This addendum adds instructions for installing and removing the belt clip and D-Ring:

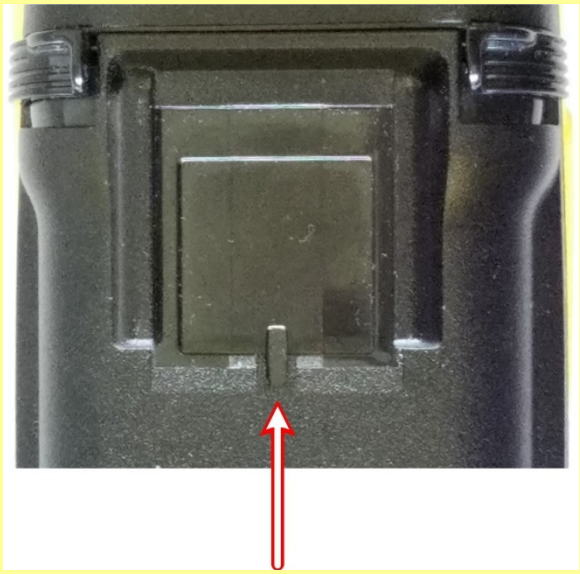
4.6 BELT CLIP

4.6.1 Installing the Belt Clip

While pressing down on the belt clip, slide into the slot on the back of the battery until it clicks into place.

4.6.2 Removing the Belt Clip

1. Press down on the belt clip.
2. Using a small flat head screw driver or equivalent, carefully pry up on the clip spring. There is a small groove in the battery that allows the flat blade to fit under the clip.



3. Slide the belt clip out of the slot on the battery.

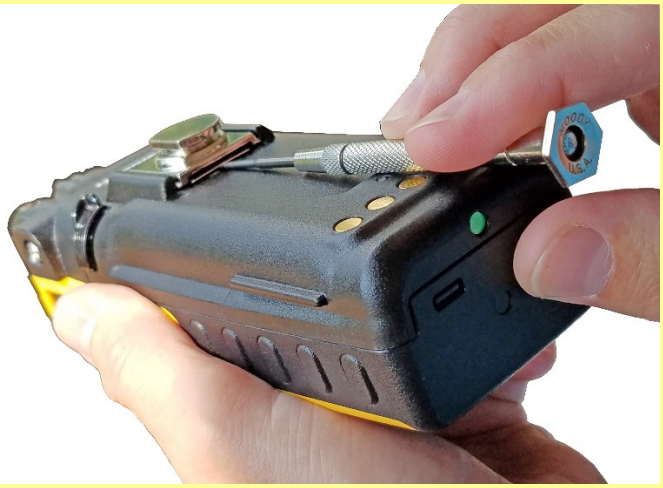
4.7 D-RING

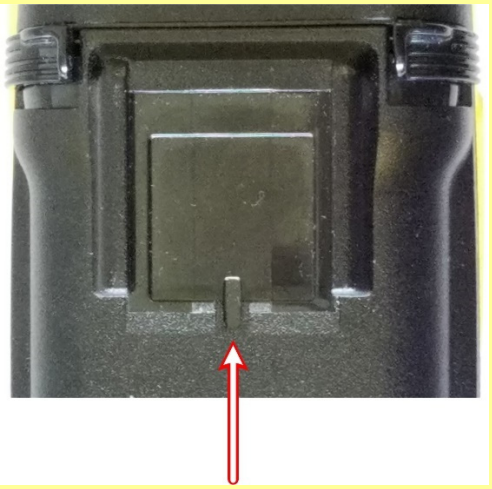
4.7.1 Installing the D-Ring

Slide the D-Ring into the slot on the back of the battery until it clicks into place.

4.7.2 Removing the D-Ring

1. Using a small flat head screw driver or equivalent, carefully pry up on the clip spring as shown below. There is a small groove in the battery that allows the flat blade to fit under the clip.





2. Slide the D-Ring out of the slot on the battery.

Operator's Manual

14221-1450-2000
Rev. D, October 2020

XG-15P Series

Portable Radios

L3HARRIS™
FAST. FORWARD.

MANUAL REVISION HISTORY

REV	DATE	REASON FOR REVISION
-	May/15	Initial release.
A	Aug/15	Added VHF split.
B	Nov/15	Added UHF split and added CE info.
C	Jan/17	Added Section 7.36 (Using the GPS Speaker Mic).
D	Oct/20	Updated Cleaning Instructions, Table 7-1, Section 7.23.2, and rebranded for L3Harris.

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L3Harris Technologies, Inc.
PSPC Business
Technical Publications
221 Jefferson Ridge Parkway
Lynchburg, VA 24501

fax your comments to: 1-434-455-6851
or
e-mail us at: PSPC_TechPubs@l3harris.com

ACKNOWLEDGEMENTS

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This product conforms to the European Union WEEE Directive 2012/19/EU. Do not dispose of this product in a public landfill. Take it to a recycling center at the end of its life.

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Repairs to this equipment should be made only by an authorized service technician or facility designated by the supplier. Changes or modifications not expressly approved by L3Harris Technologies could void the user's authority to operate the equipment.

