279		n/a	-1.62		0.589	-0.180		0.424	-0.175		0.484					
SAR LIMITS				BODY				SPATIAL PEAK				RF EXPOSURE CATEGORY							
FCC 47 CFR 2.1093		Health Canada Safety Code 6		8.0 W/kg				1 gram average				Occupational / Controlled							
Notes																			
C = Column; R = Row								Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A											
Test Mode = CW (Unmodulated Continuous Wave)								Phantom = Side Planar Phantom											
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)								Shortest Antenna Distance to Planar Phantom (see Appendix D)											
				Antenna 1		Antenna 2		Antenna 3		Antenna 4									
5.4 cm				5.6 cm		5.6 cm		5.6 cm		5.6 cm									

Test Procedures applied in accordance with FCC KDB 643646 (see reference [9])
1. For body-worn configuration, battery "d" was selected as the default battery (All batteries are the same thickness and battery "d" has the highest mAh).
2. When the body SAR of an antenna is ≤ 3.5 W/kg, testing of all other required channels is not necessary for that antenna.
3. When the SAR for all antennas tested using the default battery is ≤ 4.0 W/kg, test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas. Testing of additional batteries in combination with the default body-worn and audio accessory and remaining antennas is unnecessary.
4. The audio accessory G7a was selected as the default audio accessory based on preliminary evaluations resulting in the most conservative SAR of all the disclosed audio accessory options.
5. When test reduction applies, the data table entries for such configurations are denoted with N/A (Not Applicable).

TABLE 6	BODY-WORN SAR EVALUATION RESULTS
----------------	---

Device-Under-Test	XG-25P VHF Radio Transceiver (System)
Body-worn Accessory ID #	4 (Additional)
Audio Accessory ID #	G7a (Default)
Test Date(s)	October 19 & 20, 2011



C				1	2	3	4	5	6	7	8				
R	Ant. Acc. ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	SAR W/kg 1g		SAR W/kg 1g		SAR W/kg 1g		SAR W/kg 1g					
				Battery (d) - Default		Battery (a) - Additional		Battery (b) - Additional		Battery (c) - Additional					
				100% ptt d/f	50% ptt d/f	100% ptt d/f	50% ptt d/f	100% ptt d/f	50% ptt d/f	100% ptt d/f	50% ptt d/f				
				Drift (dB)	50%+droop	Drift dB	50%+droop	Drift dB	50%+droop	Drift dB	50%+droop				
1	1 (IC only)	138.0	5.08	N/A		N/A		N/A		N/A					
2		144.0	5.20	B23	1.56	0.780	N/A		N/A						
3					0.335	n/a	N/A		N/A						
4	2	150.8	5.17	B24	3.21	1.61	B27	1.19	0.595	B28	3.63	1.82	B29	3.56	1.78
5								-0.180	1.67			-0.217		0.625	
6		156.4	5.08	N/A		N/A		N/A		N/A					
7		162.0	5.13	N/A		N/A		N/A		N/A					
8	3	162.0	5.13	N/A		N/A		N/A		N/A					
9		167.7	5.08	N/A		N/A		N/A		N/A					
10		173.4	5.17	B25	0.381	0.191	N/A		N/A		N/A				
11						-0.245	0.202	N/A		N/A		N/A			
12	4	150.8	5.17	N/A		N/A		N/A		N/A					
13		158.3	5.13	N/A		N/A		N/A		N/A					
14		165.9	5.09	N/A		N/A		N/A		N/A					
15		173.4	5.17	B26	1.26	0.630	N/A		N/A		N/A				
16						-0.295	0.674	N/A		N/A		N/A			

SAR LIMITS	BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average
Occupational / Controlled			

Notes					
C = Column; R = Row		Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A			
Test Mode = CW (Unmodulated Continuous Wave)		Phantom = Side Planar Phantom			
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)		Shortest Antenna Distance to Planar Phantom (see Appendix D)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
3.0 cm		3.2 cm	3.2 cm	3.2 cm	3.2 cm


Test Procedures applied in accordance with FCC KDB 643646 (see reference [9])
1. For body-worn configuration, battery "d" was selected as the default battery (All batteries are the same thickness and battery "d" has the highest mAh).
2. When the body SAR of an antenna is ≤ 3.5 W/kg, testing of all other required channels is not necessary for that antenna.
3. When the SAR for all antennas tested using the default battery is ≤ 4.0 W/kg, test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas. Testing of additional batteries in combination with the default body-worn and audio accessory and remaining antennas is unnecessary.
4. The audio accessory G7a was selected as the default audio accessory based on preliminary evaluations resulting in the most conservative SAR of all the disclosed audio accessory options.
5. When test reduction applies, the data table entries for such configurations are denoted with N/A (Not Applicable).

