



Product Safety Manual

10515-0372-4000

December 2009 Rev. -2



This booklet contains important safety information regarding specific absorption rate (SAR) and RF exposure limits included in United States and international standards. Read the information in this booklet before operating your radio.

Unity™ XG-100P
Portable Radio

REV	DATE	DESCRIPTION
-	Dec/09	Initial release

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This product conforms to the European Union Waste from Electric and Electronic Equipment (WEEE) Directive 2002/96/EC. Do not dispose of this product in a public landfill. This product should be taken to a recycling center at the end of its life.

The voice coding technology embodied in this product is protected by intellectual property rights including patent rights, copyrights, and trade secrets of Digital Voice Systems, Inc. The user of this technology is explicitly prohibited from attempting to decompile, reverse engineer, or disassemble the Object Code, or in any other way convert the Object Code into human-readable form.

Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Any repairs, alterations, or substitution of recommended parts made by the user to this equipment not approved by the manufacturer could void the user's authority to operate the equipment in addition to the manufacturer's warranty.

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Harris Corporation RF Communications Division continually evaluates its technical publications for completeness, technical accuracy, and organization. You can assist in this process by submitting your comments and suggestions to the following:

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221 Jefferson Ridge Parkway
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or fax your comments to: 1-434-455-6851

or e-mail us at: PSPC-techpubs@harris.com

1 SAFETY SYMBOL CONVENTIONS

The following conventions are used to alert the user to general safety precautions that must be observed during all phases of operation, service, and repair of this product. Failure to comply with these precautions or with specific warnings elsewhere violates safety standards of design, manufacture, and intended use of the product. Harris Corporation RF Communications Division assumes no liability for the customer's failure to comply with these standards.



The WARNING symbol calls attention to a procedure, practice, or the like, which, if not correctly performed or adhered to, could result in personal injury. Do not proceed beyond a WARNING symbol until the conditions identified are fully understood or met.



The CAUTION symbol calls attention to an operating procedure, practice, or the like, which, if not performed correctly or adhered to, could result in a risk of danger, damage to the equipment, or severely degrade the equipment performance.



The NOTE symbol calls attention to supplemental information, which may improve system performance or clarify a process or procedure.



The ESD symbol calls attention to procedures, practices, or the like, which could expose equipment to the effects of Electro-Static Discharge. Proper precautions must be taken to prevent ESD when handling circuit modules.

2 SAFETY TRAINING INFORMATION



Harris Corporation RF Communications Division Unity™ XG-100P portable radio generates RF electromagnetic energy during transmit mode. This radio is designed for and classified as “Occupational Use Only,” meaning it must be used only during the course of employment by individuals aware of the hazards and the ways to minimize such hazards. This radio is NOT intended for use by the “General Population” in an uncontrolled environment.

The Unity™ XG-100P portable radio has been tested and complies with the Federal Communications Commission FCC Radio Frequency (RF) exposure limits for “Occupational Use Only.” In addition, this radio complies with the following Standards and Guidelines with regard to RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC Office of Engineering and Technology (OET) Bulletin 65 Edition 97-01 Supplement C, Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields.
- American National Standards Institute (C95.1 – 1992), Institute of Electrical & Electronics Engineers, Inc (IEEE) Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz.
- American National Standards Institute (C95.3 – 1992), IEEE Recommended Practice for the Measurement of Potentially Hazardous Electromagnetic Fields – RF and Microwave.

2.1 RF EXPOSURE GUIDELINES



To ensure that exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use, always adhere to the following guidelines:

- Do not operate the radio without a proper antenna attached, as this may damage the radio and may also cause the FCC RF exposure limits to be exceeded. A proper antenna is the antenna supplied with this radio by Harris or an antenna specifically authorized by Harris Corporation RF Communications Division for use with this radio.
 - Do not transmit for more than 50% of total radio use time (“50% duty cycle”). Transmitting more than 50% of the time can cause FCC RF exposure compliance requirements to be exceeded. The radio is transmitting when the red transmit indicator appears in the display. The radio transmits by pressing the Push-To-Talk (PTT) button.
 - Always transmit using low power when possible. In addition to conserving battery charge, low power can reduce RF exposure.
 - Always use Harris authorized accessories (antennas, batteries, belt clips, speaker/microphones, etc). Use of unauthorized accessories may cause the FCC Occupational/Controlled Exposure RF compliance requirements to be exceeded.
 - Always keep the device and its antenna at least 0.47 inches (1.2 cm) from the body and at least 0.98 inches (2.5 cm) from the face when transmitting to ensure FCC RF exposure compliance requirements are not exceeded.
-

Table 2-1: RF Exposure Compliance Tested Distances

The information in this section provides the information needed to make the user aware of a RF exposure, and what to do to assure that this radio operates within the FCC RF exposure limits of this radio.

