

Test Report Issue Date
September 20, 2012

Test Report Serial No.
0827120WD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



DECLARATION OF COMPLIANCE SAR RF EXPOSURE EVALUATION FCC & IC Name **CELLTECH LABS INC. Test Lab Information Address** 21-364 Lougheed Road, Kelowna, B.C. V1X 7R8 Canada Test Lab Accreditation(s) ISO 17025 A2LA Test Lab Certificate No. 2470.01 Name HARRIS CORPORATION **Applicant Information Address** 221 Jefferson Ridge Parkway, Lynchburg, VA 24501 U.S.A. **FCC** 47 CFR §2.1093 Standard(s) Applied IC Health Canada Safety Code 6 **FCC** KDB 447498 D01v04 KDB 643646 D01v01r01 OET Bulletin 65, Supp. C Procedure(s) Applied IC RSS-102 Issue 4 IEEE 1528-2003 IEC 62209-2:2010 **FCC** Licensed Non-Broadcast Transmitter Held to Face (TNF) - FCC Part 90 **Device Classification(s)** IC Land Mobile Radio Transmitter/Receiver (27.41-960 MHz) - RSS-119 FCC ID: **Device Identifier(s) OWDTR-0073-E** IC: 3636B-0073 FCC Part 90 Certification Application Type(s) IC **RSS-119 Certification Date of Sample Receipt** August 27, 2012 **Dates of Evaluation** September 04-07, 2012 Portable 700/800-Band Digital Push-To-Talk (PTT) Radio Transceiver with Bluetooth **Device Description** XG-25P 7/800 System Model: DPXG-PF78B P/N: 14011-0020-01 **DTMF** Keypad Device Name / Model(s) XG-25P 7/800 Scan Model: DPXG-PB78B P/N: 14011-0020-02 Limited Keypad Test Sample Serial No.(s) XG-25P System - S/N: 14 (identical prototype) XG-25P Scan - S/N: 35 (identical prototype) **Test Sample Revision No.s** Hardware Rev. -Firmware R16A10 FCC 764-776 MHz 794-805 MHz 806-824 MHz 851-869 MHz **Transmit Frequency Range(s)** IC 768-776 MHz 798-805 MHz 806-824 MHz 851-869 MHz **700 Band** 2.9 Watts Nominal (Conducted) **Upper Tolerance Spec.** + 0.05 Watts **Manufacturer's Rated Output Power** 800 Band 3.0 Watts Nominal (Conducted) **Upper Tolerance Spec.** + 0.23 Watts Bluetooth (Class 2) Nominal Output Power: 2.5 mW (Cond.) Freq. Range: 2402-2480 MHz **Co-located Transmitters**) Antenna Type(s) Tested See manufacturer's accessory listing (Section 5.0) Battery Type(s) Tested See manufacturer's accessory listing (Section 5.0) **Body-worn Accessories Tested** See manufacturer's accessory listing (Section 5.0) **Audio Accessories Tested** See manufacturer's accessory listing (Section 5.0) Face-held 1.63 W/kg 50% PTT duty factor Occupational / Controlled Exposure 1g Max. SAR Level(s) Evaluated Body-worn 3.62 W/kg 1g 50% PTT duty factor Occupational / Controlled Exposure

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 4, IEEE Standard 1528-2003 and IEC International Standard 62209-2:2010. All measurements were performed in accordance with the SAR system manufacturer recommendations.

1g

8.0 W/kg

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

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The results and statements contained in this report pertain only to the device(s) evaluated.

Head/Body

Test Report Approved By

FCC/IC Spatial Peak SAR Limit



Sean Johnston

Lab Manager

50% PTT duty factor

Celltech Labs Inc.

Occupational / Controlled Exposure

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	
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re(s) of Evaluation Test Report Serial No.
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Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Trar	sceiver with Bluetooth	DUT Na	ame:	XG-25P 7/800	
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O

Rev. 1.0 (1st Release)

RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



	REVISION HISTORY								
REVISION NO. DESCRIPTION IMPLEMENTED BY RELEASE DATE									
1.0	1.0 1st Release Jon Hughes September 20, 2012								

	TEST REPORT SIGN-OFF								
DEVICE TESTED BY REPORT PREPARED BY QA REVIEW BY REPORT APPROVED BY									
Mike Meaker	Cheri Frangiadakis	Jon Hughes	Sean Johnston						

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-	
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RF Exposure Category
Occupational (Controlled)



1.0 INTRODUCTION

This measurement report demonstrates that the HARRIS Corporation XG-25P 7/800 Portable PTT Radio Transceiver with Bluetooth 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 4 (see reference [4]), IEEE Standard 1528-2003 (see reference [5]) and IEC 62209-2:2010 (see reference [6]) 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.

2.0 SAR MEASUREMENT SYSTEM

Celltech Labs Inc. SAR measurement facility utilizes the Dosimetric Assessment System (DASYTM) 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 Electrooptical 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.



DASY4 SAR Measurement System with Side Planar Phantom



DASY4 Measurement System with Barski Planar Phantom

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	200
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3.0 RF CONDUCTED OUTPUT POWER MEASUREMENTS

	IV	IEASU	IRED RF COND	UCTED OUT	PUT POW	ER LEVEL	S
Radio	Mode	F	req. Band	Test Freq.	Watts	dBm	Method
		1	764-776 MHz	764.0	2.90	34.6	
		ı	704-770 WII 12	776.0	2.95	34.7	
		2	794-806 MHz	794.0	2.93	34.7	
System	CW	2	7 94-000 WII 12	805.0	2.90	34.6	Average Conducted
System	CVV	3	806-825 MHz	806.0	3.20	35.1	Average Conducted
			000-025 WII 12	824.0	3.20	35.1	
		1	4 851-870 MHz	851.0	3.16	35.0	
		4		869.0	3.20	35.1	
		1	764 776 MHz	764.0	2.93	34.7	
		1	764-776 MHz	776.0	2.96	34.7	
		2	794-806 MHz	794.0	2.90	34.6	
Scan	CW	2	7 94-000 WITZ	805.0	2.95	34.7	Average Conducted
Scari	CVV	3	806-825 MH-7	806.0	3.20	35.1	Average Conducted
		3	3 806-825 MHz	824.0	3.19	35.0	
		4	851-870 MHz	851.0	3.13	35.0	
		4	031-070 WHZ	869.0	3.17	35.0	

Notes

4.0 NO. OF TEST CHANNELS (Nc)

А	Intenna Part No.	Antenna Type	Antenna Freq. Range	N _c	Test Frequencies (MHz)
1	KRE 101 506/1	½-wave	764 - 870 MHz	8	764.0, 776.0, 794.0, 805.0, 806.0, 824.0, 851.0, 869.0
2	KRE 101 506/2	Wideband Whip	764 - 870 MHz	8	764.0, 776.0, 794.0, 805.0, 806.0, 824.0, 851.0, 869.0

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

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	
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^{1.} The test channels were selected in accordance with the procedures specified in FCC KDB 447498 Section 6) c) (see reference [8]).

^{2.} The RF conducted output power levels of the DUT were measured by Celltech Labs prior to the SAR evaluations using a Gigatronics 8652A Universal Power Meter at the external antenna connector of the radio in accordance with requirements of FCC 47 CFR §2.1046 (see reference [14]) and IC RSS-Gen (see reference [15]).



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5.0 MANUFACTURER'S DISCLOSED ACCESSORY LISTING

Accessory ID #	ACCESSORY CATEGORY:	ANTENNA	
for Test Report	Part Number	Description	SAR Evaluation
1	KRE 101 1506/1	½ - wave (764-870 MHz), 2 dBi gain	Yes
2	KRE 101 1506/2	Wideband whip (764-870 MHz), 0 dBi gain	Yes
Accessory ID #	ACCESSORY CATEGORY:	BATTERY	
for Test Report	Part Number	Description	SAR Evaluation
а	BT-023406-003	Ni-MH, immersible, non-IS, 7.5V, 2400mAh	Yes
b	BT-023406-004	Ni-MH, immersible, <is> (7.5V, 2400mAh)</is>	Yes
С	BT-023406-005	Li-ion, immersible, non-IS (7.4V, 2000mAh)	Yes
d	BT-023436-001	Lithium-polymer, immersible, non-IS (7.4V, 3000mAh)	Yes
Accessory ID #	ACCESSORY CATEGORY:	BODY-WORN	
for Test Report	Part Number	Description	SAR Evaluation
1	14011-0012-01	Kit containing: 14011-0011-01 BEE Nylon case (Black) (with radio retaining strap) & CC-014527 BEE Leather Belt Loop	Yes
2	14011-0012-02	Kit containing: 14011-0011-02 BEE Nylon case (Orange) (with radio retaining strap) & CC-014527 BEE Leather Belt Loop	No ¹
3	14011-0012-03	Kit contains: 14011-0011-03 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 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 (Standard)	Yes
6	FM-017262-001 CC-014527	Swivel Mount Belt Loop, Leather (BEE)	Yes

See next page for audio accessory listing

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Tran	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	-
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Accessory ID #	ACCESSORY CA	TEGORY: AUDIO		
for Test Report	Part Number	Description	Audio Accessory Grouping	SAR Evaluation
G1a	EA-009580-010	Headset, heavy duty, N/C behind the head, w/ PTT	Croup 1 (Hoovy Duty boodest)	No ³
G1b	EA-009580-013	Headset, heavy duty, N/C over the head, w/ PTT	Group 1 (Heavy Duty headset)	No ³
G2	EA-009580-008	Lightweight headset single spkr w/ PTT	Group 2 (Lightweight headset)	No ³
G3a	EA-009580-009	Breeze Headset w/ PTT	Consum Q (Decomo biological)	Yes
G3b	EA-009580-016	Breeze headset w/ PTT & pigtail jack	- Group 3 (Breeze headset)	No ³
G4	EA-009580-007	Explorer Headset w/ PTT	Group 4 (Explorer headset)	No ³
G5	EA-009580-011	Ranger Headset w/ PTT	Group 5 (Ranger headset)	No ³
G6a	EA-009580-017	Hurricane headset w/ PTT	Consum C (I burning a band at)	No ³
G6b	EA-009580-018	Hurricane headset w/ PTT & pigtail jack	Group 6 (Hurricane headset)	No ³
G7a	MC-023933-001	Speaker-Mic, No Ant. (cc), <is></is>		No ³
G7b	MC-009104-002	Speaker-Mic, GPS, non-IS	Ones (7 (On enlary Mile)	No ³
G7c	MC-011617-601	Ruggedized Speaker Mic-Coil Cord	Group 7 (Speaker Mic)	No ³
G7d	MC-011617-701	Standard Speaker Mic - Non Ant]	No ³
G8a	EA-009580-003	2-Wire Kit, Palm mic, Black	Croup 9 (Poles rais)	No ³
G8b	EA-009580-004	2-Wire Kit, Palm mic, Beige	- Group 8 (Palm mic)	No ²
G9a	EA-009580-005	3-Wire Kit, Mini-Lapel Mic, Black	Crown O (Londonia)	No ³
G9b	EA-009580-006	3-Wire Kit, Mini-Lapel Mic, Beige	- Group 9 (Lapel mic)	No ²
G10	EA-009580-012	Skull mic w/body PTT & earcup	Group 10 (Skull mic)	No ³
G11a	EA-009580-014	Throat mic w/acoustic tube & body PTT	Crown 44 (Throat min)	No ³
G11b	EA-009580-015	Throat mic w/acoustic tube, body PTT, & ring PTT	Group 11 (Throat mic)	No ³
G12a	EA-009580-001	Earphone Kit, Black	Crown 42 (Formbone)	No ³
G12b	EA-009580-002	Earphone Kit, Beige	- Group 12 (Earphone)	No ²

Manufacturer's disclosed accessory listing information provided by HARRIS Corporation

Footnotes

- 1. Body-worn accessory #2 is identical to body-worn accessory #1 except for color difference.
- 2. Audio accessories #G8b, #G9b and #G12b are identical to audio accessories #G8a, #G9a and #G12a respectively except for color difference.
- 3. Audio accessories were not evaluated for SAR in accordance with the procedures and provisions of FCC KDB 643646 D01v01r01 (Page 10 Section 1) see reference [9].

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DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	A 0.00		
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6.0 FLUID DIELECTRIC PARAMETERS

	FLI	JID DIEL	ECTRIC	PARAME	ETERS	
Date: 09/	04/2012	Freq	uency: 835	MHz	Tissu	e: Body
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.735	56.14	0.86	55.2	0.97	1.70%	-11.34%
0.745	56.01	0.88	55.2	0.97	1.47%	-9.28%
0.755	55.85	0.89	55.2	0.97	1.18%	-8.25%
0.765	55.68	0.91	55.2	0.97	0.87%	-6.19%
0.775	55.79	0.91	55.2	0.97	1.07%	-6.19%
0.776*	55.8	0.911	55.2	0.97	1.09%	-6.08%
0.785	55.7	0.92	55.2	0.97	0.91%	-5.15%
0.794*	55.5	0.92	55.2	0.97	0.54%	-5.15%
0.795	55.49	0.92	55.2	0.97	0.53%	-5.15%
0.805	55.31	0.93	55.2	0.97	0.20%	-4.12%
0.815	55.39	0.94	55.2	0.97	0.34%	-3.09%
0.824*	55.4	0.958	55.2	0.97	0.36%	-1.24%
0.825	55.42	0.96	55.2	0.97	0.40%	-1.03%
0.835	55.21	0.96	55.2	0.97	0.02%	-1.03%
0.845	54.87	0.96	55.2	0.97	-0.60%	-1.03%
0.855	54.95	0.98	55.2	0.97	-0.45%	1.03%
0.865	54.78	1	55.2	0.97	-0.76%	3.09%
0.869*	54.8	1	55.2	0.97	-0.72%	3.09%
0.875	54.83	1.01	55.2	0.97	-0.67%	4.12%
0.885	54.81	1.02	55.2	0.97	-0.71%	5.15%
0.895	54.71	1.03	55.2	0.97	-0.89%	6.19%
0.905	54.39	1.05	55.2	0.97	-1.47%	8.25%
0.915	54.37	1.04	55.2	0.97	-1.50%	7.22%
0.925	54.4	1.06	55.2	0.97	-1.45%	9.28%
0.935	54.43	1.07	55.2	0.97	-1.39%	10.31%

^{*}interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m³)
Sep 4	835 Body	23.0°C	22.5°C	≥ 15 cm	101.1 kPa	34%	1000

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		HARRIS	
DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-	
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	FLI	JID DIEL	ECTRIC	PARAME	ETERS	
Date: 09/05	5-06/2012	Freq	uency: 835	MHz	Tissu	e: Body
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.735	56.14	0.87	55.2	0.97	1.70%	-10.31%
0.745	56.05	0.89	55.2	0.97	1.54%	-8.25%
0.755	55.66	0.89	55.2	0.97	0.83%	-8.25%
0.765	55.91	0.91	55.2	0.97	1.29%	-6.19%
0.775	55.72	0.91	55.2	0.97	0.94%	-6.19%
0.776*	55.7	0.912	55.2	0.97	0.91%	-5.98%
0.785	55.62	0.93	55.2	0.97	0.76%	-4.12%
0.794*	55.6	0.948	55.2	0.97	0.72%	-2.27%
0.795	55.59	0.95	55.2	0.97	0.71%	-2.06%
0.805	55.11	0.95	55.2	0.97	-0.16%	-2.06%
0.815	55.37	0.96	55.2	0.97	0.31%	-1.03%
0.824*	55.4	0.96	55.2	0.97	0.36%	-1.03%
0.825	55.37	0.96	55.2	0.97	0.31%	-1.03%
0.835	55.3	0.98	55.2	0.97	0.18%	1.03%
0.845	55.18	0.98	55.2	0.97	-0.04%	1.03%
0.855	55.02	1	55.2	0.97	-0.33%	3.09%
0.865	55.08	1	55.2	0.97	-0.22%	3.09%
0.869*	54.9	1	55.2	0.97	-0.54%	3.09%
0.875	54.6	1.01	55.2	0.97	-1.09%	4.12%
0.885	54.7	1.02	55.2	0.97	-0.91%	5.15%
0.895	54.76	1.05	55.2	0.97	-0.80%	8.25%
0.905	54.66	1.05	55.2	0.97	-0.98%	8.25%
0.915	54.55	1.06	55.2	0.97	-1.18%	9.28%
0.925	54.45	1.07	55.2	0.97	-1.36%	10.31%
0.935	54.11	1.08	55.2	0.97	-1.97%	11.34%

^{*}interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m³)
Sep 5	835 Body	23.0°C	22.3°C	≥ 15 cm	101.1 kPa	30%	1000
Sep 6	835 Body	23.0°C	21.5°C	≥ 15 cm	101.1 kPa	30%	1000

	Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS	
	DUT Type:	Porta	ortable 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800						-	
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Test Report Issue Date
September 20, 2012

<u>Test Report Serial No.</u> 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)