TABLE 7				BODY-WORN SAR EVALUATION RESULTS																							
Device-Under-Test				XG-25P VHF Radio Transceiver (System)																							
Body-worn Accessory ID #				6 (Additional)																							
Audio Accessory ID #				G7a (Default)																							
Test Date(s)				December 7, 2011																							
C				1			2			3			4			5			6			7			8		
R	Ant. Acc. ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	SAR W/kg 1g			SAR W/kg 1g			SAR W/kg 1g			SAR W/kg 1g														
				Battery (d) - Default			Battery (a) - Additional			Battery (b) - Additional			Battery (c) - Additional														
				100% ptt d/f	50% ptt d/f	Drift (dB)	100% ptt d/f	50% ptt d/f	Drift (dB)	100% ptt d/f	50% ptt d/f	Drift (dB)	100% ptt d/f	50% ptt d/f	Drift (dB)												
				50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop	50%+droop												
1	1 (IC only)	138.0	5.08	N/A			N/A			N/A			N/A														
2		144.0	5.20	B30	0.140	0.070	N/A			N/A			N/A														
3					-0.058	0.071	N/A			N/A			N/A														
4	2	150.8	5.17	B31	0.498	0.249	N/A			N/A			N/A														
5					-0.085	0.254	N/A			N/A			N/A														
6		156.4	5.08	N/A			N/A			N/A			N/A														
7		162.0	5.13	N/A			N/A			N/A			N/A														
8	3	162.0	5.13	N/A			N/A			N/A			N/A														
9		167.7	5.08	N/A			N/A			N/A			N/A														
10		173.4	5.17	B32	0.255	0.128	N/A			N/A			N/A														
11	-0.227				0.134	N/A			N/A			N/A															
12	4	150.8	5.17	N/A			N/A			N/A			N/A														
13		158.3	5.13	N/A			N/A			N/A			N/A														
14		165.9	5.09	N/A			N/A			N/A			N/A														
15		173.4	5.17	B33	1.33	0.665	B34	0.872	0.436	B35	0.851	0.426	B36	0.952	0.476												
16	-0.210				0.698	-1.58		0.627	-1.55		0.608	-1.57		0.683													
SAR LIMITS				BODY			SPATIAL PEAK			RF EXPOSURE CATEGORY																	
FCC 47 CFR 2.1093		Health Canada Safety Code 6		8.0 W/kg			1 gram average			Occupational / Controlled																	
Notes																											
C = Column; R = Row				Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A																							
Test Mode = CW (Unmodulated Continuous Wave)				Phantom = Side Planar Phantom																							
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)				Shortest Antenna Distance to Planar Phantom (see Appendix D)																							
				Antenna 1			Antenna 2			Antenna 3			Antenna 4														
3.3 cm				3.6 cm			3.6 cm			3.6 cm			3.6 cm														

	Date(s) of Evaluation 10/17-21, 12/07, 2011	Test Report Serial No. 092811OWD-T1126-S90V	Test Report Revision No. Rev. 1.5	
	Test Report Issue Date July 28, 2016	Description of Test(s) Specific Absorption Rate	RF Exposure Category Occupational (Controlled)	

Subsets of tests were performed for the Scan radio model variant based on re-evaluating the maximum SAR levels per antenna configuration from the System model evaluations.

BODY-WORN SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparisons)																
Body-worn Accessory ID #			5 (Default)													
Audio Accessory ID #			G7a (Default)													
Test Date(s)			October 19, 2011													
TABLE 8			XG-25P VHF SCAN Radio Keypad Variant Model					XG-25P VHF SYSTEM Radio Base Model								
R	Antenna Accessory ID #	Test Freq. (MHz)	Cond. Power Before Test (W)	1		2		3	Cond. Power Before Test (W)	4		5		6		
				SAR W/kg (1g)		SAR W/kg (1g)				Battery Accessory ID #	SAR W/kg (1g)		SAR W/kg (1g)		Battery Accessory ID #	
				100% ptt d/f		50% ptt d/f					100% ptt d/f		50% ptt d/f			
				Drift (dB)		50%+droop					Drift dB		50%+droop			
1	1 (IC only)	138.0	5.11	N/A					5.08	N/A						
2		144.0	5.21	B37	0.584	0.292	d	5.20	B1	0.575	0.288	d				
3					-0.080	0.297				-0.167	0.299					
4	2	150.8	5.17	B38	8.56	4.28	c	5.17	B8	10.8	5.40	c				
5					-0.164	4.45				0.243	n/a					
6		156.4	5.08	N/A					5.08	N/A						
7		162.0	5.15	N/A					5.13	N/A						
8	3	162.0	5.15	N/A					5.13	N/A						
9		167.7	5.11	N/A					5.08	N/A						
10		173.4	5.17	B39	0.338	0.169	d	5.17	B4	0.345	0.173	d				
11	-0.313				0.182	-0.180				0.183						
12	4	150.8	5.17	N/A					5.17	N/A						
13		158.3	5.08	N/A					5.13	N/A						
14		165.9	5.08	N/A					5.09	N/A						
15		173.4	5.17	B40	1.23	0.615	d	5.17	B5	1.26	0.630	d				
16	-0.281				0.656	-0.180				0.657						
SAR LIMITS				BODY		SPATIAL PEAK		RF EXPOSURE CATEGORY								
FCC 47 CFR 2.1093		Health Canada Safety Code 6		8.0 W/kg		1 gram average		Occupational / Controlled								
Notes																
Test Mode = CW (Unmodulated Continuous Wave)						Phantom = Side Planar Phantom										
C = Column; R = Row						Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A										
N/A = Not Applicable						Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657										
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)						Shortest Antenna Distance to Planar Phantom (see Appendix D)										
						Antenna 1		Antenna 2		Antenna 3		Antenna 4				
1.6 cm						1.8 cm		1.8 cm		1.8 cm		1.8 cm				

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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BODY-WORN SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparisons)

Body-worn Accessory ID #	1 (Additional)
Audio Accessory ID #	G7a (Default)
Test Date(s)	October 20, 2011