Radio Frequency	Minimum Tested Distances	
	Body	Face
VHF-High (136–174 MHz)	0.47 in (1.2 cm)*	0.98 in (2.5 cm)
UHF-Low (380–520 MHz)	0.47 in (1.2 cm)*	0.98 in (2.5 cm)
700/800 MHz (762–800 MHz)	0.47 in (1.2 cm)*	0.98 in (2.5 cm)

* Note: This device complies with FCC RF Exposure requirements for body-worn operations when used with the body-worn accessories tested and approved for the Unity XG-100P. The body-worn accessory tested with the minimum distance of 1.2 cm is the Harris Belt-Clip Part No. 12082-1291-01. In order to comply with the FCC RF Exposure requirements for body-worn operations, a minimum distance of 1.2 cm must be maintained from the back of the radio to the user’s body using the Harris Belt-Clip Part No. 12082-1291-01 or other accessory tested and approved for the Unity XG-100P.

2.2 ELECTROMAGNETIC INTERFERENCE



During transmissions, the XG-100P generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radios in areas where signs are posted to do so. Do not operate the transmitter in areas that are sensitive to electromagnetic radiation such as hospitals, aircraft, and blasting sites.

3 GENERAL SAFETY GUIDELINES



Do not crush, disassemble, reverse polarity, incinerate, or mutilate the Lithium-ion battery. Do not expose the battery to fire or temperatures above 158 °F (70 °C). The battery can rupture or explode if it becomes hot, causing serious injury. If a hissing sound is heard or an irritating smell occurs, move equipment to a well-ventilated area.



If the battery pack is ruptured or is leaking electrolyte that results in skin or eye contact with the electrolyte, immediately flush the affected area with water. If the battery electrolyte gets in the eyes, flush with water for 15 minutes and consult a physician immediately.



Do not modify Lithium-ion battery packs. The Lithium-ion battery packs are equipped with built-in safety and protection features. Should these features be disabled or tampered with in any way, the battery pack can leak acid, overheat, emit smoke, burst, and/or, ignite.



Do not dispose of Lithium-ion batteries in uncontrolled trash.



A damaged Lithium-ion battery that is exposed to water could cause a fire or explosion, causing personal injury. Batteries with cracked or damaged cases should be replaced immediately.



Do not hold onto the antenna when the radio is powered on.



Always keep the antenna at least 0.43 inches (1.1 cm) away from the body and 0.98 inch (2.5 cm) from the face when transmitting to ensure FCC RF exposure compliance requirements are not exceeded.



Do not use the XG-100P with a damaged or missing antenna. A minor burn may result if skin comes into contact with a damaged antenna. Replace a damaged antenna immediately. Operating a portable radio with the antenna missing could cause personal injury, damage the radio, and may violate FCC regulations.



Use only supplied or approved antennas. Use of unauthorized antennas, modifications or attachments could cause damage to the radio unit and may violate FCC regulations.



ACID CONTAMINATES LITHIUM-ION BATTERIES. Every effort must be made to keep lithium-ion batteries isolated from lead-acid batteries. Lead acid batteries contain sulphuric acid. Any trace of acid or acid fumes will permanently damage Lithium-ion batteries on contact. Do not use the same tools and materials such as screwdrivers, wrenches, hydrometers, or gloves when working on or around both types of batteries.

4 OPERATION

Antenna location and condition are important when operating a portable radio. Operating the radio in low lying areas or terrain, under power lines or bridges, inside of a vehicle or in a metal framed building can severely reduce the range of the unit. Mountains can also reduce the range of the unit.

In areas where transmission or reception is poor, some improvement may be obtained by ensuring the antenna is vertical. Moving a few yards in another direction or moving to a higher elevation may also improve communications. Vehicular operation can be aided with the use of an externally mounted antenna.

Battery condition is another important factor in the trouble free operation of a portable radio. Always properly charge the batteries.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and
2. This device must accept any interference received, including interference that may cause undesired operation.

4.1.1 Electronic Devices



RF energy from portable radios may affect some electronic equipment. Most modern electronic equipment in cars, hospitals, homes, etc. are shielded from RF energy. However, in areas in which you are instructed to turn off two-way radio equipment, always observe the rules. ***If in doubt, turn it off!***

4.1.2 Aircraft



Always turn off a portable radio before boarding any aircraft! Use it on the ground only with crew permission. **DO NOT use while in-flight!!**

4.1.3 Electric Blasting Caps



To prevent accidental detonation of electric blasting caps, DO NOT use two-way radios within 1000 feet of blasting operations. Always obey the "Turn Off Two-Way Radios" signs posted where electric blasting caps are being used. (OSHA Standard: 1926.900)

4.1.4 **Potentially Explosive Atmospheres**



Areas with potentially explosive atmospheres are often, but not always, clearly marked. These may be fuelling areas, such as gas stations, fuel or chemical transfer or storage facilities, and areas where the air contains chemicals or particles, such as grain, dust, or metal powders.

Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death.

Turn OFF two-way radios when in any area with a potentially explosive atmosphere. It is rare, but not impossible that a radio or its accessories could generate sparks.

5 **OPTIONS AND ACCESSORIES**

A list of Options and Accessories approved for use with the Unity™ XG-100P portable radio can be found online in the Operator's Manual 10515-0372-4200 at www.pspc.harris.com. Also reference the maintenance manual or Harris Corporation's Products and Services Catalog for all available options and accessories, including those items that do not adversely affect the RF energy exposure.



Always use Harris authorized accessories (antennas, batteries, belt clips, speaker/microphones, etc). Use of unauthorized accessories may cause the FCC Occupational/Controlled Exposure RF compliance requirements to be exceeded.



Always use the correct options and accessories (battery, antennas, speaker/microphones, etc.) for the radio. Immersion rated options must be used with an immersion rated radio. Intrinsically safe options must be used with intrinsically safe radios.

6 BATTERY PACKS

The XG-100P portable radio uses rechargeable, recyclable lithium-ion (Li-ION) battery packs. Follow the directions below to maximize the useful life of each type of battery pack.

6.1 CONDITIONING LI-ION BATTERY PACKS

Lithium-ion battery packs do not suffer from memory effect and therefore do not require conditioning.



Always use Harris authorized chargers. Use of unauthorized chargers may void the warranty.

6.2 ADDITIONAL INFORMATION

For more information regarding the proper care of portable radio battery packs or establishing a battery maintenance program, refer to ECR-7367 which may be ordered by calling toll free 1-800-368-3277, then select option 7.

6.3 BATTERY DISPOSAL



In no instance should a battery pack be incinerated. Disposing of a battery pack by burning will cause an explosion.



RECHARGEABLE BATTERY PACK DISPOSAL – The product you have purchased contains a rechargeable battery pack. The battery pack is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery pack into the municipal waste stream. Check with your local solid waste officials for details in your area for recycling options or proper disposal. Canadian and U.S. users may call Toll Free 1-800-8-BATTERY® for information and/or procedures for returning rechargeable batteries in your locality.

7 IMMERSIBLE PREVENTIVE MAINTENANCE

Preventive Maintenance for Immersion-Rated Radios



CAUTION

Unity™ XG-100P portable radios are immersible and must be serviced by a service center authorized and certified by Harris to perform the necessary tests to verify watertight integrity. As part of a thorough preventive maintenance plan, Harris Corporation recommends Immersion-Rated XG-100P portable radios, at a minimum, be tested and re-certified on an annual basis. Harris Corporation further recommends that the radios be tested on or close to the anniversary of the ship date printed on the Model Number label on the back of the radio.

8 TECHNICAL ASSISTANCE

The Technical Assistance Center's (TAC's) resources are available to help with overall system operation, maintenance, upgrades and product support. TAC is your point of contact when answers are needed to technical questions.

Product specialists, with detailed knowledge of product operation, maintenance, and repair, provide technical support via a toll-free (in North America) telephone number. Support is also available through mail, fax and e-mail.

For more information about technical assistance services, contact your sales representative, or call the Technical Assistance Center directly at:

North America:	1-800-528-7711
International:	1-434-385-2400
Fax:	1-434-455-6712
E-mail:	PSPC-tac@harris.com

9 WARRANTY

Register this product within 10 days of purchase. Registration validates the warranty coverage, and enables Harris to contact you in case of any safety notifications issued for this product.

Registration can be made on-line at www.pspc.harris.com/CustomerService or by contacting Harris Warranty Administration at the following:

U.S. & Canada:

Phone Number:	1-800-368-3277, Option 4 (toll free)
Fax Number:	1-434-455-6821
E-mail:	WarrantyClaims@Harris.com

International:

Phone Number:	1-434-455-6403
Fax Number:	1-434-455-6676
E-mail:	WarrantyClaims@Harris.com