	FLI	JID DIEL	ECTRIC	PARAME	ETERS	
Date: 09/	07/2012	Freq	uency: 835	MHz	Tissu	e: Body
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.735	54.88	0.85	55.2	0.97	-0.58%	-12.37%
0.745	55.28	0.88	55.2	0.97	0.14%	-9.28%
0.755	55	0.88	55.2	0.97	-0.36%	-9.28%
0.765	54.83	0.89	55.2	0.97	-0.67%	-8.25%
0.775	54.87	0.9	55.2	0.97	-0.60%	-7.22%
0.785	54.95	0.91	55.2	0.97	-0.45%	-6.19%
0.794*	54.8	0.928	55.2	0.97	-0.72%	-4.33%
0.795	54.8	0.93	55.2	0.97	-0.72%	-4.12%
0.805	54.37	0.94	55.2	0.97	-1.50%	-3.09%
0.815	54.66	0.95	55.2	0.97	-0.98%	-2.06%
0.824*	54.4	0.95	55.2	0.97	-1.45%	-2.06%
0.825	54.37	0.95	55.2	0.97	-1.50%	-2.06%
0.835	54.24	0.96	55.2	0.97	-1.74%	-1.03%
0.845	54.23	0.98	55.2	0.97	-1.76%	1.03%
0.855	53.82	0.98	55.2	0.97	-2.50%	1.03%
0.865	53.93	0.99	55.2	0.97	-2.30%	2.06%
0.875	53.63	1	55.2	0.97	-2.84%	3.09%
0.885	53.66	1.03	55.2	0.97	-2.79%	6.19%
0.895	53.69	1.03	55.2	0.97	-2.74%	6.19%
0.905	53.31	1.03	55.2	0.97	-3.42%	6.19%
0.915	53.66	1.05	55.2	0.97	-2.79%	8.25%
0.925	53.3	1.06	55.2	0.97	-3.44%	9.28%
0.935	53.25	1.06	55.2	0.97	-3.53%	9.28%

^{*}interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Fluid Temperature Depth		Atmospheric Pressure	Relative Humidity	ρ (Kg/m ³)
Sep 7	835 Body	23.0°C	22.5°C	≥ 15 cm	101.1 kPa	30%	1000

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS	
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-		
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)



	FLI	JID DIEL	ECTRIC	PARAME	ETERS	
Date: 09/	07/2012	Freq	uency: 835	MHz	Tissu	e: Head
Freq	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
0.735	42.95	0.78	41.5	0.9	3.49%	-13.33%
0.745	43.2	0.8	41.5	0.9	4.10%	-11.11%
0.755	43.18	0.81	41.5	0.9	4.05%	-10.00%
0.765	42.59	0.82	41.5	0.9	2.63%	-8.89%
0.775	42.79	0.84	41.5	0.9	3.11%	-6.67%
0.776*	42.8	0.841	41.5	0.9	3.13%	-6.56%
0.785	42.58	0.85	41.5	0.9	2.60%	-5.56%
0.794*	42.5	0.85	41.5	0.9	2.41%	-5.56%
0.795	42.52	0.85	41.5	0.9	2.46%	-5.56%
0.805	42.49	0.87	41.5	0.9	2.39%	-3.33%
0.815	42.57	0.88	41.5	0.9	2.58%	-2.22%
0.824*	42.3	0.88	41.5	0.9	1.93%	-2.22%
0.825	42.24	0.88	41.5	0.9	1.78%	-2.22%
0.835	42.07	0.88	41.5	0.9	1.37%	-2.22%
0.845	41.87	0.91	41.5	0.9	0.89%	1.11%
0.855	41.74	0.92	41.5	0.9	0.58%	2.22%
0.865	41.39	0.92	41.5	0.9	-0.27%	2.22%
0.869*	41.3	0.924	41.5	0.9	-0.48%	2.67%
0.875	41.06	0.93	41.5	0.9	-1.06%	3.33%
0.885	41.44	0.94	41.5	0.9	-0.14%	4.44%
0.895	41.13	0.95	41.5	0.9	-0.89%	5.56%
0.905	41.08	0.95	41.5	0.9	-1.01%	5.56%
0.915	40.97	0.98	41.5	0.9	-1.28%	8.89%
0.925	40.76	0.97	41.5	0.9	-1.78%	7.78%
0.935	40.96	0.98	41.5	0.9	-1.30%	8.89%

^{*}interpolated using DASY4 software

Test Date	Fluid Type	Ambient Temperature	Fluid Temperature	Fluid Depth	Atmospheric Pressure	Relative Humidity	ρ (Kg/m³)
Sep 7	835 Head	23.0°C	22.9°C	≥ 15 cm	101.1 kPa	30%	1000

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS		
DUT Type:	Porta	ble 700/800-Band P	XG-25P 7/800	-						
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



7.0 SAR TEST REDUCTION PROCEDURES APPLIED (FCC KDB 643646 D01v01r01)

- 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 accessory 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 (h) 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 I (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 and thinnest battery) were performed by Celltech with all of the optional audio accessories connected to the radio consecutively.



Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



8.0 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.



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<u>Description of Test(s)</u> <u>RF Exposure Category</u> Specific Absorption Rate Occupational (Controlled)

Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category



9.0 SAR MEASUREMENT SUMMARY

Test Froign	TAI	BLE 1			FAC	E-HELI	D SA	R E	VALU	ATION	RESULT	S					
Condition Cond		Dev	vice-Und	ler-Test	XG-2	5P 7/800	Radio	Trar	sceive	r (Syster	n)						
R			Test	Date(s)	Sept.	7, 2012											
Antenna	С					1	2			3	4		5	6		7	8
R Coessory Fee Miles										SAR W/k	g 1g		SAR W/k	g 1g		SAR W/k	g 1g
D # MHz Test 100% ptt drf 50% ptt	R	1.5			Batt	tery a (Ad	dition	al)	Bat	tery b (Ad	lditional)	Bat	tery c (Ad	1	В	attery d (D	Default)
Test Mode Test Free; Test Mode Test Mo		-	•	Test	100%	ptt d/f	50% p	tt d/f	100%	6 ptt d/f	50% ptt d/f	100%	% ptt d/f	50% ptt d/f	1009	% ptt d/f	50% ptt d/f
Troposition				(W)	Drif	• •	50%+0	droop	Dri		•	Dr		•	Dr		50%+droop
1	1		764.0	2.90		N/A				N/A			N/A			N/A	ı
1	2		776.0	2 95		N/A				N/A			N/A		F1	1.14	0.570
Test Made	3		770.0	2.00		1477										-0.272	0.607
1	4		704.0	2.02		NI/A				NI/A			NI/A		F2	1.20	0.600
1	5		794.0	2.93		IN/A				IN/A		Ī	IN/A		ΓZ	-0.463	0.667
Ref. Section Section	6		805.0	2.90		N/A				N/A			N/A			N/A	
Section Sect	7	1	806.0	3.20		N/A				N/A			N/A			N/A	
Section Sect	8															1.23	0.615
11 12 869.0 3.20 N/A	9		824.0	3.20		N/A				N/A			N/A		F3		0.709
11 12 869.0 3.20 N/A	10		851.0	3.16		N/A				N/A			N/A			N/A	
12	11																0.371
Total Tota			869.0	3.20		N/A				N/A			N/A		F4		
14 15 16 17 18 19 20 21 22 24 851.0 3.20 N/A			764.0	2.90	N/A			N/A				N/A				5.555	
15				2.00			1.6	33			1			1			1.51
Test Freq: 776.0 Test Freq: 794.0 2.93 N/A N			776.0	2.95	F9 -				F10			F11		F			
17						0.100		,,		0.101	1.00		0.100	1.01			
18 2 805.0 2.90 N/A N/A			794.0	2.93		N/A				N/A			N/A		F6		
19 2 806.0 3.20 N/A N/A			805 O	2.00		N/A				N/A			N/A				1.47
Result	-	2															
Sar Limits			806.0	3.20			1 4	10			I		1				1.40
N/A N/A	-		824.0	3.20	F12				F13			F14			F7		
23 869.0 3.20 N/A N/A N/A N/A F8 1.90 0.950 -0.330 1.03 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 Band 1: 764-776 MHz Band 2: 794-806 MHz Band 3: 806-825 MHz Band 4: 851-870 MHz Test Freq.: 776.0 MHz Test Freq.: 824.0 MHz Test Freq.: 869.0 MHz 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) Shortest Antenna Distance to Planar Phantom (see Appendix D)	-		054.0	0.40			1.:	01									1.54
SAR LIMITS Band 1: 764-776 MHz Test Freq.: 776.0 MHz Test Freq.: 776.0 MHz Test Freq.: 794.0 MHz Test Mode = CW (Unmodulated Continuous Wave) FROM Total Plant Phantom (see Appendix D) N/A N/A N/A N/A N/A N/A N/A N/	•		851.0	3.16		N/A				N/A			N/A			1	0.6-5
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 Band 1: 764-776 MHz Test Freq.: 776.0 MHz Test Freq.: 776.0 MHz Test Freq.: 794.0 MHz Test Freq.: 794.0 MHz Test Freq.: 824.0 MHz Test Freq.: 869.0 MHz Test Mode = CW (Unmodulated Continuous Wave) Front of DUT Distance to Planar Phantom (see Appendix D) Shortest Antenna Distance to Planar Phantom (see Appendix D)			869.0	3.20		N/A				N/A			N/A		F8		
FCC 47 CFR 2.1093Health Canada Safety Code 68.0 W/kg1 gram averageOccupational / ControlledNotesBand 1: 764-776 MHzBand 2: 794-806 MHzBand 3: 806-825 MHzBand 4: 851-870 MHzTest Freq.: 776.0 MHzTest Freq.: 794.0 MHzTest Freq.: 824.0 MHzTest Freq.: 869.0 MHzC = Column; R = RowFx (F = Face) denotes the corresponding Face SAR Plot # as shown in Appendix ATest Mode = CW (Unmodulated Continuous Wave)Phantom = Side Planar PhantomFront of DUT Distance to Planar Phantom (see Appendix D)	24									_						L	
Notes Band 1: 764-776 MHz Test Freq.: 776.0 MHz C = Column; R = Row Test Mode = CW (Unmodulated Continuous Wave) Front of DUT Distance to Planar Phantom (see Appendix D) Band 3: 806-825 MHz Test Freq.: 824.0 MHz Test Freq.: 824.0 MHz Test Freq.: 869.0 MHz Fx (F = Face) denotes the corresponding Face SAR Plot # as shown in Appendix A Phantom = Side Planar Phantom Shortest Antenna Distance to Planar Phantom (see Appendix D)		O 47 OFD 6 4			mada 0	of other Committee	do C										
Band 1: 764-776 MHz Test Freq.: 776.0 MHz Test Freq.: 794.0 MHz Test Freq.: 794.0 MHz Test Freq.: 824.0 MHz Test Freq.: 824.0 MHz Test Freq.: 869.0 MHz Test Freq.: 869.0 MHz Fx (F = Face) denotes the corresponding Face SAR Plot # as shown in Appendix A Test Mode = CW (Unmodulated Continuous Wave) Front of DUT Distance to Planar Phantom (see Appendix D) Shortest Antenna Distance to Planar Phantom (see Appendix D)			093	Health Ca	anada S	arety Coc	ie 6		8.U W/	kg	1 gra	m aver	age	Occ	upation	iai / Contr	ollea
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) Shortest Antenna Distance to Planar Phantom (see Appendix D)	Band	1: 764-776 N															
Test Mode = CW (Unmodulated Continuous Wave) Phantom = Side Planar Phantom Phantom = Side Planar Phantom Shortest Antenna Distance to Planar Phantom (see Appendix D)					Test F	req.: 794.	0 MHz									andiv A	
Front of DUT Distance to Planar Phantom (see Appendix D) Shortest Antenna Distance to Planar Phantom (see Appendix D)	-			ated Contin	IIIOrie ///	ave)								LE SAK PIOT	Plot # as shown in Appendix A		
		,					nendis	(D)					nar Phanton	untom (see Appendix D)			
, , , , , , , , , , , , , , , , , , ,	"						•	(D)	Antenna 1				Antenna 2				
2.5 cm 5.4 cm 5.4 cm		2.5 cm															

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS		
DUT Type:	Porta	ble 700/800-Band P1	XG-25P 7/800	-						
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



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 \leq 3.5 W/kg (F1-F8), testing of all other required channels is not necessary.
- 3. When the SAR for all antennas tested using the default battery is \leq 4.0 W/kg (F1-F8), test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas (F9-F14). Note: This procedure was applied separately to the 700 MHz band and the 800 MHz band.
- 4. When test reduction applies, the data table entries for such configurations are denoted with N/A (Not Applicable).



Test Report Issue Date September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

RF Exposure Category Specific Absorption Rate Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



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-H	HELD SAF	R EVALU	ATIO	N RES	JLTS (Syst	em & Scan	Radio M	lodel	Variant	Comparis	on)
TAE	BLE 2		XG-25P 7	7/800 S	CAN Rad	dio Keypad Va	ariant Model	XG-2	5P 7/8	00 SYST	EM Radio Ba	se Model
С			Count		1	2	3	Council		4	5	6
	Antenna	Test	Cond. Power Before		SAR kg (1g)	SAR W/kg (1g)	Battery	Cond. Power Before	_	SAR cg (1g)	SAR W/kg (1g)	Battery
R	Accessory ID #	Freq. (MHz)	Test (W)	100%	% ptt d/f	50% ptt d/f	Accessory ID #	Test (W)	100%	6 ptt d/f	50% ptt d/f	Accessory ID #
		. ,	()	Dri	ft (dB)	50%+droop		()	Dri	ift dB	50%+droop	
1		764.0	2.93			N/A		2.90			N/A	
2		776.0	2.96			N/A		2.95			N/A	
3		794.0	2.90			N/A		2.93			N/A	
4		805.0	2.95			N/A		2.90			N/A	
5	1	806.0	3.20			N/A	_	3.20			N/A	
6		824.0	3.19	F15	1.32	0.660	d	3.20	F3	1.23	0.615	d
7		024.0	3.13	1 13	-0.244	0.698	ď	0.20	13	-0.620	0.709	u
8		851.0	3.13			N/A		3.16			N/A	
9		869.0	3.17			N/A		3.20			N/A	
10		764.0	2.93			N/A	2.90			N/A		
11		776.0	2.96	F16	3.23	1.62	а	2.95	F9	3.25	1.63	a
12		770.0	2.50	1 10	-0.003	1.62	a	2.55	13	-0.168	1.69	a
13		794.0	2.90			N/A		2.93			N/A	
14	2	805.0	2.95			N/A		2.90	N/A			
15		806.0	3.20			N/A		3.20			N/A	
16		824.0	3.19			N/A		3.20			N/A	
17		851.0	3.13			N/A		3.16			N/A	
18		869.0	3.17			N/A		3.20			N/A	
		SAR LIMI	TS			HEAD	SPATIAL	PEAK		RF EXP	OSURE CATE	GORY
FCC	47 CFR 2.109	Health	Canada Sa	fety Co	de 6	8.0 W/kg	1 gram av	/erage		Occup	ational / Contr	olled
Note	s											
Test	Mode = CW (U	nmodulated (Continuous V	Vave)		Phantom =	Side Planar Pha	intom				
C = 0	Column; R = Ro	DW .				Fx (F = Fac	e) denotes the c	orrespondir	ng Face	SAR Plot	# as shown in /	Appendix A
N/A =	Not Applicabl	e		Test reduct	ion procedures a	applied for S	Scan mo	del = FCC	KDB Inquiry #	235657		
Fron	ront of DUT Distance to Planar Phantom (see Appendix D)					Sh	enna Distance to Planar Phantom (see Appendix D)				lix D)	
	(Front of DUT Parallel to Planar Phantom)					Antenna 1				Antenna 2		
	2.5 cm					5.4 cm				5.4 cm		

Applicant:	HAF	RRIS Corporation	FCC ID:	IC:		3636B-0073	HARRIS			
DUT Type:	Porta	ble 700/800-Band P1	XG-25P 7/800	-						
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s) RF Exposure Category
Specific Absorption Rate Occupational (Controlled)

Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category



TAI	BLE 3			BOD	Y-WOF	RN S	AR I	EVAL	JATION	N RESUL	.TS					
	Dev	vice-Und	er-Test	XG-2	5P 7/800	Radio	o Tran	nsceiver	(System	1)						
	Body-worn	Accesso	ory ID#	5 (De	fault)											
	Audio	Accesso	ory ID#	G3a (Default)											
		Test	Date(s)	Sept.	4, 2012											
С					1	2	2		3	4		5	6		7	8
		_	Cond.		SAR W/k	g 1g			SAR W/kg	g 1g		SAR W/k	g 1g		SAR W/k	g 1g
R	Antenna Accessory	Test Freq.	Power Before	Bat	ery a (Ad	dition	al)	Batt	ery b (Ad	ditional)	Batt	ery c (Ad	lditional)	В	attery d ([Default)
	ID#	(MHz)	Test	100%	ptt d/f	50% p	ott 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
			(W)	Drif	t (dB)	50%+	droop	Drif	ft dB	50%+droop	Dri	ft dB	50%+droop	Dı	rift dB	50%+droop
1		764.0	2.90		N/A				N/A			N/A			N/A	
2		776.0	2.95		N/A				N/A			N/A		B1	4.95	2.48
3		770.0	2.00		14//(14//			14/71			-0.164	2.57
4		794.0	2.02		N/A		_		N/A			B1/A		B2	5.38	2.69
5		794.0	2.93		IN/A				IN/A			N/A		DZ	-0.003	2.69
6	1	805.0	2.90		N/A				N/A			N/A			N/A	
7	-	806.0	3.20		N/A				N/A			N/A			N/A	
8		824.0	3.20		N/A				N/A			N/A		В3	5.29	2.65
9		024.0	5.20		14/74				IV/A			14/74		В	0.032	n/a
10		851.0	3.16		N/A				N/A			N/A			N/A	
11		869.0	3.20		N/A				N/A			N/A		B4	3.06	1.53
12			0.20		N/A										-0.286	1.63
13		764.0	2.90		N/A	ı			N/A	1		N/A			N/A	
14		776.0	2.95	В9	4.48	2.2		B10	5.33	2.67	B11 5.85		2.93	B5	7.18	3.59
15			2.95		-0.119	2.3	30		-0.196	2.79		-0.154	3.03		-0.163	3.73
16		794.0	2.93		N/A			N/A			N/A			В6	6.37	3.19
17		205.0			21/2										-0.289	3.40
18	2	805.0	2.90		N/A				N/A			N/A			N/A	
19		806.0	3.20		N/A		40		N/A	0.50		N/A	0.40		N/A	0.00
20		824.0	3.20	B12	4.79		40	B13	5.05	2.53	B14	4.31	2.16	В7	5.32	2.66
21		851.0	3.16		-0.195 N/A	2.	51		0.276 N/A	n/a		-0.325 N/A	2.32		-0.149 N/A	2.75
23		001.0	3.10		IN/A				IN/A			IV/A			4.01	2.01
24		869.0	3.20		N/A				N/A			N/A		В8	-0.273	2.01
		SAF	RLIMITS					BODY	1	SPAT	TIAL PE	AK	RF F	XPOSU	RE CATE	
FC	CC 47 CFR 2.1			anada S	afety Cod	de 6		8.0 W/I			m avera				al / Contr	
Note										-						
	d 1: 764-776 N Freq.: 776.0 N				2: 794-806 req.: 794.0								Band 4: Test Fre			
	Column; R = F			. 55(1		12		Bx (B = Body) denotes the corresponding Body SAR P								pendix A
Test	Mode = CW (Unmodula	ted Contin	nuous W	ave)			Phantom = Barski Planar Phantom								
В	Back of DUT D		o Planar F Parallel to				(D)	•				nar Phanton				
	(Dack	UI KAUIO	1.6 cm		PHANTON	'/				Antenna 1					nna 2	
			1.0 (11)					1.9 cm				1.9 cm				

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS			
DUT Type:	Porta	ortable 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800									
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Occup

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



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*.
- 2. When the body SAR of an antenna is ≤ 3.5 W/kg (B1-B8), testing of all other required channels is not necessary for that antenna.
- 3. When the SAR for all antennas tested using the thinnest* battery is \leq 4.0 W/kg (B1-B8), test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas (B9-B14). Note: This procedure was applied separately to the 700 MHz band and the 800 MHz band.
- 4. The audio accessory G3a 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).
- * All battery options are the same thickness; therefore preliminary evaluations were performed to establish the default battery.



Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release)

RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



TABLE 4 **BODY-WORN SAR EVALUATION RESULTS Device-Under-Test** XG-25P 7/800 Radio Transceiver (System) **Body-worn Accessory ID#** 1 (Additional) Audio Accessory ID# G3a (Default) Test Date(s) Sept. 4 & 5, 2012 C 8 SAR W/kg 1g SAR W/kg 1g SAR W/kg 1g SAR W/kg 1g Cond. Test Power **Antenna** Battery a (Additional) Battery b (Additional) Battery c (Additional) Battery d (Default) R Accessory Freq. **Before** 100% 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 50% ptt d/f ID# (MHz) **Test** (W) Drift (dB) 50%+droop Drift dB 50%+droop Drift dB 50%+droop Drift dB 50%+droop 764.0 2.90 N/A N/A N/A N/A 1 2 1.15 0.575 776.0 2.95 N/A N/A N/A **B15** -0.311 0.618 4 1.04 0.520 794.0 2.93 N/A N/A N/A R16 5 -0.280 0.555 2.90 N/A 6 805.0 N/A N/A N/A 1 7 806.0 N/A N/A N/A N/A 3.20 8 1.03 0.515 824.0 3.20 N/A N/A N/A **B17** -0.403 9 0.565 10 851.0 3.16 N/A N/A N/A N/A 0.627 11 0.314 869.0 3.20 N/A N/A N/A **B18** 12 -0.445 0.347 13 764.0 N/A N/A 2.90 N/A N/A 14 1.67 0.835 N/A N/A R19 776.0 N/A 2.95 15 -0.1270.860 16 1.09 0.545 1.29 0.645 1.55 0.775 1.69 0.845 794.0 B23 **B24 B25** B20 2.93 17 -0.067 0.553 -0.269 0.686 -0.346 0.839 -0.262 0.898 18 805.0 N/A 2.90 N/A N/A N/A 2 19 806.0 3.20 N/A N/A N/A N/A 20 1.08 0.540 1.11 0.555 1.40 0.700 1.55 0.775 824.0 3.20 **B26 B27 B28 B21** 21 -0.226 0.569 -0.225 0.585 -0.321 0.754 -0.274 0.825 22 851.0 3.16 N/A N/A N/A N/A 23 0.936 0.468 869.0 N/A N/A N/A 3.20 24 -0.418 0.515 **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 Band 1: 764-776 MHz Band 2: 794-806 MHz Band 3: 806-825 MHz Band 4: 851-870 MHz Test Freq.: 794.0 MHz Test Freq.: 824.0 MHz Test Freq.: 869.0 MHz Test Freq.: 776.0 MHz Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A C = Column; R = RowTest Mode = CW (Unmodulated Continuous Wave) Phantom = Barski Planar Phantom Shortest Antenna Distance to Planar Phantom (see Appendix D) Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom) Antenna 1 Antenna 2 4.5 cm 4.7 cm 4.7 cm

Applicant:	HAF	RRIS Corporation	FCC ID:	IC:		3636B-0073	HARRIS				
DUT Type:	Porta	ortable 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800									
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u>
Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



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*.
- 2. When the body SAR of an antenna is ≤ 3.5 W/kg (B15-B22), testing of all other required channels is not necessary for that antenna.
- 3. When the SAR for all antennas tested using the thinnest* battery is \leq 4.0 W/kg (B15-B22), test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas (B23-B28). Note: This procedure was applied separately to the 700 MHz band and the 800 MHz band.
- 4. The audio accessory G3a 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).
- * All battery options are the same thickness; therefore preliminary evaluations were performed to establish the default battery.



Test Report Issue Date

Test Report Serial No. 082712OWD-T1184-S90M

Rev. 1.0 (1st Release) RF Exposure Category



Description of Test(s) September 20, 2012 Specific Absorption Rate

Occupational (Controlled)

TAI	BLE 5			BOD	Y-WO	RNSA	AR EV	/AL	JATION	I RESUL	.TS					
	Dev	vice-Und	ler-Test	XG-2	5P 7/800	Radio	Transc	eiver	(System)						
	Body-worn	Access	ory ID#	3 (Ad	ditional)											
	Audio	Access	ory ID#	G3a (Default)											
		Test	Date(s)	Sept.	5, 2012											
С					1	2			3	4		5	6		7	8
	A	Toot	Cond.		SAR W/k	g 1g			SAR W/kg) 1g		SAR W/k	g 1g		SAR W/k	g 1g
R	Antenna Accessory	Test Freq.	Power Before		tery a (Ad				ery b (Add		1		lditional)		attery d ([,
	ID#	(MHz)	Test (W)		ptt d/f	50% ptt			ptt d/f	50% ptt d/f		ptt d/f	50% ptt d/f		% ptt d/f	50% ptt d/f
				Drif	t (dB)	50%+dr	оор	Drif		50%+droop	Dri	ft dB	50%+droop	Dr	ift dB	50%+droop
1		764.0	2.90		N/A				N/A			N/A			N/A	1
2		776.0	2.95		N/A				N/A			N/A		B29	0.704	0.352
3															-0.336	0.380
4		794.0	2.93		N/A				N/A			N/A		B30	0.729	0.365
5		701.0	2.00		14// (14/71					500	-0.334	0.394
6	1	805.0	2.90		N/A				N/A			N/A			N/A	
7	•	806.0	3.20		N/A				N/A			N/A			N/A	
8		824.0	3.20		N/A				N/A			N/A		B31	0.793	0.397
9		024.0	3.20		IN/A				IN/A			IN/A		БЭТ	-0.320	0.427
10		851.0	3.16		N/A				N/A			N/A			N/A	
11					N/A										0.430	0.215
12		869.0	3.20		N/A				N/A			N/A		B32	-0.359	0.234
13		764.0	2.90		N/A				N/A			N/A			N/A	
14															1.09	0.545
15		776.0	2.95		N/A			N/A				N/A		B33	-0.138	0.563
16		7040		D07	1.10	0.55	50	200	0.835	0.418	Doo	1.36	0.680	D0.4	1.51	0.755
17		794.0	2.93	B37	-0.167	0.57		338	-0.162	0.433	B39	-0.375	0.741	B34	-0.273	0.804
18		805.0	2.90		N/A				N/A	1		N/A			N/A	,
19	2	806.0	3.20		N/A				N/A			N/A			N/A	
20				5.40	1.10	0.55	0 _		1.00	0.500		1.36	0.680		1.40	0.700
21		824.0	3.20	B40	-0.272	0.58		341	-0.326	0.539	B42	-0.335	0.735	B35	-0.126	0.721
22		851.0	3.16		N/A				N/A			N/A	1		N/A	
23															0.908	0.454
24		869.0	3.20		N/A				N/A			N/A		B36	-0.431	0.501
		SAF	RLIMITS					BODY	1	SPAT	ΓIAL PE	AK	RF EX	KPOSU	RE CATE	GORY
FC	C 47 CFR 2.1	093	Health Ca	anada S	afety Co	de 6	8.	.0 W/I	kg	1 gra	m avera	ige			al / Contr	
Note		•		•												
Test	d 1: 764-776 N Freq.: 776.0 N	ИHz			2: 794-806 req.: 794.		,	Band 3: 806-825 MHz Test Freq.: 824.0 MHz Band 4: 851-870 MHz Test Freq.: 869.0 MHz								
	Column; R = R							Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appe					pendix A			
	Mode = CW (nandiy F	Phantom = Barski Planar Phantom Shortest Antenna Distance to Plan				Planar Phantom (see Appendix D)					
	Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom)						D) Shortest Antenna Distant Antenna 1			````						
			5.4 cm					5.6 cm 5.6 cm								

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS			
DUT Type:	Porta	ortable 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800									
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)
Specific Absorption Rate

<u>Test Report Revision No.</u> Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



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*.
- 2. When the body SAR of an antenna is ≤ 3.5 W/kg (B29-B36), testing of all other required channels is not necessary for that antenna.
- 3. When the SAR for all antennas tested using the thinnest* battery is \leq 4.0 W/kg (B29-B36), test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas (B37-B42). Note: This procedure was applied separately to the 700 MHz band and the 800 MHz band.
- 4. The audio accessory G3a 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).
- * All battery options are the same thickness; therefore preliminary evaluations were performed to establish the default battery.



Test Report Serial No. 082712OWD-T1184-S90M



Test Report Revision No.

Rev. 1.0 (1st Release) Test Report Issue Date RF Exposure Category Description of Test(s) September 20, 2012 Specific Absorption Rate Occupational (Controlled)

TAI	BLE 6			BOD	Y-WOF	RN S	AR I	EVAL	UATIO	N RESUL	.TS					
	Dev	/ice-Und	ler-Test	XG-2	5P 7/800	Radio	Trar	sceive	r (System	1)						
	Body-worn	Accesso	ory ID#	4 (Ad	ditional)											
	Audio	Accesso	ory ID#	G3a (Default)											
		Test	Date(s)	Sept.	5 & 6, 20)12										
С					1	2	2		3	4		5	6		7	8
			Cond.		SAR W/kg	g 1g			SAR W/kg	g 1g		SAR W/k	g 1g		SAR W/k	g 1g
R	Antenna Accessory	Test Freq.	Power Before	Batt	ery a (Ad	dition	al)	Batt	ery b (Ad	ditional)	Bat	tery c (Ad	lditional)	В	attery d ([Default)
	ID#	(MHz)	Test	100%	ptt d/f	50% p	tt d/f	100%	ptt d/f	50% ptt d/f	1009	% ptt d/f	50% ptt d/f	1009	% ptt d/f	50% ptt d/f
			(W)	Drif	t (dB)	50%+0	droop	Dri	ft dB	50%+droop	Dr	ift dB	50%+droop	Dr	ift dB	50%+droop
1		764.0	2.90		N/A				N/A			N/A			N/A	
2		776.0	2.95		N/A				N/A			N/A		B43	2.69	1.35
3		770.0	2.93		IN/A				IN/A			IN/A		543	-0.361	1.46
4		70.4.0	0.00		.							.		D. / /	3.06	1.53
5		794.0	2.93		N/A				N/A			N/A		B44	-1.74	2.28
6	1	805.0	2.90		N/A				N/A			N/A			N/A	
7		806.0	3.20		N/A				N/A			N/A			N/A	
8															1.96	0.980
9		824.0	3.20		N/A				N/A			N/A		B45	0.708	n/a
10		851.0	3.16		N/A				N/A			N/A			N/A	
11															1.11	0.555
12		869.0	3.20		N/A				N/A			N/A		B46	-0.100	0.568
13		764.0	2.90		N/A			N/A				N/A			N/A	
14		770.0	0.05		NI/A				N/A			NI/A		D47	6.46	3.23
15		776.0	2.95		N/A				N/A			N/A		B47	-0.113	3.32
16		794.0	2.93	B51 4.88 2.44		B52	5.64	2.82	B53	6.68	3.34	B48	7.23	3.62		
17		754.0	2.55	501	-0.343	2.6	64	D02	-0.475	3.15	D00	-0.329	3.60	D-10	-0.247	3.83
18	2	805.0	2.90		N/A				N/A			N/A			N/A	
19	-	806.0	3.20		N/A				N/A			N/A			N/A	
20		824.0	3.20	B54	4.80	2.4	40	B55	4.37	2.19	B56	5.65	2.83	B49	6.28	3.14
21		024.0	3.20	D34	-0.350	2.6	60		-0.359	2.37		-0.357	3.07	D48	-0.194	3.28
22		851.0	3.16		N/A				N/A			N/A			N/A	
23		869.0	3.20		N/A				N/A			N/A		B50	4.42	2.21
24									N/A			IN/A		D00	-0.333	2.39
		SAF	RLIMITS					BOD	Y	SPAT	ΓIAL PE	AK	RF E	XPOSU	RE CATE	GORY
FC	C 47 CFR 2.1	093	Health C	anada S	afety Coc	le 6		8.0 W/	kg	1 gra	m aver	age	Occ	upation	al / Contr	olled
Note	e s d 1: 764-776 M	1⊔		Bond (2: 794-806	- NAL !~		Band 3: 806-825 MHz Band 4: 851-870 MHz								
	7: 764-776 N Freq.: 776.0 N				2: 794-806 req.: 794.0					3: 806-825 N req.: 824.0 N			Test Fre			
C = 0	Column; R = F	low						Bx (I	B = Body)	denotes the	corresp	onding Bo	ody SAR Plot	# as sh	own in Ap	pendix A
	Mode = CW (Phai		rski Planar F						
В	ack of DUT D											D)				
	(Back of Radio Parallel to Planar Phantom)							Antenna 1 Antenna 2 3.3 cm 3.3 cm								
	3.2 cm									0.0 0111				0.0	J111	

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS	
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	A	
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 0827120WD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate <u>Test Report Revision No.</u> Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



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*.
- 2. When the body SAR of an antenna is ≤ 3.5 W/kg (B43-B50), testing of all other required channels is not necessary for that antenna.
- 3. When the SAR for all antennas tested using the thinnest* battery is \leq 4.0 W/kg (B43-B50), test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas (B51-B56). Note: This procedure was applied separately to the 700 MHz band and the 800 MHz band.
- 4. The audio accessory G3a 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).
- * All battery options are the same thickness; therefore preliminary evaluations were performed to establish the default battery.



Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release)

RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



TABLE 7 **BODY-WORN SAR EVALUATION RESULTS Device-Under-Test** XG-25P 7/800 Radio Transceiver (System) **Body-worn Accessory ID#** 6 (Additional) Audio Accessory ID# G3a (Default) Test Date(s) Sept. 6, 2012 C 8 SAR W/kg 1g SAR W/kg 1g SAR W/kg 1g SAR W/kg 1g Cond. **Antenna** Test **Power** Battery a (Additional) **Battery b (Additional)** Battery c (Additional) Battery d (Default) R Accessory Freq. **Before** 100% 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 50% ptt d/f ID# (MHz) **Test** (W) Drift (dB) 50%+droop Drift dB 50%+droop Drift dB 50%+droop Drift dB 50%+droop 764.0 2.90 N/A N/A N/A N/A 1 2 1.51 0.755 776.0 2.95 N/A N/A N/A **B57** 3 -0.193 0.789 4 1.76 0.880 794.0 2.93 N/A N/A N/A R58 5 -0.279 0.938 2.90 N/A 6 805.0 N/A N/A N/A 1 7 806.0 N/A N/A N/A N/A 3.20 8 1.63 0.815 824.0 3.20 N/A N/A N/A **B**59 -0.093 0.833 9 10 851.0 3.16 N/A N/A N/A N/A 11 0.913 0.457 869.0 3.20 N/A N/A N/A **B60** 12 -0.270 0.486 13 764.0 N/A N/A N/A N/A 2.90 14 2.72 1.36 N/A N/A **R61** 776.0 N/A 2.95 15 -0.149 1.41 16 1.73 0.865 2.29 1.15 2.51 1.26 2.80 1.40 794.0 B65 **B66 B67** B62 2.93 17 -0.272 0.921 -0.241 1.21 -0.241 1.33 -0.225 1.47 18 805.0 N/A N/A N/A 2.90 N/A 2 19 806.0 3.20 N/A N/A N/A N/A 20 1.60 0.800 1.60 0.800 1.99 0.995 2.35 1.18 824.0 3.20 **B68** B69 **B70 B63** 21 -0.194 0.837 -0.057 0.811 -0.310 1.07 -0.127 1.21 22 851.0 3.16 N/A N/A N/A N/A 23 1.37 0.685 869.0 N/A N/A N/A 3.20 **B64** 24 -0.399 0.751 **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 Band 1: 764-776 MHz Band 2: 794-806 MHz Band 3: 806-825 MHz Band 4: 851-870 MHz Test Freq.: 869.0 MHz Test Freq.: 794.0 MHz Test Freq.: 824.0 MHz Test Freq.: 776.0 MHz Bx (B = Body) denotes the corresponding Body SAR Plot # as shown in Appendix A C = Column; R = Row Test Mode = CW (Unmodulated Continuous Wave) Phantom = Barski Planar Phantom Back of DUT Distance to Planar Phantom (see Appendix D) Shortest Antenna Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom) Antenna 1 Antenna 2 3.5 cm 3.7 cm 3.7 cm

Applicant:	HAF	RRIS Corporation	ion FCC ID: OWDTR-0073-E				3636B-0073	HARRIS	
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na				
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 0827120WD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



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*.
- 2. When the body SAR of an antenna is ≤ 3.5 W/kg (B57-B64), testing of all other required channels is not necessary for that antenna.
- 3. When the SAR for all antennas tested using the thinnest* battery is \leq 4.0 W/kg (B57-B64), test additional batteries using the antenna and channel configuration that resulted in the highest SAR among all antennas (B65-B70). Note: This procedure was applied separately to the 700 MHz band and the 800 MHz band.
- 4. The audio accessory G3a 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).
- * All battery options are the same thickness; therefore preliminary evaluations were performed to establish the default battery.



Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release)

RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



	BODY-V	VORN SA	R EVAL	JATIC	N RE	SULTS (Sys	tem & Scan	Radio I	Model	Varian	t Comparis	son)	
TAE	BLE 8		XG-25P	7/800 S	CAN Ra	adio Keypad V	ariant Model	XG-2	5P 7/8	00 SYST	EM Radio Ba	se Model	
Body	y-worn Acces	ssory ID#	5 (Defaul	t)				_					
Aud	io Accessor	y ID #	G3a (Def	ault)									
С					1	2	3			4	5	6	
	Antenna	Test	- Cond. Power Before	_	SAR kg (1g)	SAR W/kg (1g)	Battery	Cond. Power Before	_	SAR kg (1g)	SAR W/kg (1g)	Battery	
R	Accessory ID #	Freq. (MHz)	Test (W)	100%	% ptt d/f	50% ptt d/f	Accessory ID #	Test (W)	100%	6 ptt d/f	50% ptt d/f	Accessory ID#	
		((**)	Drif	ft (dB)	50%+droop		(**)	Dri	ift dB	50%+droop		
1		764.0	2.93			N/A		2.90			N/A		
2		776.0	2.96			N/A		2.95			N/A		
3					5.25	2.63	•			5.38	2.69		
4		794.0	2.90	B71	0.001	n/a	d	2.93	B2	-0.003	2.69	d	
5	1	805.0	2.95		I	N/A		2.90	N/A			l	
6		806.0	3.20			N/A	N/A 3.20			N/A			
7		824.0	3.19			N/A		3.20	N/A				
8		851.0	3.13			N/A		3.16			N/A		
9		869.0	3.17			N/A		3.20			N/A		
10		764.0	2.93			N/A		2.90			N/A		
11		770.0	0.00	D70	4.49	2.25	.1	0.05	Dr	7.18	3.59		
12		776.0	2.96	B72	0.066	n/a	d	2.95	B5	-0.163	3.73	d	
13		794.0	2.90			N/A		2.93			N/A		
14	2	805.0	2.95			N/A		2.90			N/A		
15		806.0	3.20			N/A		3.20			N/A		
16		824.0	3.19			N/A		3.20			N/A		
17		851.0	3.13			N/A		3.16			N/A		
18		869.0	3.17			N/A		3.20			N/A		
		SAR LIMI	TS			BODY	SPATIAL	PEAK		RF EXP	OSURE CATE	GORY	
FCC	47 CFR 2.109	Health	n Canada Sa	fety Co	de 6	8.0 W/kg	1 gram av	verage		Occup	ational / Contr	olled	
Note	s												
Test	Test Mode = CW (Unmodulated Continuous Wave)					Phantom =	Barski Planar Pl	hantom					
C = 0	C = Column; R = Row					Bx (B = Boo	dy) denotes the o	correspondi	ng Body	/ SAR Plot	# as shown in	Appendix A	
N/A =	N/A = Not Applicable				Test reduct	ion procedures a	applied for S	Scan mo	del = FCC	KDB Inquiry #2	235657		
Back	Back of DUT Distance to Planar Phantom (see Appendix D)				D) Sh	Shortest Antenna Distance to F			ce to Planar Phantom (see Appendix D)				
	(Back of Radio Parallel to Planar Phantom)					Antenna 1 Antenna 2							
	1.6 cm				1.9 cm 1.9 cm								

Applicant:	HAF	RRIS Corporation	IS Corporation FCC ID: OWDTR-0073-E IC: 3636B-0073					HARRIS	
DUT Type:	Porta	ble 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800							
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)



	BODY-V	VORN SA	R EVALU	JATIC	N RE	SULTS (Sys	tem & Scan	Radio I	Vlodel	Varian	t Comparis	son)	
TAE	BLE 9		XG-25P 7	7/800 S	CAN Ra	idio Keypad V	ariant Model	XG-2	5P 7/8	00 SYST	EM Radio Ba	se Model	
Body	y-worn Acces	ssory ID#	1 (Additio	nal)									
Audi	io Accessor	y ID #	G3a (Defa	ault)									
С			Cond.		1	2	3	Cond.		4	5	6	
	Antenna	Test	Power Before		SAR kg (1g)	SAR W/kg (1g)	Battery	Power Before		SAR kg (1g)	SAR W/kg (1g)	Battery	
R	Accessory ID #	Freq. (MHz)	Test (W)	100%	% ptt d/f	50% ptt d/f	Accessory ID #	Test (W)	100%	6 ptt d/f	50% ptt d/f	Accessory ID #	
			(11)	Drif	ft (dB)	50%+droop		(**)	Dri	ft dB	50%+droop		
1		764.0	2.93			N/A		2.90			N/A		
2		776.0	2.96	B73	1.21	0.605	d	2.95	D15	1.15	0.575	4	
3		776.0	2.96	D/3	-0.273	0.644	d	2.95	B15 -0.311 0.618 d			a	
4		794.0	2.90		•	N/A		2.93	N/A				
5	1	805.0	2.95			N/A	N/A 2.90			N/A			
6 806.0 3.20						N/A	N/A 3.20				N/A		
7		824.0	3.19	N/A	N/A			N/A					
8		851.0	3.13			N/A	N/A			N/A			
9		869.0	3.17			N/A		3.20	N/A				
10		764.0	2.93			N/A		2.90			N/A		
11		776.0	2.96			N/A		2.95			N/A		
12		794.0	2.90	B74	1.94	0.970	d	2.93	B20	1.69	0.845	р	
13		734.0	2.90	574	-0.022	0.975	u	2.93	D20	-0.262	0.898	ŭ	
14	2	805.0	2.95			N/A		2.90			N/A		
15		806.0	3.20			N/A		3.20			N/A		
16		824.0	3.19			N/A		3.20			N/A		
17		851.0	3.13			N/A		3.16			N/A		
18		869.0	3.17			N/A		3.20			N/A		
		SAR LIMI	TS			BODY	SPATIAL	PEAK		RF EXP	OSURE CATE	GORY	
FCC	47 CFR 2.109	Health	n Canada Sa	fety Co	de 6	8.0 W/kg	1 gram av	verage		Occup	ational / Contr	olled	
Notes	Notes												
Test Mode = CW (Unmodulated Continuous Wave)						Phantom =	Barski Planar Pl	nantom					
C = C	C = Column; R = Row					Bx (B = Boo	dy) denotes the o	correspondi	ng Body	SAR Plot	# as shown in	Appendix A	
N/A =	N/A = Not Applicable					Test reduct	ion procedures a	applied for S	Scan mo	del = FCC	KDB Inquiry #	235657	
Back	Back of DUT Distance to Planar Phantom (see Appendix D)					Sh	Shortest Antenna			to Planar Phantom (see Appendix D)			
	(Back of Radio Parallel to Planar Phantom)					Antenna 1 Antenna 2							
	4.5 cm					4.7 cm 4.7 cm							

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS		
DUT Type:	Porta	table 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800						-		
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5.4 cm

<u>Date(s) of Evaluation</u> September 04-07, 2012

Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



5.6 cm

BODY-WORN SAR EVALUATION RESULTS (System & Scan Radio Model Variant Comparison) XG-25P 7/800 SCAN Radio Keypad Variant Model XG-25P 7/800 SYSTEM Radio Base Model TABLE 10 **Body-worn Accessory ID#** 3 (Additional) Audio Accessory ID # G3a (Default) 2 3 4 5 6 Cond. Cond. SAR SAR SAR SAR **Power Power Antenna Test** W/kg (1g) W/kg (1g) **Battery** W/kg (1g) W/kg (1g) **Battery Before Before** Freq. R Accessory Accessory **Accessory Test Test** 100% ptt d/f 50% ptt d/f 100% ptt d/f 50% ptt d/f ID# (MHz) ID# ID# (W) (W) Drift (dB) 50%+droop Drift dB 50%+droop 1 764.0 2.93 N/A 2.90 N/A 2 776.0 2.96 N/A N/A 2.95 3 794.0 2.90 N/A 2.93 N/A 4 805.0 2.95 N/A 2.90 N/A 1 5 806.0 N/A N/A 3.20 3.20 0.804 0.793 0.397 6 0.402 **B31** B75 824.0 3.19 d 3.20 d 7 -0.2590.427 -0.320 0.427 851.0 3.13 N/A 8 N/A 3.16 9 869.0 3.17 N/A 3.20 N/A 10 764.0 2.93 N/A 2.90 N/A 11 776.0 2.96 N/A 2.95 N/A 12 1.54 0.770 1.51 0.755 794.0 2.90 d 2.93 13 0.026 n/a -0.273 0.804 14 2 805.0 2.95 N/A N/A 2.90 806.0 3.20 N/A N/A 15 3.20 16 824.0 N/A N/A 3.19 3.20 17 851.0 N/A 3.16 N/A 3.13 18 869.0 3.17 N/A 3.20 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 = Barski 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 Shortest Antenna Distance to Planar Phantom (see Appendix D) Back of DUT Distance to Planar Phantom (see Appendix D) (Back of Radio Parallel to Planar Phantom) Antenna 1 Antenna 2

Applicant:	HAF	RRIS Corporation	FCC ID:	FCC ID: OWDTR-0073-E			3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Tran	sceiver with Bluetooth	DUT Na	ame:	-	
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5.6 cm



3.2 cm

Date(s) of Evaluation September 04-07, 2012

Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



3.3 cm

TA	BLE 11		XG-25P	7/800 S	CAN Ra	dio Keypad V	ariant Model	XG-2	5P 7/80	00 SYST	EM Radio Ba	se Model
	y-worn Acce	ssory ID#	4 (Additio	nal)								
Auc	io Accessor	y ID #	G3a (Def	ault)								
С					1	2	3			4	5	6
	Antenna	Test	Cond. Power Before		SAR kg (1g)	SAR W/kg (1g)	Battery	Cond. Power Before		AR g (1g)	SAR W/kg (1g)	Battery
R	Accessory ID #	Freq. (MHz)	Test (W)	100%	% ptt d/f	50% ptt d/f	Accessory ID #	Test (W)	100%	ptt d/f	50% ptt d/f	Accessory ID #
			(,	Drif	ft (dB)	50%+droop		()	Dri	ft dB	50%+droop	
1		764.0	2.93			N/A		2.90			N/A	
2		776.0	2.96			N/A		2.95			N/A	
3		794.0	2.90	B77	2.21	1.11	d	2.93	B44	3.06	1.53	d
4		794.0	2.90	БП	-0.071	1.12	u	2.93	-1.74 2.28			u
5	1	805.0	2.95			N/A		2.90	N/A			
6		806.0	3.20			N/A		3.20	N/A			
7		824.0	3.19			N/A		3.20	N/A			
8		851.0	3.13			N/A		3.16			N/A	
9		869.0	3.17			N/A		3.20			N/A	
10		764.0	2.93			N/A		2.90			N/A	
11		776.0	2.96			N/A		2.95			N/A	
12		794.0	2.90	B78	5.24	2.62	d	2.93	B48	7.23	3.62	d
13		754.0	2.50	570	-0.001	2.62	u	2.55	D-10	-0.247	3.83	u
14	2	805.0	2.95			N/A		2.90			N/A	
15		806.0	3.20			N/A		3.20			N/A	
16		824.0	3.19			N/A		3.20			N/A	
17		851.0	3.13			N/A		3.16			N/A	
18		869.0	3.17			N/A		3.20			N/A	
		SAR LIM	ITS			BODY	SPATIAL	PEAK		RF EXP	OSURE CATE	GORY
FC	FCC 47 CFR 2.1093 Health Canada Safety Code 6					8.0 W/kg	1 gram av	verage		Occup	ational / Contr	olled
Notes												
Test	Mode = CW (L	Inmodulated	Continuous \	Nave)		Phantom =	Barski Planar Ph	nantom				
C =	C = Column; R = Row					Bx (B = Boo	dy) denotes the o	correspondi	ng Body	SAR Plot	# as shown in	Appendix A
N/A	N/A = Not Applicable					Test reduction procedures applied for Scan model = FCC KDB Inquiry #235657						235657
Bac	Back of DUT Distance to Planar Phantom (see Appendix D)) Shortest Antenna Distance to Plana				r Phantor	m (see Append	lix D)	
	(Back of Radio Parallel to Planar Phantom)				Antenna 1 Antenna 2							

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS	
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-		
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3.3 cm



Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate

Test Report Revision No.
Rev. 1.0 (1st Release)



	BODY-V	VORN SA	R EVAL	JATIC	N RES	SULTS (Sys	tem & Scan	Radio I	Vlodel	Varian	t Comparis	son)
TAE	BLE 12		XG-25P 7	7/800 S	CAN Ra	dio Keypad V	ariant Model	XG-2	5P 7/8	00 SYST	EM Radio Ba	se Model
Body	/-worn Acces	ssory ID#	6 (Additio	nal)								
Audi	io Accessor	y ID #	G3a (Defa	ault)								
С			Cond.		1	2	3	Cond.		4	5	6
	Antenna	Test	Power Before		AR g (1g)	SAR W/kg (1g)	Battery	Power Before		SAR kg (1g)	SAR W/kg (1g)	Battery
R	Accessory ID #	Freq. (MHz)	Test (W)	100%	6 ptt d/f	50% ptt d/f	Accessory ID #	Test (W)	100%	6 ptt d/f	50% ptt d/f	Accessory ID #
			(11)	Drif	t (dB)	50%+droop		(11)	Dri	ft dB	50%+droop	
1		764.0	2.93			N/A	N/A		N/A			
2		776.0	2.96			N/A		2.95			N/A	
3		794.0	2.90	B79	1.78	0.890	d	2.93	B58	1.76	0.880	- d
4		794.0	2.90	D/9	-0.241	0.941	u	2.93	D30	-0.279	u	
5	1	805.0	2.95			N/A		2.90	2.90 N/A			
6		806.0	3.20		N/A		3.20			N/A		
7		824.0	3.19			N/A	N/A			N/A		
8		851.0	3.13			N/A	N/A			N/A		
9		869.0	3.17			N/A	N/A			N/A		
10		764.0	2.93			N/A		2.90			N/A	
11		776.0	2.96			N/A		2.95			N/A	
12		704.0	2.00	B80	2.90	1.45	d	2.02	B62	2.80	1.40	d
13		794.0	2.90	D00	-0.168	1.51	d	2.93	D02	-0.225	1.47	d
14	2	805.0	2.95			N/A		2.90			N/A	
15		806.0	3.20			N/A		3.20			N/A	
16		824.0	3.19			N/A		3.20			N/A	
17		851.0	3.13			N/A		3.16			N/A	
18		869.0	3.17			N/A		3.20			N/A	
		SAR LIMI	TS			BODY	SPATIAL	PEAK		RF EXP	OSURE CATE	GORY
FCC	47 CFR 2.109	Health	n Canada Sa	fety Co	de 6	8.0 W/kg	1 gram av	/erage		Occup	ational / Contr	olled
Notes	s											
Test Mode = CW (Unmodulated Continuous Wave)						Phantom =	Barski Planar Ph	nantom				
C = C	C = Column; R = Row					Bx (B = Boo	dy) denotes the o	orrespondi	ng Body	SAR Plot	# as shown in	Appendix A
N/A =	N/A = Not Applicable					Test reduct	ion procedures a	pplied for S	can mo	del = FCC	KDB Inquiry #2	235657
Back	Back of DUT Distance to Planar Phantom (see Appendix D)) Sh	na Distance to Planar Pha			hantom (see Appendix D)		
	(Back of Radio Parallel to Planar Phantom)					Antenna 1 Antenna 2						
	3.5 cm					3.7 cm 3.7 cm						