TABLE 9			XG-25P VHF SCAN Radio Keypad Variant Model				XG-25P VHF SYSTEM Radio Base Model									
C			Cond. Power Before Test (W)	1		2		Battery Accessory ID #	Cond. Power Before Test (W)	4		5		6		
R	Antenna Accessory ID #	Test Freq. (MHz)		SAR W/kg (1g)		SAR W/kg (1g)				SAR W/kg (1g)	SAR W/kg (1g)		SAR W/kg (1g)		Battery Accessory ID #	
				100% ptt d/f	50% ptt d/f	100% ptt d/f	50% ptt d/f				100% ptt d/f	50% ptt d/f				
			Drift (dB)	50%+droop			Drift dB	50%+droop								
1	1 (IC only)	138.0	5.11	N/A				5.08	N/A							
2		144.0	5.21	B41	0.336	0.168	d	5.20	B9	0.125	0.063	d				
3					-0.517	0.189					-1.65		0.091			
4	2	150.8	5.17	B42	0.281	0.141	d	5.17	B10	0.223	0.112	d				
5					-0.050	0.142					-0.227		0.117			
6			156.4	5.08	N/A				5.08	N/A						
7		162.0	5.15	N/A				5.13	N/A							
8	3	162.0	5.15	N/A				5.13	N/A							
9				N/A				5.08	N/A							
10			173.4	5.17	B43	0.183	0.092	d	5.17	B11	0.190	0.095	d			
11					-0.352	0.099					-0.253	0.101				
12	4	150.8	5.17	N/A				5.17	N/A							
13			158.3	5.08	N/A				5.13	N/A						
14			165.9	5.08	N/A				5.09	N/A						
15			173.4	5.17	B44	1.12	0.560	d	5.17	B12	1.16	0.580	d			
16					-0.234	0.591					-0.178	0.604				

SAR LIMITS	BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average
			Occupational / Controlled

Notes			
Test Mode = CW (Unmodulated Continuous Wave)		Phantom = Side Planar Phantom	
C = Column; R = Row		Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A	
N/A = Not Applicable		Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657	
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)	Shortest Antenna Distance to Planar Phantom (see Appendix D)		
	Antenna 1	Antenna 2	Antenna 3
4.6 cm	4.8 cm	4.8 cm	4.8 cm

BODY-WORN SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparisons)

Body-worn Accessory ID #	3 (Additional)
Audio Accessory ID #	G7a (Default)
Test Date(s)	October 20 & 21, 2011

TABLE 10			XG-25P VHF SCAN Radio Keypad Variant Model				XG-25P VHF SYSTEM Radio Base Model									
C			Cond. Power Before Test (W)	1		2		Battery Accessory ID #	Cond. Power Before Test (W)	4		5		6		
R	Antenna Accessory ID #	Test Freq. (MHz)		SAR W/kg (1g)		SAR W/kg (1g)				SAR W/kg (1g)		SAR W/kg (1g)			SAR W/kg (1g)	
				100% ptt d/f	50% ptt d/f	100% ptt d/f	50% ptt d/f			100% ptt d/f	50% ptt d/f	100% ptt d/f	50% ptt d/f			
		Drift (dB)	50%+droop		50%+droop		Drift dB		50%+droop							
1	1 (IC only)	138.0	5.11	N/A				5.08	N/A							
2		144.0	5.21	B45	0.223	0.112	d	5.20	B16	0.104	0.052	d				
3					-0.303	0.120				-1.71	0.077					
4	2	150.8	5.17	B46	0.265	0.133	d	5.17	B17	0.244	0.122	d				
5					-0.051	0.134				-0.306	0.131					
6		156.4	5.08	N/A				5.08	N/A							
7	162.0	5.15	N/A				5.13	N/A								
8	3	162.0	5.15	N/A				5.13	N/A							
9		167.7	5.11	N/A				5.08	N/A							
10		173.4	5.17	B47	0.165	0.083	d	5.17	B18	0.175	0.088	d				
11	-0.300				0.088	-0.299				0.094						
12	4	150.8	5.17	N/A				5.17	N/A							
13		158.3	5.08	N/A				5.13	N/A							
14		165.9	5.08	N/A				5.09	N/A							
15	173.4	5.17	B48	0.624	0.312	d	5.17	B19	0.987	0.494	d					
16				-0.308	0.335				0.279	n/a						

SAR LIMITS		BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average	Occupational / Controlled

Notes					
Test Mode = CW (Unmodulated Continuous Wave)		Phantom = Side Planar Phantom			
C = Column; R = Row		Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A			
N/A = Not Applicable		Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657			
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)		Shortest Antenna Distance to Planar Phantom (see Appendix D)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
5.4 cm		5.6 cm	5.6 cm	5.6 cm	5.6 cm

BODY-WORN SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparisons)

Body-worn Accessory ID #	4 (Additional)
Audio Accessory ID #	G7a (Default)
Test Date(s)	October 19 & 20, 2011

TABLE 11			XG-25P VHF SCAN Radio Keypad Variant Model					XG-25P VHF SYSTEM Radio Base Model								
C			Cond. Power Before Test (W)	1		2		Battery Accessory ID #	Cond. Power Before Test (W)	4		5		Battery Accessory ID #		
R	Antenna Accessory ID #	Test Freq. (MHz)		SAR W/kg (1g)		SAR W/kg (1g)				SAR W/kg (1g)		100% ptt d/f			50% ptt d/f	
				100% ptt d/f		50% ptt d/f				100% ptt d/f		50% ptt d/f				
				Drift (dB)		50%+droop				Drift dB		50%+droop				
1	1 (IC only)	138.0	5.11	N/A					5.08	N/A						
2		144.0	5.21	B49	0.397	0.199	d	5.20	B23	1.56	0.780	d				
3					-1.97	0.312				0.335	n/a					
4	2	150.8	5.17	B50	1.35	0.675	b	5.17	B28	3.63	1.82	b				
5					-0.464	0.751				-0.237	1.92					
6		156.4	5.08	N/A					5.08	N/A						
7		162.0	5.15	N/A					5.13	N/A						
8	3	162.0	5.15	N/A					5.13	N/A						
9		167.7	5.11	N/A					5.08	N/A						
10		173.4	5.17	B51	0.352	0.176	d	5.17	B25	0.381	0.191	D				
11	-0.372				0.192	-0.245				0.202						
12	4	150.8	5.17	N/A					5.17	N/A						
13		158.3	5.08	N/A					5.13	N/A						
14		165.9	5.08	N/A					5.09	N/A						
15		173.4	5.17	B52	1.18	0.590	d	5.17	B26	1.26	0.630	d				
16	-1.95				0.924	-0.295				0.674						