RECHARGEABLE BATTERY WARRANTY

- A. Harris Corporation, a Delaware Corporation, through its RF Communications Division (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that nickel-cadmium, nickel-metal hydride, lithium-ion, and lithium-polymer batteries supplied by Seller shall be free from defects in material and workmanship, and shall conform to its published specifications for a period of twelve (12) months from the date of purchase.
- B. For purposes of this warranty, batteries shall be deemed defective if (1) the battery capacity is less than 80% rated capacity, or (2) the battery develops leakage.
- C. If any battery fails to meet the foregoing warranty, Seller shall correct the failure by issuing a replacement battery upon receipt of the defective battery at an Authorized Service Center (ASC) or Seller factory (for OpenSky[®] Equipment only).
- D. Replacement batteries shall be warranted only for the remaining unexpired warranty period of the original battery. This warranty becomes void if:
1. The battery has been subjected to any kind of misuse, detrimental exposure, or has been involved in an accident.
 2. The battery is used in equipment or service other than the radio equipment for which it is specified.
- E. The preceding paragraphs set forth the exclusive remedies for claims based upon defects in or non-conformity of any battery, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of all other warranties, whether oral, written, expressed, implied or statutory. NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE COMPANY BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.

This warranty applies only within the United States.

To obtain the name and address of an Authorized Service Center (ASC), ask your salesperson, or call one of the factory number(s) printed at the bottom of this page.

Harris Corporation
RF Communications Division
221 Jefferson Ridge Parkway
Lynchburg, VA 24501
1-800-528-7711

Harris Corporation
RF Communications Division
1680 University Avenue
Rochester, NY 14610
1-585-244-5830

ECR-7048D

WARRANTY

- A. Harris Corporation, a Delaware Corporation, through its RF Communications Division (hereinafter "Seller") warrants to the original purchaser for use (hereinafter "Buyer") that Equipment manufactured by or for the Seller shall be free from defects in material and workmanship, and shall conform to its published specifications. With respect to all non-Seller Equipment, Seller gives no warranty, and only the warranty, if any, given by the manufacturer shall apply. Rechargeable batteries are excluded from this warranty but are warranted under a separate Rechargeable Battery Warranty (ECR-7048).
- B. Seller's obligations set forth in Paragraph C below shall apply only to failures to meet the above warranties occurring within the following periods of time from date of sale to the Buyer and are conditioned on Buyer's giving written notice to Seller within thirty (30) days of such occurrence:
1. for fuses and non-rechargeable batteries, operable on arrival only.
 2. for parts and accessories (except as noted in B.1) sold by Seller's Service Parts Operation, ninety (90) days.
 3. for P7300, P7200, P7100^{IP}, P5400, P5300, P5200, P5100, P3300, M7300, M7200 (including V-TAC), M7100^{IP}, M5300 and M3300 radios, two (2) years, effective 10/01/2007.
 4. for UnityTM XG-100P, three (3) years.
 5. for all other equipment of Seller's manufacture, one (1) year.
- C. If any Equipment fails to meet the foregoing warranties, Seller shall correct the failure at its option (i) by repairing any defective or damaged part or parts thereof, (ii) by making available at Seller's factory any necessary repaired or replacement parts, or (iii) by replacing the failed Equipment with equivalent new or refurbished Equipment. Any repaired or replacement part furnished hereunder shall be warranted for the remainder of the warranty period of the Equipment in which it is installed. Where such failure cannot be corrected by Seller's reasonable efforts, the parties will negotiate an equitable adjustment in price. Labor to perform warranty service will be provided at no charge during the warranty period only for the Equipment covered under Paragraph B.3 and B.4. To be eligible for no-charge labor, service must be performed at Seller's factory, by an Authorized Service Center (ASC) or other Servicer approved for these purposes either at its place of business during normal business hours, for mobile or personal equipment, or at the Buyer's location, for fixed location equipment. Service on fixed location equipment more than thirty (30) miles from the Service Center or other approved Servicer's place of business will include a charge for transportation.
- D. Seller's obligations under Paragraph C shall not apply to any Equipment, or part thereof, which (i) has been modified or otherwise altered other than pursuant to Seller's written instructions or written approval or, (ii) is normally consumed in operation or, (iii) has a normal life inherently shorter than the warranty periods specified in Paragraph B, or (iv) is not properly stored, installed, used, maintained or repaired, or, (v) has been subjected to any other kind of misuse or detrimental exposure, or has been involved in an accident.
- E. The preceding paragraphs set forth the exclusive remedies for claims based upon defects in or nonconformity of the Equipment, whether the claim is in contract, warranty, tort (including negligence), strict liability or otherwise, and however instituted. Upon the expiration of the warranty period, all such liability shall terminate. The foregoing warranties are exclusive and in lieu of all other warranties, whether oral, written, expressed, implied or statutory. NO IMPLIED OR STATUTORY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR PARTICULAR PURPOSE SHALL APPLY. IN NO EVENT SHALL THE SELLER BE LIABLE FOR ANY INCIDENTAL, CONSEQUENTIAL, SPECIAL, INDIRECT OR EXEMPLARY DAMAGES.

This warranty applies only within the United States.

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