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS	
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-		
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



10.0 SAR SCALING (TUNE-UP TOLERANCE)

SCALING	OF MA	XIMUM S	AR LEVELS 1	O MANUFA	CTURER'S 1	TUNE-UP	TOLEF	RANCE SPEC	CIFICATION	
Test Config.	Test Freq. (MHz)	Antenna Accessor		Body-worn Accessory ID#	Conducted Power Before Test	SAR Level 1g (50% PTT d/f)		Scaling up to Manuf. Upper Tol.	Scaled SAR (50% PTT d/f) 1g (W/kg)	
	(.5 "	Watts	W/kg	Plot #	Power Spec.	·9 (··/··9)	
Body-worn	794.0	2	d	4	2.93	3.62	B48	+0.03 dB	3.65	
		SAR LIN	ITS		BODY	SPATIAL	PEAK	RF EXPOSUE	RE CATEGORY	
FCC 47 C	FR 2.1093	H	ealth Canada Safe	ety Code 6	8.0 W/kg	1 gram a	verage	Occupational / Controlled		

Manufacturer's Rated Output Power Specification inc. Upper Tolerance

700 Band = 2.95 Watts

11.0 SIMULTANEOUS TRANSMISSION ASSESSMENT

Simultaneous Transmission: 7/800 PTT and 2.4GHz Bluetooth

Antenna-to-Antenna Distance: 46.4 mm
Bluetooth Rated Output Power: 2.5 mW
P_{Ref} (FCC KDB 648474, Table 2): 12 (2.45 GHz)

	MAX.SAR	LEVEL (1g)		FCC/IC SAR LIMIT	
Test Config.	7/800 PTT (50% D/F) BLUETOOTH		SUM OF SAR LEVELS	(Occupational)	
Body-worn	3.62 W/kg	0*	3.62 W/kg (1g)	8.0 W/kg (1g)	

^{*} Notes:

FCC KDB 648474 (D01v01r05), Section 4., footnote 12

When stand-alone SAR is not required for a transmitter or antenna and the antenna is between 2.5 and 5.0 cm from other antennas, its SAR is considered zero in the 1-g SAR summing process to determine simultaneous transmission SAR evaluation requirements.

FCC KDB 648474 (D01v01r05), Table 2

When there is simultaneous transmission – Stand-alone SAR not required when output \leq P_{Ref} and antenna is \geq 2.5 cm from other antennas

Summary

SAR evaluation for simultaneous transmission of the 700/800-band PTT and 2.4GHz Bluetooth was not required in accordance with the provision of FCC KDB 648474 (D01v01r05), Section 4. (see reference [16]) - when simultaneous transmission applies and the sum of the 1-g SAR measured for all simultaneous transmitting antennas is less than the SAR limit, SAR evaluation for simultaneous transmission is not required for all transmitters and antennas.

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-	
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12.0 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	<u>+50</u> MHz <u>></u> 300 MHz
	764 MHz	71 MHz	> 50 MHz ²
	776 MHz	59 MHz	> 50 MHz ²
	794 MHz	41 MHz	< 50 MHz ¹
835 MHz	805 MHz	50 MHz	< 50 MHz ¹
OSS WITZ	806 MHz	29 MHz	< 50 MHz ¹
	824 MHz	11 MHz	< 50 MHz ¹
	851 MHz	16 MHz	< 50 MHz ¹
	869 MHz	34 MHz	< 50 MHz ¹

- 1. The probe calibration and measurement frequency interval is < 50 MHz; therefore the additional steps were not required.
- 2. The probe calibration and measurement frequency interval is > 50 MHz; therefore the following additional steps were implemented (per FCC KDB 450824 D01 v01r01): The measured 1-g SAR may be compensated with respect to +5% tolerances in ε_r and -5% tolerances in ε_r computed according to valid SAR sensitivity data, to reduce SAR underestimation and maintain conservativeness.

Probe	Calibrat	ion Frequ	ency = 83	5 MHz	Targ	et Parameters	s: Head 41.5 ε	r / 0.9 σ ~ Bo	dy 55.2	e _r / 0.97 σ
Test Freq.	μ. Date Tissue σ Sensitivity					Sensitivity	% Change	Compensat	ted SAF	R Level (W/kg)
776 MHz	Sep 4	Body	-6.08% ³	0.59	1.09%	-0.57	4.21%	3.74	1g	50% ptt d/f
776 MHz	Sep 5	Body	-5.98% ³	0.59	0.91%	-0.57	4.05%	3.36	1g	50% ptt d/f
776 MHz	Sep 7	Head	-6.56% ³	0.59	3.13%	-0.57	5.65%	1.72	1g	50% ptt d/f
	Parai	meter				ϵ	σ	ρ		
f=800 MHz, d=15 mm										

			,	
f=800 MHz, d=15 mm				_
$(\epsilon_r = 41.5, \ \sigma = 0.90 \text{S/m})$				
SAR Peak	- 0.70	+ 0.86	-	
SAR~1g	- 0.57	+ 0.59	0.10	
${ m SAR}10{ m g}$	- 0.45	+ 0.35	0.18	

Notes

- 1. The above sensitivity formula (Head) from the DASY4 manual (see reference [17]) can be applied to Body tissue parameters (per SPEAG SAR system manufacturer).
- 2. The highest measured SAR level configurations are reported.
- 3. FCC KDB 450824 refers to probe calibrations with fluid parameter tolerances +/- 5%; SPEAG's current probe calibration is valid for fluid parameter tolerances of +/- 10% (See Appendix F). We have accounted for the > 5% measured fluid parameter tolerance in the measurement uncertainty table (see Section 24.0) and have still applied the same sensitivity calculation adjustment to the SAR levels as shown in the above table.

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	ame:	-	
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13.0 SAR LEVEL CORRECTION FOR FLUID DEVIATION (IC RSS-102 / IEC 62209-2)

The SAR levels are corrected for deviation of complex permittivity in accordance with Section 6.1.1 of IEC 62209-2:2010 (see reference [5]) as shown below.

Test Config.	Date	Test Freq. (GHz)	Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity	Measured SAR Level 50% d/f (W/kg)	Corrected SAR Level 50% d/f (W/kg)
Body	9/4	0.776*	55.8	0.911	55.2	0.97	1.09%	-6.08%	3.59	3.76
Body	9/4	0.794*	55.5	0.92	55.2	0.97	0.54%	-5.15%	3.19	3.32
Body	9/5	0.776*	55.7	0.912	55.2	0.97	0.91%	-5.98%	3.23	3.38
Face	9/7	0.776*	42.8	0.841	41.5	0.9	3.13%	-6.56%	1.63	1.72
Face	9/7	0.794*	42.5	0.85	41.5	0.9	2.41%	-5.56%	1.45	1.52

*interpolated using DASY4 software

SAR Correction Formula (IEC 62209-2:2010 Section 6.1.1)

$$\Delta SAR = c_{\epsilon} \Delta \varepsilon_{r} + c_{\sigma} \Delta \sigma \qquad (F.1)$$

where

 $c_e = \partial(\Delta SAR)/\partial(\Delta \epsilon)$ is the coefficients representing the sensitivity of SAR to permittivity where SAR is normalized to output power;

is the coefficients representing the sensitivity of SAR to conductivity, where SAR is normalized to output power. $c_0 = \partial(\Delta SAR)/\partial(\Delta \sigma)$

The values of c_e and c_g have a simple relationship with frequency that can be described using polynomial equations. For the 1 g averaged SAR c, and cg are given by

$$c_s = -7,854 \times 10^{-4} f^3 + 9,402 \times 10^{-3} f^2 - 2,742 \times 10^{-2} f - 0,2026$$
 (F.2)

$$c_a = 9.804 \times 10^{-3} f^3 - 8.661 \times 10^{-2} f^2 + 2.981 \times 10^{-2} f + 0.7829$$
 (F.3)

where

f is the frequency in GHz.

SAR Correction Calculation

Date	04-Sep	04-Sep	05-Sep	07-Sep	07-Sep
Frequency (GHz)	0.776	0.794	0.776	0.776	0.794
Се	-0.2186	-0.2188	-0.2186	-0.2186	-0.2188
Сσ	0.7585	0.7569	0.7585	0.7585	0.7569
ΔΕ	1.09%	0.54%	0.91%	3.13%	2.41%
Δσ	-6.08%	-5.15%	-5.98%	-6.56%	-5.56%
ΔSAR	-4.85%	-4.02%	-4.73%	-5.66%	-4.74%

Conclusion

The correction ΔSAR has a negative sign; therefore correction is applied to the measured SAR level.

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	-
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14.0 DETAILS OF SAR EVALUATION

- 1. The number of test frequencies and the test channels selected for the SAR evaluations are in accordance with the procedures described in FCC KDB 447498 Section 6) c) (see reference [8]).
- 2. The DUT was evaluated for SAR in accordance with the procedures described in FCC KDB 643646 (see reference [9]).
- 3. The SAR evaluations were performed with a fully charged battery.
- 4. 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 and is shown in Appendix A.
- 5. The fluid temperature remained within +/-2°C from the fluid dielectric parameter measurement to the completion of the SAR evaluation.
- 6. 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).
- 7. The DUT was evaluated for SAR 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.
- 8. The face-held SAR evaluations were performed with the UDC Weatherproof Cover accessory (Harris P/N: FM-014712) attached to the accessory connector on the DUT. The accessory cover was removed for the body-worn SAR evaluations, in order for the DUT to accommodate the audio accessories.

15.0 SAR EVALUATION PROCEDURES

- a. (i) 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.
 - (ii) For body-worn and face-held devices, a planar phantom was used.
- b. 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 15mm x 15mm.
 - An area scan was determined as follows:
- c. 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.
- d. 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:
- e. 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.
- f. 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).
- g. 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.

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Tran	sceiver with Bluetooth	DUT Na	ame:	-	
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Description of Test(s)

Specific Absorption Rate

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Test Report Revision No.
Rev. 1.0 (1st Release)

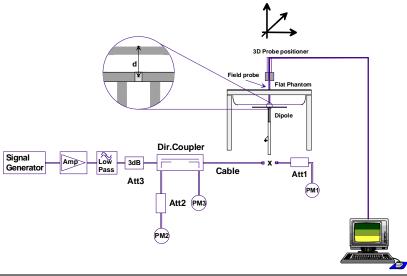
RF Exposure Category
Occupational (Controlled)

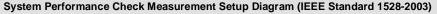


16.0 SYSTEM PERFORMANCE CHECK

Prior to the SAR evaluations, system checks were performed with a planar phantom and an 835 MHz SPEAG validation dipole (see Appendix B for system performance check test plots) in accordance with the procedures described in IEEE Standard 1528-2003 (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 250 mW was applied to the dipole and the system was verified to a tolerance of ±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	Equiv. Tissue		AR 1g W/kg)		Dielectric Constant ε _r			Conductivity σ (mho/m)			ρ	Amb. Temp.	Fluid Temp.	Fluid Depth	Humid.	Barom. Press.
Date	Freq. (MHz)	Target	Meas.	Dev.	Target	Meas.	Dev.	Target	Meas.	Dev.	(Kg/m³)	(°C)	(°C)	(cm)	(%)	(kPa)
Sept. 4	Body 835	2.47 ±10%	2.42	-2.8%	55.2 ±5%	55.2	0.0%	0.97 ±5%	0.96	-1.0%	1000	23	22.5	≥ 15	34	101.1
Sept. 7	Body 835	2.47 ±10%	1 7 36 1 3 7% 1 3 3 1 5 1 7 1 8 1 8 1 3 3 1 1 1 1 1 1 1 1 1 1 1 1 1							-1.0%	1000	23	22.5	≥ 15	30	101.1
Sept. 7	Head 835	2.36 ±10%	- 1 2 24 1 -4 7 % 1 - 1 42 1 1 -1 4 % 1 1 1188 1 -2 2% 1 1000 1 23 1 22 4 1 > 15 1 30 1 100 1 1													
	1.	The target SAR values are the measured values specified by the SAR system manufacturer in the dipole calibration document (see Appendix E).														
	2.							es specified lead) and IC				acturer in	the dipo	le calibrat	tion docum	nent (see
	3.	The fluid te	emperatur	e remain	ned within +	/-2°C fror	n the flu	id dielectric	paramete	er measu	rement to	the com	pletion of	the syste	em perforn	nance
Notes	4.	The dielect and a Netw					mixture	were measu	red prior	to the sy	stem perf	formance	check us	ing a Die	lectric Pro	be Kit
	System Performance Checks were not performed for all the SAR evaluation test dates based on compliance with the following provision as per the TCBC Workshop Presentation April 5-7, 2011 (Kwok Chan Presentation File 04-06-2011-FCC 4 RF Exposure Guidance 040611- KC): SAR System Verification 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															
						1 7										







835 MHz SPEAG Validation Dipole Setup

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	-	
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17.0 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 1528-2003 (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 TI	SSUE MIXTURES		
	Water		40.71 %		53.79 %
	Sugar		56.63 %		45.13 %
INGREDIENT	Salt	835 MHz Head Tissue Mixture	1.48 %	835 MHz Body Tissue Mixture	0.98 %
	HEC		0.99 %		
	Bactericide		0.19 %		0.10 %

18.0 SAR LIMITS

	SAR RF EXPOSU	RE LIMITS					
FCC 47 CFR 2.1093	Health Canada Safety Code 6	Health Canada Safety Code 6 (General Population / Uncontrolled Exposure) (Occupation Controlled Expo					
	ial Average ver the whole body)	0.08 W/kg	0.4 W/kg				
	atial Peak er any 1 g of tissue)	1.6 W/kg	8.0 W/kg				
	atial Peak 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.

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	A
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19.0 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
Contware	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	
Туре	SAM V4.0C
Shell Material	Fiberglass
Thickness	2.0 ±0.1 mm
Volume	Approx. 25 liters
Phantom 2	
Туре	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 3	
Туре	Barski Planar Phantom
Shell Material	Fiberglass
Thickness	2.0 ±0.1 mm
Volume	Approx. 70 liters

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Trar	sceiver with Bluetooth	DUT Na	ame:	XG-25P 7/800	-
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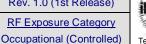
Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release) RF Exposure Category

Test Report Revision No.





Test Lab Certificate No. 2470.01

20.0 PROBE SPECIFICATION (ET3DV6)

Construction: Symmetrical design with triangular core;

Built-in shielding against static charges

PEEK enclosure material (resistant to organic solvents, glycol)

Calibration: In air from 10 MHz to 2.5 GHz

In head simulating tissue at frequencies of 900 MHz

and 1.8 GHz (accuracy ± 8%)

10 MHz to > 6 GHz; Linearity: \pm 0.2 dB (30 MHz to 3 GHz) Frequency: \pm 0.2 dB in head tissue (rotation around probe axis) Directivity:

 \pm 0.4 dB in head tissue (rotation normal to probe axis)

Dynamic Range: $5 \mu W/g$ to > 100 mW/g; Linearity: \pm 0.2 dB

Surface Detect: ± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces

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

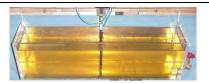
Application: General dosimetry up to 3 GHz; Compliance tests of mobile phone



ET3DV6 E-Field Probe

21.0 PHANTOM(S)

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.



Plexiglas Side Planar Phantom

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 is used for SAR evaluations and system performance check evaluations. See Appendix G for dimensions and specifications of the Barski planar phantom.



Barski Planar Phantom

The SAM Twin Phantom V4.0C is a fiberglass shell phantom with a 2.0 mm (+/-0.2 mm) shell thickness for left and right head and flat planar area integrated in a wooden table. The shape of the fiberglass shell corresponds to the phantom defined by SCC34-SC2. The device holder positions are adjusted to the standard measurement positions in the three sections. See Appendix H for specifications of the SAM Twin Phantom V4.0C.



SAM Twin Phantom V4.0C

22.0 DEVICE HOLDER

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.