SAR LIMITS		BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average	Occupational / Controlled

Notes					
Test Mode = CW (Unmodulated Continuous Wave)		Phantom = Side Planar Phantom			
C = Column; R = Row		Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A			
N/A = Not Applicable		Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657			
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)		Shortest Antenna Distance to Planar Phantom (see Appendix D)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
3.0 cm		3.2 cm	3.2 cm	3.2 cm	3.2 cm

BODY-WORN SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparisons)

Body-worn Accessory ID #	6 (Additional)
Audio Accessory ID #	G7a (Default)
Test Date(s)	December 7, 2011

TABLE 12			XG-25P VHF SCAN Radio Keypad Variant Model				XG-25P VHF SYSTEM Radio Base Model											
C			Cond. Power Before Test (W)	1		2		Battery Accessory ID #	Cond. Power Before Test (W)	4		5		6				
R	Antenna Accessory ID #	Test Freq. (MHz)		SAR W/kg (1g)		SAR W/kg (1g)				SAR W/kg (1g)		SAR W/kg (1g)			SAR W/kg (1g)			
				100% ptt d/f		50% ptt d/f				100% ptt d/f		50% ptt d/f			100% ptt d/f		50% ptt d/f	
				Drift (dB)		50%+droop				Drift dB		50%+droop			Drift dB		50%+droop	
1	1 (IC only)	138.0	5.11	N/A				5.08	N/A									
2		144.0	5.21	B53	0.290	0.145	d	5.20	B30	0.140	0.070	d						
3					-2.05	0.232				-0.058	0.071							
4	2	150.8	5.17	B54	0.641	0.321	d	5.17	B31	0.498	0.249	d						
5					-0.084	0.327				-0.085	0.254							
6		156.4	5.08	N/A				5.08	N/A									
7	162.0	5.15	N/A				5.13	N/A										
8	3	162.0	5.15	N/A				5.13	N/A									
9		167.7	5.11	N/A				5.08	N/A									
10		173.4	5.17	B55	0.253	0.127	d	5.17	B32	0.255	0.128	d						
11	-0.340				0.137	-0.227				0.134								
12	4	150.8	5.17	N/A				5.17	N/A									
13		158.3	5.08	N/A				5.13	N/A									
14		165.9	5.08	N/A				5.09	N/A									
15	173.4	5.17	B56	1.37	0.685	d	5.17	B33	1.33	0.665	d							
16				-1.82	1.04				-0.210	0.698								

SAR LIMITS		BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average	Occupational / Controlled



Notes					
Test Mode = CW (Unmodulated Continuous Wave)		Phantom = Side Planar Phantom			
C = Column; R = Row		Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A			
N/A = Not Applicable		Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657			
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)		Shortest Antenna Distance to Planar Phantom (see Appendix D)			
		Antenna 1	Antenna 2	Antenna 3	Antenna 4
3.3 cm		3.6 cm	3.6 cm	3.6 cm	3.6 cm

TABLE 13		BODY-WORN SAR EVALUATION RESULTS REMAINING DEFAULT AUDIO ACCESSORIES BY GROUPING								
Device-Under-Test		XG-25P VHF Radio Transceiver (System)								
Body-worn Accessory ID #		5 (Default)								
Test Date(s)		October 21, 2011								
C						1	2			
R	Antenna Accessory ID #	Battery Accessory ID #	Audio Accessory ID #	Cond. Power Before Test (W)	Test Freq. (MHz)	1g SAR (W/kg)				
						Plot #	100% ptt d/f SAR Drift dB	50% ptt d/f 50%+droop		
1	2	c	G1a	5.17	150.8	A1	9.01	4.51		
2								-0.096	4.61	
3					G2	5.17	150.8	A2	8.52	4.26
4									-0.084	4.34
5					G3b	5.17	150.8	A3	9.44	4.72
6									-0.151	4.89
7					G4	5.17	150.8	A4	9.30	4.65
8									-0.148	4.81
9					G5	5.17	150.8	A5	8.15	4.08
10									-0.123	4.19
11					G6b	5.17	150.8	A6	7.48	3.74
12									-0.101	3.83
13					G8a	5.17	150.8	A7	8.07	4.04
14									-0.117	4.15
15					G9a	5.17	150.8	A8	7.58	3.79
16									-0.155	3.93
17					G10	5.17	150.8	A9	8.82	4.41
18									-0.118	4.53
19					G11b	5.17	150.8	A10	8.50	4.25
20									-0.244	4.50
21					G12a	5.17	150.8	A11	9.26	4.63
22									-0.156	4.80

SAR LIMITS		BODY	SPATIAL PEAK	RF EXPOSURE CATEGORY
FCC 47 CFR 2.1093	Health Canada Safety Code 6	8.0 W/kg	1 gram average	Occupational / Controlled

Notes	
C = Column; R = Row	Ax (A = Accessory) denotes the corresponding Body SAR Plot # as shown in Appendix A
Test Mode = CW (Unmodulated Continuous Wave)	Phantom = Side Planar Phantom
Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)	Shortest Antenna Distance to Planar Phantom (see Appendix D)
	Antenna 2
1.6 cm	1.8 cm

- Test Procedures applied in accordance with FCC KDB 643646 (see reference [9])**
- The audio accessories selected are the default accessories per grouping.
 - The antenna, battery and body-worn accessory were selected based on the maximum SAR level configuration from the body-worn accessory test sequence in the previous tables.
 - SAR evaluations for the remaining audio accessories within each grouping were not required based on the SAR levels from the default audio accessories per grouping were not > 7.0 W/kg.