Device Holder

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	,,,,,,,,
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



23.0 TEST EQUIPMENT LIST

	TEST EQUIPMENT	ASSET NO.	SERIAL NO.	DATE	CALIBRATION
USED	DESCRIPTION	AUULI NO.	OLIVIAL NO.	CALIBRATED	INTERVAL
х	Schmid & Partner DASY4 System	-	-	-	-
х	-DASY4 Measurement Server	00158	1078	CNR	CNR
х	-Robot	00046	599396-01	CNR	CNR
х	-DAE4	00019	353	19-Apr-12	Biennial
х	-ET3DV6 E-Field Probe	00017	1590	24-Apr-12	Annual
х	-D835V2 Validation Dipole	00217	4d075	20-Apr-12	Triennial
х	Side Planar Phantom	00156	161	CNR	CNR
х	Barski Planar Phantom	00155	03-01	CNR	CNR
х	SPEAG SAM Twin Phantom V4.0C	00154	1033	CNR	CNR
х	HP 85070C Dielectric Probe Kit	00033	none	CNR	CNR
х	Gigatronics 8652A Power Meter	00007	1835272	03-May-12	Biennial
х	Gigatronics 80701A Power Sensor	00014	1833542	03-May-12	Biennial
	Gigatronics 80334A Power Sensor	-	1837001	03-May-12	Biennial
х	HP 8753ET Network Analyzer	00134	US39170292	26-Apr-12	Biennial
х	Rohde & Schwarz SMR20 Signal Generator	00006	100104	02-May-12	Biennial
х	Amplifier Research 5S1G4 Power Amplifier	00106	26235	CNR	CNR
Abbr.	CNR = Calibration Not Required				

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band Pl	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	-
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24.0 MEASUREMENT UNCERTAINTIES

UNCERT	AINTY B	UDGET FOR	R DEVICE E	VALUATION	(IEEE	1528-	-2003)			
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 (835 MHz)	E.2.1	6.0	Normal	1	1	1	6.0	6.0	∞	
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	1	Rectangular	1.732050808	1	1	0.6	0.6	∞	
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	8	
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	6.56	Normal	1	0.64	0.43	4.2	2.8	∞	
Liquid Permittivity (target)	E.3.2	5	Rectangular	1.732050808	0.6	0.49	1.7	1.4	∞	
Liquid Permittivity (measured)	E.3.3	3.13	Normal	1	0.6	0.49	1.9	1.5	8	
Combined Standard Uncertainty RSS 11.58 10.97										
Expanded Uncertainty (95% Confidence Interval) k=2 23.16 21.94										
		certainty Table	e in accordanc	e with IEEE Sta	ndard 1	528-20	ı.			
This uncertainty represents an exp								e factor of k=2		

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	TT Radio Tran	sceiver with Bluetooth	DUT Na	me:		
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<u>Test Report Issue Date</u> September 20, 2012 Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release)

RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



MEASUREMENT UNCERTAINTIES (CONT.)

Source of Uncertainty	UNCERTA	INTY BUI	DGET FOR	DEVICE EV	ALUATION ((IEC 6	2209-	2:2010)		
Probe Calibration (835 MHz) 7.2.2.1 6.0 Normal 1 1 1 6.0 6.0 Isotropy 7.2.2.2 4.7 Rectangular 1.732050808 1 1 2.7 2.7 Boundary Effect 7.2.2.6 1 Rectangular 1.732050808 1 1 0.6 0.6 Linearity 7.2.2.3 4.7 Rectangular 1.732050808 1 1 0.6 0.6 Linearity 7.2.2.3 4.7 Rectangular 1.732050808 1 1 0.6 0.6 Readout Electronics 7.2.2.7 0.3 Normal 1 1 1 0.3 0.3 Response Time 7.2.2.8 0.8 Rectangular 1.732050808 1 1 0.5 0.5 Integration Time 7.2.2.9 2.6 Rectangular 1.732050808 1 1 0.5 0.5 Integration Time 7.2.4.5 3 Rectangular 1.732050808 1 1 1.5 1.5 RF Ambient Conditions 7.2.4.5 3 Rectangular 1.732050808 1 1 0.2 0.2 Probe Positioner Mechanical Restrictions 7.2.3.1 0.4 Rectangular 1.732050808 1 1 0.2 0.2 Probe Positioning wrt Phantom Shell 7.2.3.3 2.9 Rectangular 1.732050808 1 1 0.6 0.6 Test Sample Related 7.2.3.4.2 3.6 Normal 1 1 1 2.9 2.9 Poevice Holder Uncertainty 7.2.3.4.2 3.6 Normal 1 1 1 3.6 3.6 Device Holder Uncertainty 7.2.3.2 4 Rectangular 1.732050808 1 1 2.9 2.9 Phantom and Tissue Parameters Rectangular 1.732050808 1 1 2.3 2.3 Liquid Conductivity (measured) 7.2.4.3 3.1 Normal 1 0.23 0.26 0.7 0.8 Liquid Permittivity and conductivity Temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.7 0.8 Liquid Conductivi	Source of Uncertainty	62209-2	Uncertainty		Divisor		_	Uncertainty	Uncertainty	V _i or V _{eff}
Sotropy 7.2.2.2	Measurement System									
Boundary Effect	Probe Calibration (835 MHz)	7.2.2.1	6.0	Normal	1	1	1	6.0	6.0	8
Linearity	Isotropy	7.2.2.2	4.7	Rectangular	1.732050808	1	1	2.7	2.7	∞
Detection Limits	Boundary Effect	7.2.2.6	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Readout Electronics	Linearity	7.2.2.3	4.7	Rectangular	1.732050808	1	1	2.7	2.7	∞
Response Time	Detection Limits	7.2.2.5	1	Rectangular	1.732050808	1	1	0.6	0.6	∞
Integration Time	Readout Electronics	7.2.2.7	0.3	Normal	1	1	1	0.3	0.3	× ×
RF Ambient Conditions	Response Time	7.2.2.8	0.8	Rectangular	1.732050808	1	1	0.5	0.5	×
Probe Positioner Mechanical Restrictions 7.2.3.1 0.4 Rectangular 1.732050808 1 1 0.2 0.2	Integration Time	7.2.2.9	2.6	Rectangular	1.732050808	1	1	1.5	1.5	∞
Probe Positioning wrt Phantom Shell 7.2.3.3 2.9 Rectangular 1.732050808 1 1 1.7 1.7	RF Ambient Conditions	7.2.4.5	3	Rectangular	1.732050808	1	1	1.7	1.7	∞
Post-processing 7.2.5	Probe Positioner Mechanical Restrictions	7.2.3.1	0.4	Rectangular	1.732050808	1	1	0.2	0.2	∞
Test Sample Related	Probe Positioning wrt Phantom Shell	7.2.3.3	2.9	Rectangular	1.732050808	1	1	1.7	1.7	×
Test Sample Positioning 7.2.3.4.3 2.9 Normal 1 1 1 2.9 2.9	Post-processing	7.2.5	1	Rectangular	1.732050808	1	1	0.6	0.6	× ×
Device Holder Uncertainty	Test Sample Related									
Drift of Output Power (meas. SAR drift) 7.2.2.10 5 Rectangular 1.732050808 1 1 2.9 2.9 Phantom and Tissue Parameters Combined Standard Uncertainty 7.2.3.2 4 Rectangular 1.732050808 1 1 2.3 2.3 SAR Correction Algorithm for deviations in permittivity and conductivity 7.2.4.3 1.2 Normal 1 1 0.81 1.2 0.97 Liquid Conductivity (measured) 7.2.4.3 6.56 Normal 1 0.78 0.71 5.1 4.7 Liquid Permittivity (measured) 7.2.4.3 3.13 Normal 1 0.23 0.26 0.7 0.8 Liquid Permittivity - temp. uncertainty 7.2.4.4 0.27 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89	Test Sample Positioning	7.2.3.4.3	2.9	Normal	1	1	1	2.9	2.9	12
Phantom and Tissue Parameters Rectangular 1.732050808 1 1 2.3 2.3 SAR Correction Algorithm for deviations in permittivity and conductivity 7.2.4.3 1.2 Normal 1 1 0.81 1.2 0.97 Liquid Conductivity (measured) 7.2.4.3 6.56 Normal 1 0.78 0.71 5.1 4.7 Liquid Permittivity (measured) 7.2.4.3 3.13 Normal 1 0.23 0.26 0.7 0.8 Liquid Permittivity - temp. uncertainty 7.2.4.4 0.27 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	Device Holder Uncertainty	7.2.3.4.2	3.6	Normal	1	1	1	3.6	3.6	8
Phantom Uncertainty 7.2.3.2 4 Rectangular 1.732050808 1 1 2.3 2.3 SAR Correction Algorithm for deviations in permittivity and conductivity 7.2.4.3 1.2 Normal 1 1 0.81 1.2 0.97 Liquid Conductivity (measured) 7.2.4.3 6.56 Normal 1 0.78 0.71 5.1 4.7 Liquid Permittivity (measured) 7.2.4.3 3.13 Normal 1 0.23 0.26 0.7 0.8 Liquid Permittivity - temp. uncertainty 7.2.4.4 0.27 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	Drift of Output Power (meas. SAR drift)	7.2.2.10	5	Rectangular	1.732050808	1	1	2.9	2.9	8
SAR Correction Algorithm for deviations in permittivity and conductivity (measured) 7.2.4.3 1.2 Normal 1 1 0.81 1.2 0.97 Liquid Conductivity (measured) 7.2.4.3 6.56 Normal 1 0.78 0.71 5.1 4.7 Liquid Permittivity (measured) 7.2.4.3 3.13 Normal 1 0.23 0.26 0.7 0.8 Liquid Permittivity - temp. uncertainty 7.2.4.4 0.27 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	Phantom and Tissue Parameters									
Descriptivity and conductivity T.2.4.3 T.2 Normal T. T. T. T. T. T. T. T	Phantom Uncertainty	7.2.3.2	4	Rectangular	1.732050808	1	1	2.3	2.3	8
Liquid Permittivity (measured) 7.2.4.3 3.13 Normal 1 0.23 0.26 0.7 0.8 Liquid Permittivity - temp. uncertainty 7.2.4.4 0.27 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	· ·	7.2.4.3	1.2	Normal	1	1	0.81	1.2	0.97	8
Liquid Permittivity - temp. uncertainty 7.2.4.4 0.27 Rectangular 1.732050808 0.78 0.71 0.1 0.1 Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	Liquid Conductivity (measured)	7.2.4.3	6.56	Normal	1	0.78	0.71	5.1	4.7	8
Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	Liquid Permittivity (measured)	7.2.4.3	3.13	Normal	1	0.23	0.26	0.7	0.8	8
Liquid Conductivity - temp. uncertainty 7.2.4.4 0.84 Rectangular 1.732050808 0.23 0.26 0.1 0.1 Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77	Liquid Permittivity - temp. uncertainty	7.2.4.4	0.27	Rectangular	1.732050808	0.78	0.71	0.1	0.1	8
Combined Standard Uncertainty 7.3.1 RSS 11.11 10.89 Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77		7.2.4.4	0.84			0.23	0.26	0.1	0.1	00
Expanded Uncertainty (95% Confidence Interval) 7.3.2 k=2 22.21 21.77				<u> </u>						
	Expanded Uncertainty	7.3.2		k=2				22.21	21.77	
Measurement Uncertainty Table in accordance with International Standard IEC 62209-2:2010	Measurement	Uncertainty	Table in acco	ordance with Ir	nternational Sta	ndard	IEC 622	209-2:2010		

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS		
DUT Type:	Porta	ble 700/800-Band P1	T Radio Tran	sceiver with Bluetooth	DUT Na	ame:	XG-25P 7/800	-		
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

O

Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



25.0 REFERENCES

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- [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 4: March 2010.
- [5] IEEE Standard 1528-2003 "Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques": December 2003.
- [6] 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)".
- [7] 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."
- [8] Federal Communications Commission, Office of Engineering and Technology "Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies"; KDB 447498 D01v04: November 2009.
- [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 D01 v01r01: January 2007.
- [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 3: December 2010.
- [16] Federal Communications Commission, Office of Engineering and Technology "SAR Evaluation Considerations for Handsets with Multiple Transmitters and Antennas", KDB 648474 D01v01r01: Sept. 2008.
- [17] Schmid & Partner Engineering AG DASY4 Manual V4.6, Chapter 22 Application Note, SAR Sensitivities: Sept. 2005.



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APPENDIX B - SYSTEM PERFORMANCE CHECK PLOTS

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Trar	sceiver with Bluetooth	DUT Name: XG-25P 7/800			-
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Description of Test(s)

Specific Absorption Rate

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Date Tested: 09/04/2012

System Performance Check - 835 MHz Dipole - Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d075; Calibrated: 04/20/2012

Ambient Temp: 23C; Fluid Temp: 22.5C; Barometric Pressure: 101.1 kPa; Humidity: 34%

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: f = 835 MHz; $\sigma = 0.96$ mho/m; $\varepsilon_r = 55.2$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 SN1590; ConvF(6.54, 6.54, 6.54); Calibrated: 24/04/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 19/04/2012
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

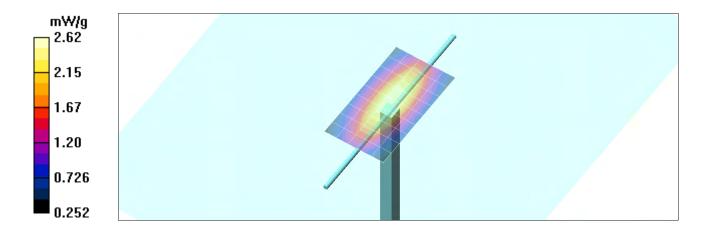
Body d=15mm Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 2.48 mW/g

Body d=15mm Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.2 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 3.45 W/kg

SAR(1 g) = 2.42 mW/g; SAR(10 g) = 1.6 mW/g Maximum value of SAR (measured) = 2.62 mW/g



Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Name: XG-25P 7/800			-
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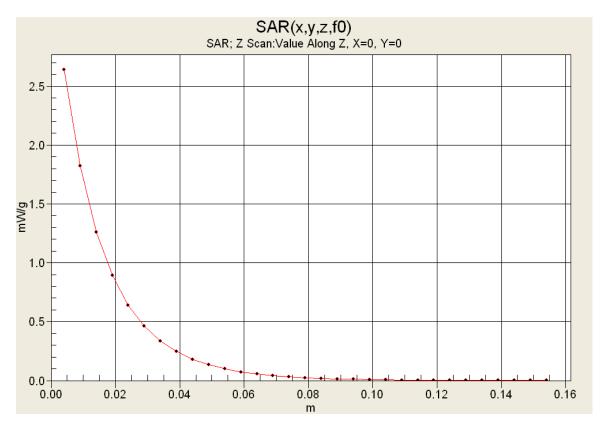
Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release) RF Exposure Category Occupational (Controlled)



Z-Axis Scan



Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Name: XG-25P 7/800			-
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Description of Test(s)

Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



Date Tested: 09/07/2012

System Performance Check - 835 MHz Dipole - Body

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d075; Calibrated: 04/20/2012

Ambient Temp: 23C; Fluid Temp: 22.5C; Barometric Pressure: 101.1 kPa; Humidity: 30%

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: M835 Medium parameters used: f = 835 MHz; σ = 0.96 mho/m; ε_r = 54.2; ρ = 1000 kg/m³

- Probe: ET3DV6 SN1590; ConvF(6.54, 6.54, 6.54); Calibrated: 24/04/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 19/04/2012
- Phantom: Barski Industries; Type: Fiberglass Planar; Serial: 03-01
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

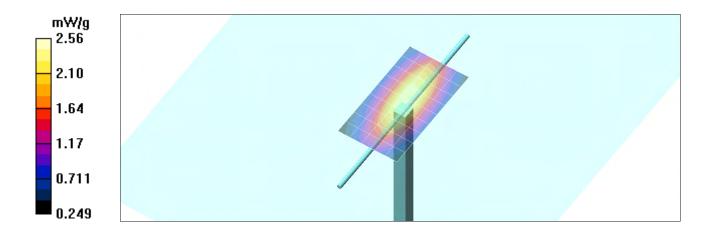
Body d=15mm Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 2.41 mW/g

Body d=15mm Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.2 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 3.37 W/kg

SAR(1 g) = 2.36 mW/g; SAR(10 g) = 1.56 mW/g Maximum value of SAR (measured) = 2.56 mW/g



Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Name: XG-25P 7/800			-
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Test Report Issue Date
September 20, 2012

<u>Test Report Serial No.</u> 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release)

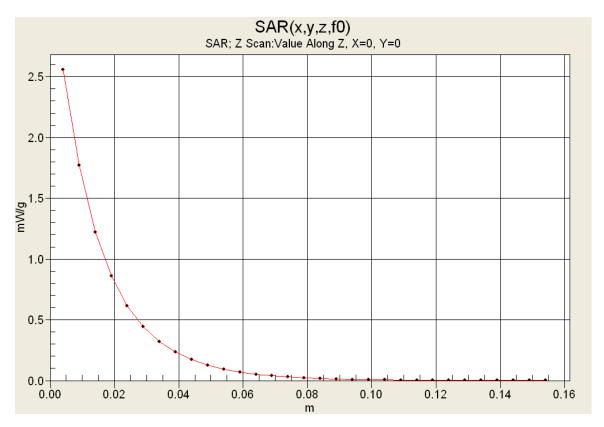
RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



Z-Axis Scan



Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS	
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Name: XG-25P 7/800			7	
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

RF Exposure Category
Occupational (Controlled)

Test Report Revision No.