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12.0 SAR SCALING (MANUFACTURER'S TUNE-UP TOLERANCE)

TABLE 14 MAX. SAR LEVELS SCALED TO MANUF. MAXIMUM TOLERANCE SPECIFICATION							
Test Config.	Test Freq. (MHz)	Test Plot #	Measured Conducted Power (dBm)	Max. Rated Conducted Power inc. Upper Tol. (dBm)	Measured SAR Level 1g (W/kg) (50% PTT d/f)	Scaling up to Max. Power inc. Tolerance	Scaled SAR 1g (W/kg) (50% PTT d/f)
Face-held	144.0	F7	37.2	37.3	0.715	+ 0.1 dB	0.732
Body-worn	150.8	B8	37.1	37.3	5.40	+ 0.2 dB	5.66

12.1 SIMULTANEOUS TRANSMISSION SAR

The BlueTooth transmitter has a measured conducted output power of 0.0011W (0.4dBm) which meets the SAR Test Exclusion Threshold as per FCC KDB 447498 4.3.1. The simultaneous transmission estimated SAR per 447498 4.3.2 is given by:

$$\text{SAR} = [P/d] * [\frac{\pm}{f/x}] = 0.046\text{W/kg}$$

Where:

P = Maximum Channel Power (mW) = 1.1

d = Minimum Test Separation Distance (mm) = 5


f = Maximum Transmit Frequency (GHz) = 2.48



x = 7.5 for 1g SAR

This is the most conservative SAR estimation and will be applied to BOTH Face and Body configurations. Adding the Estimated SAR to the measured SAR gives:

Face-Held: 0.732 + 0.046 = 0.778W/kg

Body-Worn: 5.66 + 0.046 = 5.70W/kg

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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13.0 DETAILS OF SAR EVALUATION

- The number of test frequencies and the test channels evaluated for SAR were selected in accordance with the procedures described in FCC KDB 447498 Section 6) c) (see reference [8]).
- The DUT was evaluated for SAR in accordance with the procedures described in FCC KDB 643646 (see reference [9]).
- The SAR evaluations were performed with a fully charged battery.
- The SAR drift of the DUT was measured by the DASY4 system for the duration of the SAR evaluations. The measured SAR droop was added to the measured SAR levels to report scaled SAR levels as shown in the SAR test data tables. A SAR-versus-Time power droop evaluation was performed (see Appendix A).
- The fluid temperature remained within +/-2°C from the fluid dielectric parameter measurement to the completion of the SAR evaluation.
- The dielectric parameters of the simulated tissue mixtures were measured prior to the SAR evaluations using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).
- The DUT was tested at the maximum conducted output power level preset by the manufacturer in unmodulated continuous transmit operation (Continuous Wave mode at 100% duty cycle) with the transmit key constantly depressed. For a push-to-talk device the 50% duty cycle compensation reported assumes a transmit/receive cycle of equal time base.

14.0 SAR EVALUATION PROCEDURES

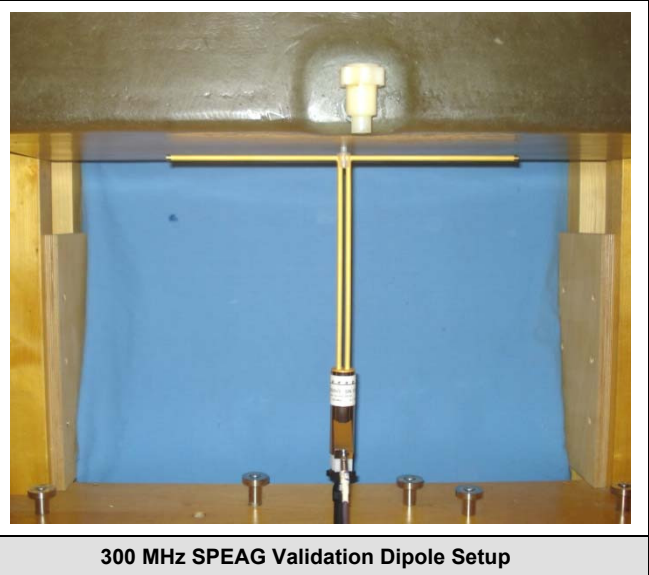
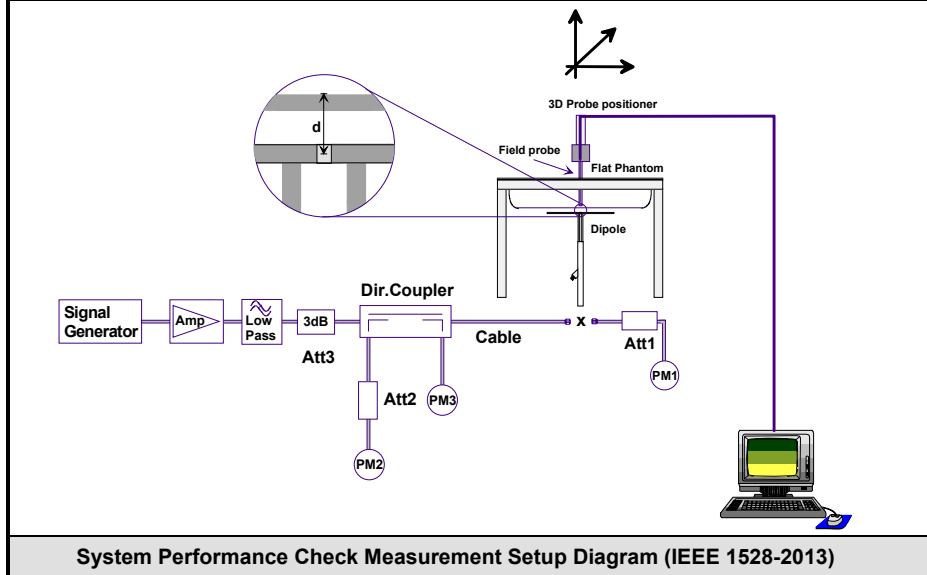
- The evaluation was performed in the applicable area of the phantom depending on the type of device being tested. For devices held to the ear during normal operation, both the left and right ear positions were evaluated using the SAM phantom.
 - For body-worn and face-held devices a planar phantom was used.
- The SAR was determined by a pre-defined procedure within the DASY4 software. Upon completion of a reference and optical surface check, the exposed region of the phantom was scanned near the inner surface with a grid spacing of 20mm x 20mm.
An area scan was determined as follows:
 - Based on the defined area scan grid, a more detailed grid is created to increase the points by a factor of 10. The interpolation function then evaluates all field values between corresponding measurement points.
 - A linear search is applied to find all the candidate maxima. Subsequently, all maxima are removed that are >2 dB from the global maximum. The remaining maxima are then used to position the cube scans.
A 1g and 10g spatial peak SAR was determined as follows:
 - Extrapolation is used to find the points between the dipole center of the probe and the surface of the phantom. This data cannot be measured, since the center of the dipoles is 2.7 mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.4 mm (see probe calibration document in Appendix F). The extrapolation was based on trivariate quadratics computed from the previously calculated 3D interpolated points nearest the phantom surface.
 - Interpolated data is used to calculate the average SAR over 1g and 10g cubes by spatially discretizing the entire measured cube. The volume used to determine the averaged SAR is a 1mm grid (42875 interpolated points).
 - A zoom scan volume of 30 mm x 30 mm x 30 mm (5 x 5 x 7 points) centered at the peak SAR location determined from the area scan is used for all zoom scans for devices with a transmit frequency < 800 MHz. Zoom scans for frequencies ≥ 800 MHz are determined with a scan volume of 30 mm x 30 mm x 30 mm (7 x 7 x 7) to ensure complete capture of the peak spatial-average SAR.

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15.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations, system checks were performed with a planar phantom and 300 MHz SPEAG dipole (see Appendix B for system performance check test plots) in accordance with the procedures described in IEEE Standard 1528-2013 (see reference [5]). The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer (see Appendix C for measured fluid dielectric parameters). A forward power of 398 mW was applied to the dipole and the system was verified to a tolerance of $\pm 10\%$ from the system manufacturer's dipole calibration target SAR value (see Appendix E for system manufacturer's dipole calibration procedures).

SYSTEM PERFORMANCE CHECK EVALUATIONS																
Test Date	Equiv. Tissue	SAR 1g (W/kg)			Dielectric Constant ϵ_r			Conductivity σ (mho/m)			ρ (Kg/m ³)	Amb. Temp. (°C)	Fluid Temp. (°C)	Fluid Depth (cm)	Humid. (%)	Barom. Press. (kPa)
		Freq. (MHz)	Target	Meas.	Dev.	Target	Meas.	Dev.	Target	Meas.						
Oct 17	Head 300	1.14 $\pm 10\%$	1.17	+2.6%	45.3 $\pm 5\%$	45.9	+1.3%	0.87 $\pm 5\%$	0.84	-3.4%	1000	22.0	21.5	≥ 15	32	101.1
Oct 20	Head 300	1.14 $\pm 10\%$	1.20	+5.2%	45.3 $\pm 5\%$	46.3	+2.2%	0.87 $\pm 5\%$	0.88	+1.1%	1000	22.0	22.0	≥ 15	32	101.1
Dec 07	Head 300	1.14 $\pm 10\%$	1.20	+5.2%	45.3 $\pm 5\%$	45.9	+1.3%	0.87 $\pm 5\%$	0.86	-1.1%	1000	22.0	20.2	≥ 15	30	101.1
Notes	1.	The target SAR values are the measured values specified by the SAR system manufacturer in the dipole calibration (see Appendix E).														
	2.	The target fluid dielectric parameters are the nominal values specified by the SAR system manufacturer in the dipole calibration (see Appendix E) and specified in IEEE Standard 1528-2013 (Head) and IC RSS-102 Issue 5 (Body).														
	3.	The fluid temperature remained within $\pm 2^\circ\text{C}$ from the fluid dielectric parameter measurement to the completion of the system performance check.														
	4.	The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer (see Appendix C).														
	5.	System Performance Checks were not performed for all the DUT SAR measurement dates based on compliance with the following provision per TCBC Workshop Presentation April 5-7, 2011 (Kwok Chan Presentation File 04-06-2011-FCC 4 RF Exposure Guidance 040611- KC): <u>SAR System Verification</u> when head and body tissue dielectric parameters are required to test a device, separate SAR system verifications are required - daily verification of each liquid is usually not necessary when liquid parameter tolerances are maintained in a controlled environment - typically every few days is sufficient or when liquid is changed														





16.0 SIMULATED EQUIVALENT TISSUES

The simulated equivalent tissue recipes in the table below are derived from the SAR system manufacturer's suggested recipes in the DASY4 manual (see references [11] and [12]) in accordance with the procedures and requirements specified in IEEE Standard 1528-2013 (see reference [5]). The ingredient percentage may have been adjusted minimally in order to achieve the appropriate target dielectric parameters within the specified tolerance.