Rev. 1.0 (1st Release)



Date Tested: 09/07/2012

System Performance Check - 835 MHz Dipole - Head

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d075; Calibrated: 04/20/2012

Ambient Temp: 23C; Fluid Temp: 22.9C; Barometric Pressure: 101.1 kPa; Humidity: 30%

Communication System: CW

Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL835 Medium parameters used: f = 835 MHz; $\sigma = 0.88$ mho/m; $\epsilon_r = 42.1$; $\rho = 1000$ kg/m³

- Probe: ET3DV6 SN1590; ConvF(6.77, 6.77, 6.77); Calibrated: 24/04/2012
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 19/04/2012
- Phantom: SAM 4.0; Type: Fiberglass; Serial: 1033
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

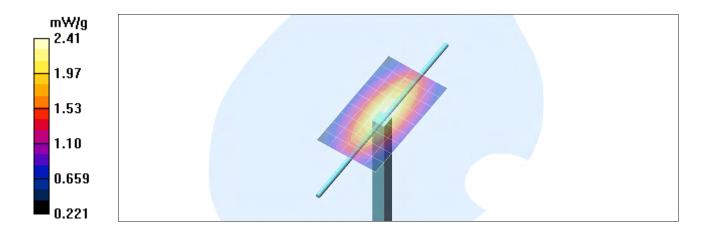
Head d=15mm Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (measured) = 2.37 mW/g

Head d=15mm Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.6 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 3.20 W/kg

SAR(1 g) = 2.24 mW/g; SAR(10 g) = 1.47 mW/g Maximum value of SAR (measured) = 2.41 mW/g





<u>Test Report Issue Date</u> September 20, 2012 <u>Test Report Serial No.</u> 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release)

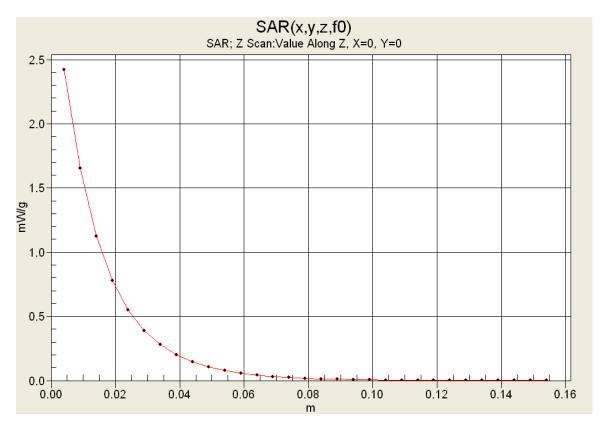
RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



Z-Axis Scan



Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Name: XG-25P 7/800			-
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



APPENDIX C - MEASURED FLUID DIELECTRIC PARAMETERS

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	IC: 3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Tran	sceiver with Bluetooth	DUT Name: XG-25P 7/800			
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Test Report Issue Date
September 20, 2012

<u>Test Report Serial No.</u> 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



835 MHz Body

Celltech Labs
Test Result for UIM Dielectric Parameter
04/Sep/2012

Frequency (GHz)
FCC_eB FCC Limits for Body Epsilon
FCC_sB FCC Limits for Body Sigma

*******	*****	*****	******	*****
Freq	FCC_eB	FCC_sE	3 Test_e	Test_s
0.7350	55.59	0.96	56.14	0.86
0.7450	55.55	0.96	56.01	0.88
0.7550	55.51	0.96	55.85	0.89
0.7650	55.47	0.96	55.68	0.91
0.7750	55.43	0.97	55.79	0.91
0.7850	55.39	0.97	55.70	0.92
0.7950	55.36	0.97	55.49	0.92
0.8050	55.32	0.97	55.31	0.93
0.8150	55.28	0.97	55.39	0.94
0.8250	55.24	0.97	55.42	0.96
0.8350	55.20	0.97	55.21	0.96
0.8450	55.17	0.98	54.87	0.96
0.8550	55.14	0.99	54.95	0.98
0.8650	55.11	1.01	54.78	1.00
0.8750	55.08	1.02	54.83	1.01
0.8850	55.05	1.03	54.81	1.02
0.8950	55.02	1.04	54.71	1.03
0.9050	55.00	1.05	54.39	1.05
0.9150	55.00	1.06	54.37	1.04
0.9250	54.98	1.06	54.40	1.06
0.9350	54.96	1.07	54.43	1.07

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Tran	sceiver with Bluetooth	DUT Name: XG-25P 7/800			
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



835 MHz Body

Celltech Labs
Test Result for UIM Dielectric Parameter
05&06/Sep/2012

Frequency (GHz)
FCC_eB FCC Limits for Body Epsilon
FCC_sB FCC Limits for Body Sigma

******	*******	******	******
FCC_eB	FCC_sE	3 Test_e	Test_s
55.59	0.96	56.14	0.87
55.55	0.96	56.05	0.89
55.51	0.96	55.66	0.89
55.47	0.96	55.91	0.91
55.43	0.97	55.72	0.91
55.39	0.97	55.62	0.93
55.36	0.97	55.59	0.95
55.32	0.97	55.11	0.95
55.28	0.97	55.37	0.96
55.24	0.97	55.37	0.96
55.20	0.97	55.30	0.98
55.17	0.98	55.18	0.98
55.14	0.99	55.02	1.00
55.11	1.01	55.08	1.00
55.08	1.02	54.60	1.01
55.05	1.03	54.70	1.02
			1.05
			1.05
			1.06
			1.07
54.96	1.07	54.11	1.08
	FCC_eB 55.59 55.55 55.51 55.47 55.43 55.39 55.36 55.32 55.28 55.24 55.20 55.17 55.14 55.11 55.08	FCC_eB FCC_sE 55.59	55.55 0.96 56.05 55.51 0.96 55.66 55.47 0.96 55.91 55.43 0.97 55.72 55.39 0.97 55.62 55.36 0.97 55.59 55.32 0.97 55.37 55.24 0.97 55.37 55.20 0.97 55.30 55.17 0.98 55.18 55.14 0.99 55.02 55.11 1.01 55.08 55.08 1.02 54.60 55.05 1.03 54.70 55.00 1.05 54.66 55.00 1.06 54.55 54.98 1.06 54.45

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Tran	sceiver with Bluetooth	DUT Name: XG-25P 7/800			
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



835 MHz Body

Celltech Labs
Test Result for UIM Dielectric Parameter
07/Sep/2012

Frequency (GHz)
FCC_eB FCC Limits for Body Epsilon
FCC_sB FCC Limits for Body Sigma

******	******	*******	******
FCC_eB	FCC_sE	3 Test_e	Test_s
55.59	0.96	54.88	0.85
55.55	0.96	55.28	0.88
55.51	0.96	55.00	0.88
55.47	0.96	54.83	0.89
55.43	0.97	54.87	0.90
55.39	0.97	54.95	0.91
55.36	0.97	54.80	0.93
55.32	0.97	54.37	0.94
55.28	0.97	54.66	0.95
55.24	0.97	54.37	0.95
55.20	0.97	54.24	0.96
55.17	0.98	54.23	0.98
55.14	0.99	53.82	0.98
55.11	1.01	53.93	0.99
55.08	1.02	53.63	1.00
55.05	1.03	53.66	1.03
55.02	1.04	53.69	1.03
55.00	1.05	53.31	1.03
55.00	1.06	53.66	1.05
54.98	1.06	53.30	1.06
54.96	1.07	53.25	1.06
	FCC_eB 55.59 55.55 55.51 55.47 55.43 55.39 55.36 55.32 55.28 55.24 55.20 55.17 55.14 55.11 55.08 55.05 55.02 55.00 55.00 54.98	FCC_eB FCC_sE 55.59 0.96 55.55 0.96 55.51 0.96 55.47 0.96 55.43 0.97 55.39 0.97 55.32 0.97 55.24 0.97 55.24 0.97 55.24 0.97 55.17 0.98 55.14 0.99 55.11 1.01 55.08 1.02 55.05 1.03 55.02 1.04 55.00 1.05 55.00 1.06 54.98 1.06	55.55 0.96 55.28 55.51 0.96 55.00 55.47 0.96 54.83 55.43 0.97 54.87 55.39 0.97 54.80 55.32 0.97 54.60 55.24 0.97 54.37 55.20 0.97 54.66 55.24 0.97 54.24 55.17 0.98 54.23 55.14 0.99 53.82 55.11 1.01 53.93 55.08 1.02 53.63 55.05 1.03 53.66 55.02 1.04 53.69 55.00 1.05 53.31 55.00 1.06 53.66 54.98 1.06 53.30

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	Portable 700/800-Band PTT Radio Transceiver with Bluetooth DUT Name: XG-25P 7/800						
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Test Report Issue Date September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

Description of Test(s)

Specific Absorption Rate

Rev. 1.0 (1st Release) RF Exposure Category

Occupational (Controlled)

Test Report Revision No.



835 MHz Head

Celltech Labs Test Result for UIM Dielectric Parameter 07/Sep/2012 Frequency (GHz)

FCC_eHFCC OET 65 Supplement C (June 2001) Limits for Head Epsilon FCC_sHFCC OET 65 Supplement C (June 2001) Limits for Head Sigma

******	******	******	*******	******
Freq	FCC_eH	IFCC_sh	Test_e	Test_s
0.7350	42.02	0.89	42.95	0.78
0.7450	41.97	0.89	43.20	0.80
0.7550	41.92	0.89	43.18	0.81
0.7650	41.86	0.89	42.59	0.82
0.7750	41.81	0.90	42.79	0.84
0.7850	41.76	0.90	42.58	0.85
0.7950	41.71	0.90	42.52	0.85
0.8050	41.66	0.90	42.49	0.87
0.8150	41.60	0.90	42.57	0.88
0.8250	41.55	0.90	42.24	0.88
0.8350	41.50	0.90	42.07	0.88
0.8450	41.50	0.91	41.87	0.91
0.8550	41.50	0.92	41.74	0.92
0.8650	41.50	0.93	41.39	0.92
0.8750	41.50	0.94	41.06	0.93
0.8850	41.50	0.95	41.44	0.94
0.8950	41.50	0.96	41.13	0.95
0.9050	41.50	0.97	41.08	0.95
0.9150	41.50	0.98	40.97	0.98
0.9250	41.48	0.98	40.76	0.97
0.9350	41.46	0.99	40.96	0.98

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P	T Radio Tran	sceiver with Bluetooth	DUT Name: XG-25P 7/800			
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Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



APPENDIX E - DIPOLE CALIBRATION

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	uetooth DUT Name: XG-25P 7/800		-	
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Calibration Laboratory of

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





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Accreditation No.: SCS 108

Schweizerischer Kalibrierdienst Service suisse d'étalonnage Servizio svizzero di taratura Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Client

Celltech

Certificate No: D835V2-4d075_Apr12

CALIBRATION CERTIFICATE

Object

D835V2 - SN: 4d075

Calibration procedure(s)

QA CAL-05.v8

Calibration procedure for dipole validation kits above 700 MHz

Calibration date:

April 20, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

ID#	Cal Date (Certificate No.)	Scheduled Calibration
GB37480704	05-Oct-11 (No. 217-01451)	Oct-12
US37292783	05-Oct-11 (No. 217-01451)	Oct-12
SN: 5058 (20k)	27-Mar-12 (No. 217-01530)	Apr-13
SN: 5047.2 / 06327	27-Mar-12 (No. 217-01533)	Apr-13
SN: 3205	30-Dec-11 (No. ES3-3205_Dec11)	Dec-12
SN: 601	04-Jul-11 (No. DAE4-601_Jul11)	Jul-12
ID#	Check Date (in house)	Scheduled Check
MY41092317	18-Oct-02 (in house check Oct-11)	In house check: Oct-13
100005	04-Aug-99 (in house check Oct-11)	In house check: Oct-13
US37390585 S4206	18-Oct-01 (in house check Oct-11)	In house check: Oct-12
Name	Function	Signature
Israe El-Naouq	Laboratory Technician	Jeraa et Daoug
Katja Pokovic	Technical Manager	0014
	GB37480704 US37292783 SN: 5058 (20k) SN: 5047.2 / 06327 SN: 3205 SN: 601 ID # MY41092317 100005 US37390585 S4206 Name Israe El-Naouq	GB37480704 05-Oct-11 (No. 217-01451) US37292783 05-Oct-11 (No. 217-01451) SN: 5058 (20k) 27-Mar-12 (No. 217-01530) SN: 5047.2 / 06327 27-Mar-12 (No. 217-01533) SN: 3205 30-Dec-11 (No. ES3-3205_Dec11) SN: 601 04-Jul-11 (No. DAE4-601_Jul11) ID # Check Date (in house) MY41092317 18-Oct-02 (in house check Oct-11) 100005 04-Aug-99 (in house check Oct-11) US37390585 S4206 18-Oct-01 (in house check Oct-11) Name Function Israe El-Naouq Laboratory Technician

Issued: April 20, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Certificate No: D835V2-4d075_Apr12

Calibration Laboratory of

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura

Swiss Calibration Service

Accreditation No.: SCS 108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA

Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL

tissue simulating liquid

ConvF N/A sensitivity in TSL / NORM x,y,z

not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed
 point exactly below the center marking of the flat phantom section, with the arms oriented
 parallel to the body axis.
- Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- SAR measured: SAR measured at the stated antenna input power.
- SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
- SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Certificate No: D835V2-4d075_Apr12 Page 2 of 8

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.8.1
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.1 ± 6 %	0.90 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.36 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	9.42 mW /g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 mW / g
SAR for nominal Head TSL parameters	normalized to 1W	6.19 mW /g ± 16.5 % (k=2)

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.5 ± 6 %	1.01 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C		

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.47 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	9.56 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.62 mW / g
SAR for nominal Body TSL parameters	normalized to 1W	6.31 mW / g ± 16.5 % (k=2)

Certificate No: D835V2-4d075_Apr12 Page 3 of 8

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.4 Ω - 4.6 jΩ
Return Loss	- 26.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.8 Ω - 6.2 jΩ
Return Loss	- 22.8 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.395 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	November 09, 2007

Certificate No: D835V2-4d075_Apr12 Page 4 of 8

DASY5 Validation Report for Head TSL

Date: 20.04.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d075

Communication System: CW; Frequency: 835 MHz

Medium parameters used: f = 835 MHz; $\sigma = 0.9 \text{ mho/m}$; $\varepsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

Probe: ES3DV3 - SN3205; ConvF(6.07, 6.07, 6.07); Calibrated: 30.12.2011;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 04.07.2011

Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001

DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

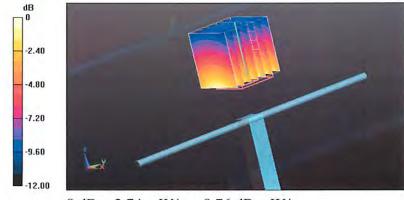
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.890 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 3.477 mW/g

SAR(1 g) = 2.36 mW/g; SAR(10 g) = 1.55 mW/g

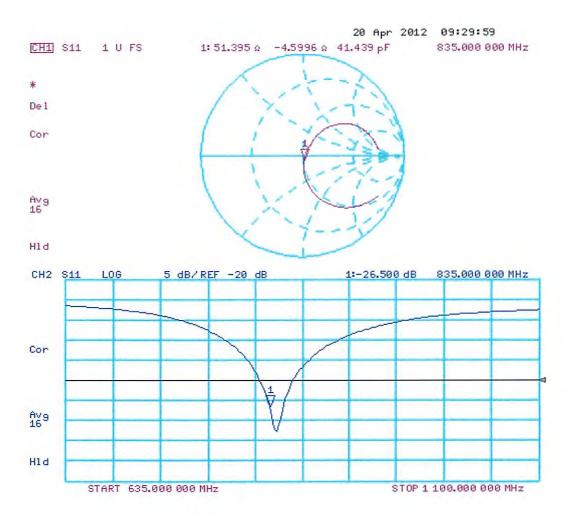
Maximum value of SAR (measured) = 2.74 mW/g



0 dB = 2.74 mW/g = 8.76 dB mW/g

Certificate No: D835V2-4d075_Apr12 Page 5 of 8

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 19.04.2012

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d075

Communication System: CW; Frequency: 835 MHz

Medium parameters used: f = 835 MHz; $\sigma = 1.01$ mho/m; $\varepsilon_r = 54.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

Probe: ES3DV3 - SN3205; ConvF(6.02, 6.02, 6.02); Calibrated: 30.12.2011;

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn601; Calibrated: 04.07.2011

Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001

DASY52 52.8.1(838); SEMCAD X 14.6.5(6469)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

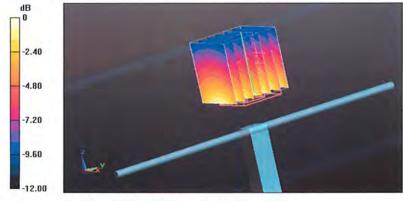
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.283 V/m; Power Drift = 0.00 dB

Peak SAR (extrapolated) = 3.580 mW/g

SAR(1 g) = 2.47 mW/g; SAR(10 g) = 1.62 mW/g

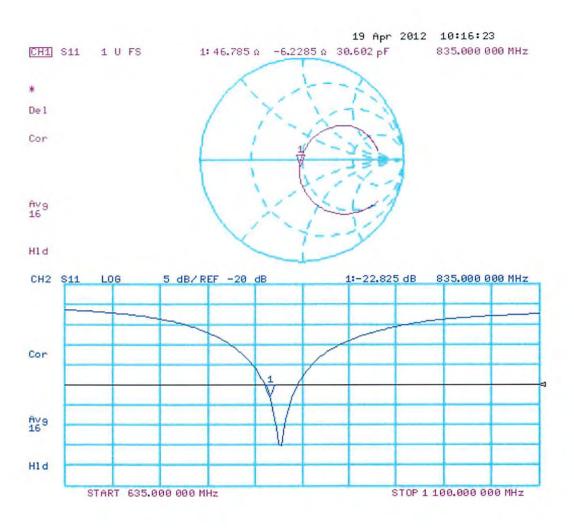
Maximum value of SAR (measured) = 2.87 mW/g