SIMULATED TISSUE MIXTURES							
INGREDIENT	Water	300 MHz HEAD Tissue Mixture	37.56 %	150 MHz HEAD Tissue Mixture	38.35 %	150 MHz BODY Tissue Mixture	46.6 %
	Sugar		55.32 %		55.5%		49.7 %
	Salt		5.95 %		5.15%		2.6 %
	HEC		0.98 %		0.9%		1.0 %
	Bactericide		0.19 %		0.1%		0.1 %


17.0 SAR LIMITS



SAR RF EXPOSURE LIMITS			
FCC 47 CFR 2.1093	Health Canada Safety Code 6	(General Population / Uncontrolled Exposure)	(Occupational / Controlled Exposure)
Spatial Average (averaged over the whole body)		0.08 W/kg	0.4 W/kg
Spatial Peak (averaged over any 1 g of tissue)		1.6 W/kg	8.0 W/kg
Spatial Peak (hands/wrists/feet/ankles averaged over 10 g)		4.0 W/kg	20.0 W/kg
The Spatial Average value of the SAR averaged over the whole body.			
The Spatial Peak value of the SAR averaged over any 1 gram of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.			
The Spatial Peak value of the SAR averaged over any 10 grams of tissue (defined as a tissue volume in the shape of a cube) and over the appropriate averaging time.			
Uncontrolled environments are defined as locations where there is potential exposure of individuals who have no knowledge or control of their potential exposure.			
Controlled environments are defined as locations where there is potential exposure of individuals who have knowledge of their potential exposure and can exercise control over their exposure.			

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18.0 ROBOT SYSTEM SPECIFICATIONS

Specifications	
Positioner	Stäubli Unimation Corp. Robot Model: RX60L
Repeatability	0.02 mm
No. of axis	6
Data Acquisition Electronic (DAE) System	
Cell Controller	
Processor	AMD Athlon XP 2400+
Clock Speed	2.0 GHz
Operating System	Windows XP Professional
Data Converter	
Features	Signal Amplifier, multiplexer, A/D converter, and control logic
Software	Measurement Software: DASY4, V4.7 Build 44
	Postprocessing Software: SEMCAD, V1.8 Build 171
Connecting Lines	Optical downlink for data and status info., Optical uplink for commands and clock
DASY4 Measurement Server	
Function	Real-time data evaluation for field measurements and surface detection
Hardware	PC/104 166MHz Pentium CPU; 32 MB chipdisk; 64 MB RAM
Connections	COM1, COM2, DAE, Robot, Ethernet, Service Interface
E-Field Probe	
Model	ET3DV6
Serial No.	1590
Construction	Triangular core fiber optic detection system
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
Phantom 1	
Type	Side Planar Phantom
Shell Material	Plexiglass
Bottom Thickness	2.0 mm ± 0.1 mm
Inner Dimensions	72.6 cm (L) x 20.3 cm (W) x 20.3 cm (H)
Phantom 2	
Type	Barski Planar Phantom
Shell Material	Fiberglass
Thickness	2.0 ±0.1 mm
Volume	Approx. 70 liters


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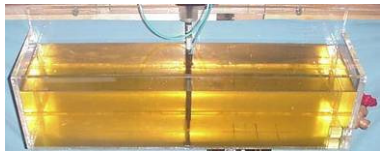
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19.0 PROBE SPECIFICATION


<p>Construction: Symmetrical design with triangular core; Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, glycol)</p> <p>Calibration: In air from 10 MHz to 2.5 GHz In head simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy $\pm 8\%$)</p> <p>Frequency: 10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)</p> <p>Directivity: ± 0.2 dB in head tissue (rotation around probe axis) ± 0.4 dB in head tissue (rotation normal to probe axis)</p> <p>Dynamic Range: 5 μW/g to > 100 mW/g; Linearity: ± 0.2 dB</p> <p>Surface Detect: ± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces</p> <p>Dimensions: Overall length: 330 mm; Tip length: 16 mm; Body diameter: 12 mm; Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm</p> <p>Application: General dosimetry up to 3 GHz; Compliance tests of mobile phone</p>	
	ET3DV6 E-Field Probe


20.0 PHANTOM(S)



<p>The Barski Planar Phantom is a fiberglass shell phantom with a 2.0 mm (+/-0.2mm) thick device measurement area at the center of the phantom for SAR evaluations of devices with a larger surface area than the planar section of the SAM phantom. The planar phantom is integrated in a wooden table. The planar phantom was used for the DUT SAR evaluations and the system performance check evaluations. See Appendix G for dimensions and specifications of the Barski planar phantom.</p>	
	Barski Planar Phantom

<p>The side planar phantom is constructed of Plexiglas material with a 2.0 mm shell thickness for face-held and body-worn SAR evaluations of portable radio transceivers. The side planar phantom is mounted on the side of the DASY4 compact system table.</p>	
	Plexiglas Side Planar Phantom

21.0 DEVICE HOLDER

<p>The DASY4 device holder has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65°. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.</p>	
	Device Holder

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22.0 TEST EQUIPMENT LIST




TEST EQUIPMENT		ASSET NO.	SERIAL NO.	DATE CALIBRATED	CALIBRATION INTERVAL
USED	DESCRIPTION				
x	Schmid & Partner DASY4 System	-	-	-	-
x	-DASY4 Measurement Server	00158	1078	CNR	CNR
x	-Robot	00046	599396-01	CNR	CNR
x	-DAE4	00019	353	27Apr10	Biennial
x	-ET3DV6 E-Field Probe	00017	1590	22Jun11	Annual
x	-SPEAG D300V3 Validation Dipole	00216	1009	18Jan10	Triennial
x	Side Planar Phantom	00156	161	CNR	CNR
x	Barski Planar Phantom	00155	03-01	CNR	CNR
x	HP 85070C Dielectric Probe Kit	00033	none	CNR	CNR
x	Gigatronics 8652A Power Meter	00007	1835272	04May10	Biennial
x	Gigatronics 80701A Power Sensor	00014	1833699	04May10	Biennial
x	HP 8753ET Network Analyzer	00134	US39170292	04May10	Biennial
x	Rohde & Schwarz SMR20 Signal Generator	00006	100104	CNR	CNR
x	Amplifier Research 5S1G4 Power Amplifier	00106	26235	CNR	CNR
Abbr.	CNR = Calibration Not Required				

23.0 JUSTIFICATION FOR EXTENDED DIPOLE CALIBRATION

SAR dipoles calibrated less than two years ago but more than one year ago were confirmed by maintaining return loss (< -20dB, within 20% of prior calibration) and impedance (within 5Ω from prior calibration) requirements per extended calibrations in FCC KDB 450824 (see reference [10]).


SPEAG D300V3 SN: 1009						
Date of Measurement	Frequency	Fluid Type	Return Loss (dB)	Δ %	Impedance (Ω)	Δ Ω
January 18, 2010	300 MHz	Head	-20.1	-	56.3	-
June 6, 2011			-21.2	-5.5%	50.3	5



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24.0 MEASUREMENT UNCERTAINTIES


UNCERTAINTY BUDGET FOR DEVICE EVALUATION									
Uncertainty Component	IEEE 1528 Section	Uncertainty Value ±%	Probability Distribution	Divisor	ci 1g	ci 10g	Uncertainty Value ±% (1g)	Uncertainty Value ±% (10g)	V _i or V _{eff}
Measurement System									
Probe Calibration (150 MHz)	E.2.1	10.0	Normal	1	1	1	10.0	10.0	∞
Axial Isotropy	E.2.2	4.7	Rectangular	1.732050808	0.7	0.7	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	Rectangular	1.732050808	0.7	0.7	3.9	3.9	∞
Boundary Effect	E.2.3	2.5	Rectangular	1.732050808	1	1	1.4	1.4	∞
Linearity	E.2.4	4.7	Rectangular	1.732050808	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	0.3	Normal	1	1	1	0.3	0.3	∞
Response Time	E.2.7	0.8	Rectangular	1.732050808	1	1	0.5	0.5	∞
Integration Time	E.2.8	2.6	Rectangular	1.732050808	1	1	1.5	1.5	∞
RF Ambient Conditions	E.6.1	3	Rectangular	1.732050808	1	1	1.7	1.7	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	Rectangular	1.732050808	1	1	0.2	0.2	∞
Probe Positioning wrt Phantom Shell	E.6.3	2.9	Rectangular	1.732050808	1	1	1.7	1.7	∞
Extrapolation, interpolation & integration algorithms for max. SAR evaluation	E.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Test Sample Related									
Test Sample Positioning	E.4.2	2.9	Normal	1	1	1	2.9	2.9	12
Device Holder Uncertainty	E.4.1	3.6	Normal	1	1	1	3.6	3.6	8
SAR Drift Measurement	6.6.2	5	Rectangular	1.732050808	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4	Rectangular	1.732050808	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5	Rectangular	1.732050808	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measured)	E.3.3	5	Normal	1	0.64	0.43	3.2	2.2	∞
Liquid Permittivity (target)	E.3.2	5	Rectangular	1.732050808	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measured)	E.3.3	4.2	Normal	1	0.6	0.49	2.5	2.1	∞
Combined Standard Uncertainty			RSS				13.97	13.59	
Expanded Uncertainty (95% Confidence Interval)			k=2				27.94	27.18	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2013									
This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2									

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25.0 REFERENCES

- [1] Federal Communications Commission - "Radiofrequency radiation exposure evaluation: portable devices", Rule Part 47 CFR §2.1093.
- [2] Health Canada - "Limits of Human Exposure to Radiofrequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz", Safety Code 6: 1999.
- [3] Federal Communications Commission - "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.
- [4] Industry Canada - "Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)", Radio Standards Specification RSS-102 Issue 5: March 2015.
- [5] IEEE Standard 1528-2013 - "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques": June 2013.
- [6] IEC International Standard 62209-1:2005 - "Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Human models, instrumentation, and procedures."
- [7] International Standard IEC 62209-2 Edition 1.0 2010-03 - "Human exposure to radio frequency fields from hand-held & body-mounted wireless communication devices - Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)".
- [8] Federal Communications Commission, Office of Engineering and Technology - "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies"; KDB 447498 D01v05: February 2014.
- [9] Federal Communications Commission, Office of Engineering and Technology - "SAR Test Reduction Considerations for Occupational PTT Radios", KDB 643646 D01v01r01: April 2011.
- [10] Federal Communications Commission, Office of Engineering and Technology - "Application Note: SAR Probe Calibration and System Verification Considerations for Measurements at 150 MHz - 3 GHz"; KDB 450824 D02 v01r01: April 2012.
- [11] Schmid & Partner Engineering AG - DASY4 Manual V4.6, Chapter 16 Application Note, Head Tissue Recipe: Sept. 2005.
- [12] Schmid & Partner Engineering AG - DASY4 Manual V4.6, Chapter 17 Application Note, Body Tissue Recipe: Sept. 2005.
- [13] ISO/IEC 17025 - "General requirements for the competence of testing and calibration laboratories (ISO/IEC 17025:2005)."
- [14] Federal Communications Commission - "Measurements Required: RF Power Output"; Rule Part 47 CFR §2.1046.
- [15] Industry Canada - "General Requirements and Information for the Certification of Radiocommunication Equipment", Radio Standards Specification RSS-Gen Issue 4: November 2014.

Applicant:	HARRIS Corporation	FCC ID:	OWDTR-0139-E	IC ID:	3636B-0139	
DUT Type:	Portable VHF PTT Radio Transceiver	Model:	XG-25P VHF	Freq.:	138 - 174 MHz	
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