0 dB = 2.87 mW/g = 9.16 dB mW/g

Certificate No: D835V2-4d075_Apr12

Impedance Measurement Plot for Body TSL





Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



APPENDIX F - PROBE CALIBRATION

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:	3636B-0073		3636B-0073		HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	DUT Name: XG-25P 7/800				
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Calibration Laboratory of

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Client

Celltech

Accreditation No.: SCS 108

Certificate No: ET3-1590_Apr12

CALIBRATION CERTIFICATE

Object

ET3DV6 - SN:1590

Calibration procedure(s)

QA CAL-01.v8, QA CAL-12.v7, QA CAL-23.v4, QA CAL-25.v4

Calibration procedure for dosimetric E-field probes

Calibration date:

April 24, 2012

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI). The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	29-Mar-12 (No. 217-01508)	Apr-13
Power sensor E4412A	MY41498087	29-Mar-12 (No. 217-01508)	Apr-13
Reference 3 dB Attenuator	SN: S5054 (3c)	27-Mar-12 (No. 217-01531)	Apr-13
Reference 20 dB Attenuator	SN: S5086 (20b)	27-Mar-12 (No. 217-01529)	Apr-13
Reference 30 dB Attenuator	SN: S5129 (30b)	27-Mar-12 (No. 217-01532)	Apr-13
Reference Probe ES3DV2	SN: 3013	29-Dec-11 (No. ES3-3013_Dec11)	Dec-12
DAE4	SN: 660	10-Jan-12 (No. DAE4-660_Jan12)	Jan-13
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-11)	In house check: Apr-13
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-11)	In house check: Oct-12

Name Function Signature
Calibrated by: Jeton Kastrati Laboratory Technician

Approved by: Katja Pokovic Technical Manager

Issued: April 26, 2012

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Calibration Laboratory of

Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland





S Schweizerischer Kalibrierdienst
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Servizio svizzero di taratura
Swiss Calibration Service

Accreditation No.: SCS 108

Accredited by the Swiss Accreditation Service (SAS)

The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Glossary:

TSL tissue simulating liquid

NORMx,y,z sensitivity in free space

ConvF sensitivity in TSL / NORMx,y,z

DCP diode compression point

CF crest factor (1/duty_cycle) of the RF signal modulation dependent linearization parameters

Polarization φ φ rotation around probe axis

Polarization 9 9 rotation around an axis that is in the plane normal to probe axis (at measurement center),

i.e., 9 = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

 a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003

b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization 9 = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide).
 NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z * frequency_response (see Frequency Response Chart). This linearization is
 implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included
 in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- PAR: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- Ax,y,z; Bx,y,z; Cx,y,z, VRx,y,z: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Certificate No: ET3-1590_Apr12 Page 2 of 11

ET3DV6 – SN:1590 April 24, 2012

Probe ET3DV6

SN:1590

Manufactured:

March 19, 2001 April 24, 2012

Calibrated:

Salibanta difa a DAOMEAOMO O cottaga

Calibrated for DASY/EASY Systems (Note: non-compatible with DASY2 system!)

ET3DV6- SN:1590 April 24, 2012

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1590

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm (μV/(V/m) ²) ^A	1.79	1.92	1.60	± 10.1 %
DCP (mV) ^B	94.8	98.4	88.8	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dB	C dB	VR mV	Unc ^E (k=2)
0	CW	0.00	Х	0.00	0.00	1.00	143.4	±4.6 %
			Υ	0.00	0.00	1.00	150.1	
			Z	0.00	0.00	1.00	179.4	

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

⁸ Numerical linearization parameter: uncertainty not required.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Pages 5 and 6).

E Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

ET3DV6- SN:1590 April 24, 2012

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1590

Calibration Parameter Determined in Head Tissue Simulating Media

					•			
f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	43.5	0.87	7.54	7.54	7.54	0.20	2.16	± 13.4 %
750	41.9	0.89	7.11	7.11	7.11	0.29	3.00	± 12.0 %
835	41.5	0.90	6.77	6.77	6.77	0.27	3.00	± 12.0 %
900	41.5	0.97	6.67	6.67	6.67	0.29	3.00	± 12.0 %

^c Frequency validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

F At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to

F At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to \pm 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

ET3DV6- SN:1590 April 24, 2012

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1590

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) ^C	Relative Permittivity ^F	Conductivity (S/m) ^F	ConvF X	ConvF Y	ConvF Z	Alpha	Depth (mm)	Unct. (k=2)
450	56.7	0.94	7.93	7.93	7.93	0.12	2.07	± 13.4 %
750	55.5	0.96	6.71	6.71	6.71	0.22	3.00	± 12.0 %
835	55.2	0.97	6.54	6.54	6.54	0.27	3.00	± 12.0 %
900	55.0	1.05	6.51	6.51	6.51	0.29	2.92	± 12.0 %

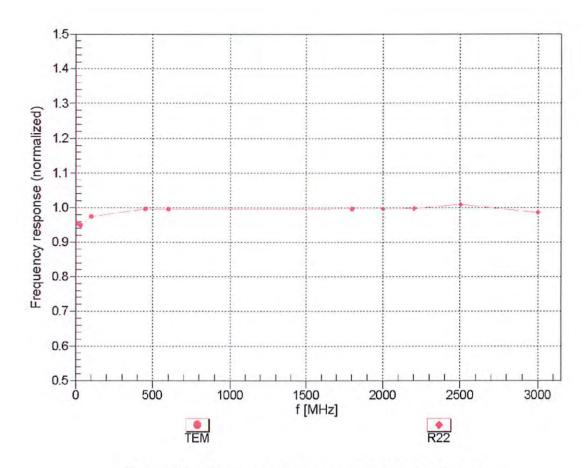
^c Frequency validity of \pm 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to \pm 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

F At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to

^L At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to \pm 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to \pm 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

ET3DV6-SN:1590 April 24, 2012

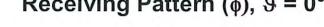
Frequency Response of E-Field (TEM-Cell:ifi110 EXX, Waveguide: R22)

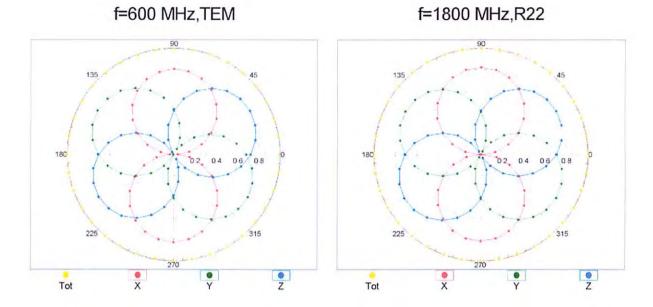


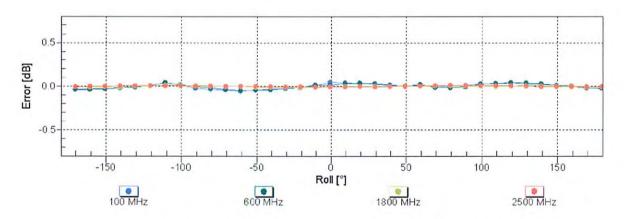
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

ET3DV6-SN:1590 April 24, 2012

Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$



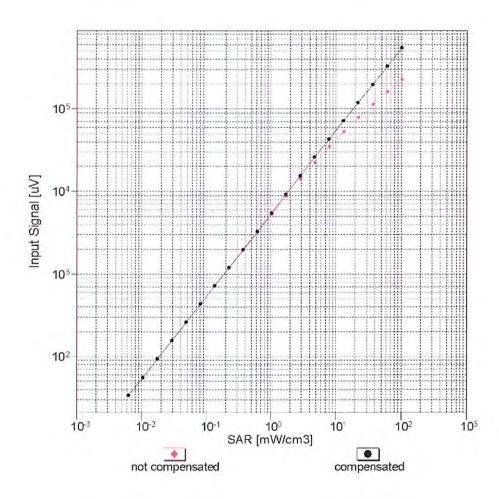


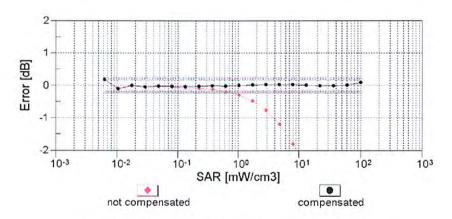


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

ET3DV6- SN:1590 April 24, 2012

Dynamic Range f(SAR_{head}) (TEM cell , f = 900 MHz)

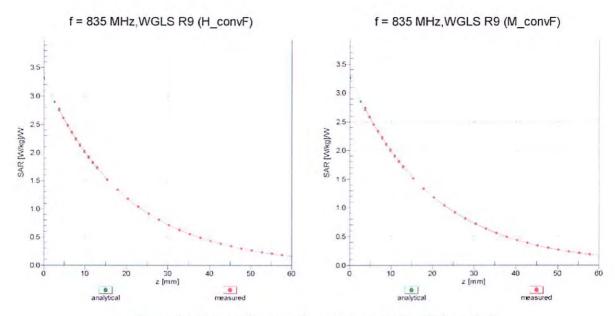




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

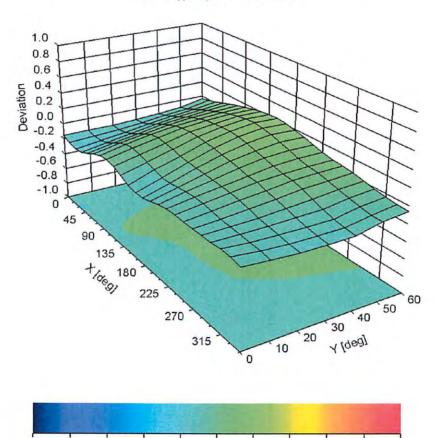
ET3DV6- SN:1590 April 24, 2012

Conversion Factor Assessment



Deviation from Isotropy in Liquid

Error (ϕ , ϑ), f = 900 MHz



-0.8

-0.6

-0.4

-0.2

0.0

Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

8.0

ET3DV6- SN:1590 April 24, 2012

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1590

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-170.8
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	enabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm

Certificate No: ET3-1590_Apr12 Page 11 of 11



Date(s) of Evaluation September 04-07, 2012

Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



APPENDIX G - BARSKI PLANAR PHANTOM CERTIFICATE OF CONFORMITY

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	
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2378 Westlake Road Kelowna, B.C. Canada V1Z-2V2



Ph. # 250-769-6848 Fax # 250-769-6334

E-mail: <u>barskiind@shaw.ca</u>
Web: www.bcfiberglass.com

FIBERGLASS FABRICATORS

Certificate of Conformity

Item: Flat Planar Phantom Unit # 03-01

Date: June 16, 2003

Manufacturer: Barski Industries (1985 Ltd)

Test	Requirement	Details
Shape	Compliance to geometry according to drawing	Supplied CAD drawing
Material Thickness	Compliant with the requirements	2mm +/- 0.2mm in measurement area
Material Parameters	Dielectric parameters for required frequencies Based on Dow Chemical technical data	100 MHz-5 GHz Relative permittivity<5 Loss Tangent<0.05

Conformity

Based on the above information, we certify this product to be compliant to the requirements specified.

Signature:

Daniel Chailler





Fiberglass Planar Phantom - Top View



Fiberglass Planar Phantom - Front View



Fiberglass Planar Phantom - Back View

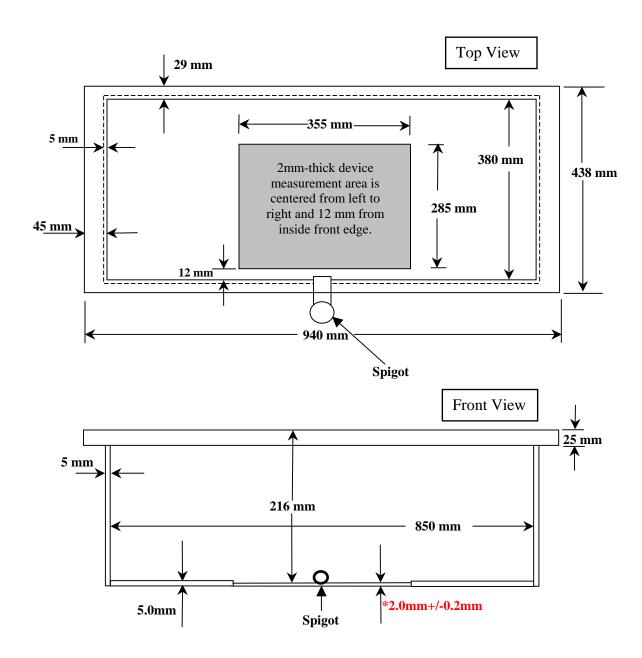


Fiberglass Planar Phantom - Bottom View



Dimensions of Fiberglass Planar Phantom

(Manufactured by Barski Industries Ltd. - Unit# 03-01)



Note: Measurements that aren't repeated for the opposite sides are the same as the side measured. This drawing is not to scale.



<u>Date(s) of Evaluation</u> September 04-07, 2012

Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



APPENDIX H - SAM TWIN PHANTOM CERTIFICATE OF CONFORMITY

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	
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Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 BA
Series No	TP-1002 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen
	Switzerland

Tests

The series production process used allows the limitation to test of first articles. Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

- [1] CENELEC EN 50361
- [2] IEEE P1528-200x draft 6.5
- [3] IEC PT 62209 draft 0.9
- (*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date

18.11.2001

Signature / Stamp

Schmid & Partner Engineering AG

Zeughausstrasse 43, CH-8004 Zurich Tel. +41 1 245 97 00, Fax +41 1 245 97 79

Fin Brubolt



Date(s) of Evaluation September 04-07, 2012

Test Report Issue Date
September 20, 2012

Test Report Serial No. 082712OWD-T1184-S90M

<u>Description of Test(s)</u> Specific Absorption Rate Test Report Revision No.
Rev. 1.0 (1st Release)

RF Exposure Category
Occupational (Controlled)



APPENDIX I - AUDIO ACCESSORY COMBINATIONS (FCC KDB 643646 D01v01r01)

Applicant:	HAF	RRIS Corporation	FCC ID:	OWDTR-0073-E	IC:		3636B-0073	HARRIS
DUT Type:	Porta	ble 700/800-Band P1	T Radio Trar	sceiver with Bluetooth	DUT Na	me:	XG-25P 7/800	-
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HARRIS CORPORATION FCC ID: OWDTR-0073-E XG-25P 700/800 PTT Radio Transceiver (SYSTEM)

Body	dy SAR Test Considerations for Audio Accessories with												vith	out l	Built	t-in A	Ante	nna	- Au	dio A	Acce	essc	ry C	om	bina	tion	s (F	CC	KDB 643646 D01v01r01 Page 9)											
				Batte	ery a	(Add	ditior	nal)					В	atte	ry b	(Add	lition	al)					В	atte	ry c	(Add	litio	nal)					E	Batte	ry d	l (De	fault)		
Audio Accessory ID #					Ante	nna	1, 2							P	nte	nna 1	, 2							P	nter	nna 1	1, 2							Αı	nten	na 1	, 2			
	Bv	v#5	Bv	v#1	Bv	v#3	Bv	v#4	Bw#6 Bw#5 Bw#1 Bw#3 Bw#4 Bw#6 Bw#5 Bw#		v#1	Bv	v#3	Bv	Bw#4		Bw#4		Bw#4		/#6	Bw	<i>ı</i> #5	Bw	#1	Bw#3		Bw	ı#4	Bw	#6									
G1a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G1b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G3a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G3b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G4	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G5	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G6a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G6b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7c	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7d	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G8a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G8b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G9a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G9b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G10	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G11a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G11b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G12a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G12b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

- All audio accessory options can be utilized with any antenna, battery and body-worn combination.
 The accessory combinations evaluated for SAR are highlighted in yellow.
 Please refer to Section 5.0 of the SAR report for description of accessory ID #.

- 4. Bw = Body-worn

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HARRIS CORPORATION FCC ID: OWDTR-0073-E XG-25P 700/800 PTT Radio Transceiver (Scan)

Body	ody SAR Test Considerations for Audio Accessories without Built-in Antenna - Aud													dio A	Acce	sso	ry C	om	bina	tion	s (F	СС	KDB	643	646 I	D01v	/01r(01 P	age	9)										
				Batte	ery a	a (Ad	ditio	nal)					Е	Batte	ry b	(Add	lition	al)					В	atte	ry c	(Add	litio	nal)					ı	Batte	ery d	l (De	fault	t)		
Audio Accessory ID #					Ante	enna	1, 2							ļ	Ante	nna 1	, 2							Δ	nter	nna '	1, 2							Aı	nten	na 1	, 2			
	Bv	v#5	Bv	v#1	В	w#3	В	v#4	Bw#6 Bw#5 Bw#1 Bw#3 Bw#4 Bw#6 Bw#5 Bw#1		/#1	Bw	v#3	Bv	Bw#4		Bw#4		Bw#4		v#6	Bv	v#5	Bw#1		Bw#		Bv	Bw#4		#6									
G1a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G1b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G3a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G3b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G4	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G5	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G6a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G6b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7c	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G7d	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G8a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G8b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G9a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G9b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G10	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G11a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G11b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G12a	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2
G12b	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2	1	2

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