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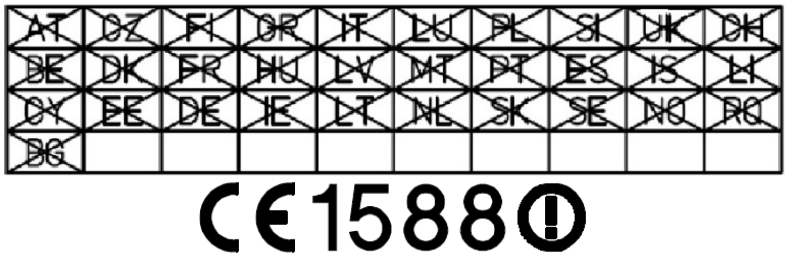

This device is a RF transceiver intended for land mobile radio applications. The device may have use restrictions, which require that the national authority be contacted for any system licensing requirements, frequency use, allowable power level, etc.

R&TTE Declaration of Conformity (DoC)

Unique identification of this DoC: 2015157TCF

We, Harris Corporation, Communications Systems Division
221 Jefferson Ridge Parkway
Lynchburg, VA 24501
Phone 434-455-6600

declare under our sole responsibility that the product:

product name: XG-15P

trade name: Harris ®

type or model: XR-PFU1B

relevant supplementary information: Land Mobile radio for public safety, utilities and transit

to which this declaration relates is in conformity with the essential requirements and other relevant requirements of the R&TTE Directive (1999/5/EC).
The product is in conformity with the following standards and/or other normative documents:

HEALTH & SAFETY (Art. 3(1)(a)): EN 60950-1: 2006 + A11:2009 + A12:2011 + A1:2010 + A2:2013; SAR: European Council Directive 2004/40/EC, European Council Directive 89/391/EEC, EN 62311:2008

EMC (Art. 3(1)(b)): EN 301 489-1 V1.9.2, EN 301 489-5 V1.3.1

SPECTRUM (Art. 3(2)): EN 300 086-2 V1.3.1, EN 300 113-2 V1.5.1

OTHER (incl. Art. 3(3) and voluntary specs):

Limitation of validity (if any): N/A

Supplementary information:
Notified body involved: American Certification Body (NB#1588)
6731 Whittier Avenue, Suite C110
McLean Virginia 22101, USA
Telephone: 703-847-4700

Technical file held by: Harris Wireless Ltd., RF Communications Division
270 Wharfedale Road
Winnersh, Wokingham, Berkshire, United Kingdom
RG41 5TP

Place and date of issue (of this DoC): October 27, 2015

Signed by or for the manufacturer:

William H Pertner

Name (in print): William H. Pertner
Title: Regulatory Manager

cs Česky [Czech]	*L3Harris Technologies* tímto prohlašuje, že tento *XG-15P UHF-H (440-512 MHz)* je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES.
da Dansk [Danish]	Undertegnede L3Harris Technologies erklærer herved, at følgende udstyr XG-15P UHF-H (440-512 MHz) overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF.
de Deutsch [German]	Hiermit erklärt *L3Harris Technologies,* dass sich das Gerät XG-15P UHF-H (440-512 MHz) in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab *L3Harris Technologies* seadme *XG-15P UHF-H (440-512 MHz)* vastavust direktiivi 1999/5/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, *L3Harris Technologies* declares that this *XG-15P UHF-H (440-512 MHz)* is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.
es Español [Spanish]	Por medio de la presente *L3Harris Technologies* declara que el *XG-15P UHF-H (440-512 MHz)* cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ *L3Harris Technologies* ΔΗΛΩΝΕΙ ΟΤΙ *XG-15P UHF-H (440-512 MHz)* ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ.
fr Français [French]	Par la présente L3Harris Technologies déclare que l'appareil XG-15P UHF-H (440-512 MHz) est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE.
it Italiano [Italian]	Con la presente L3Harris Technologies dichiara che questo XG-15P UHF-H (440-512 MHz) è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE.
Latviski [Latvian]	Ar šo *L3Harris Technologies* deklarē, *XG-15P UHF-H (440-512 MHz)* atbilst Direktīvas 1999/5/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.
Lietuvių [Lithuanian]	Šiuo *L3Harris Technologies* deklaruoja, kad šis *XG-15P UHF-H (440-512 MHz)* atitinka esminius reikalavimus ir kitas 1999/5/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart L3Harris Technologies dat het toestel XG-15P UHF-H (440-512 MHz) in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG.
mt Malti [Maltese]	Hawnhekk, *L3Harris Technologies*, jiddikjara li dan *XG-15P UHF-H (440-512 MHz)* jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/EC.

hu Magyar [Hungarian]	Alulírott, L3Harris Technologies nyilatkozom, hogy a XG-15P UHF-H (440-512 MHz) megfelel a vonatkozó alapvetõ követelményeknek és az 1999/5/EC irányelv egyéb elõírásainak.
pl Polski [Polish]	Niniejszym *L3Harris Technologies* oświadcza, że *XG-15P UHF-H (440-512 MHz)* jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/EC.
pt Português [Portuguese]	L3Harris Technologies declara que este XG-15P UHF-H (440-512 MHz) está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE.
sl Slovensko [Slovenian]	*L3Harris Technologies* izjavlja, da je ta *XG-15P UHF-H (440-512 MHz)* v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES.
Slovensky [Slovak]	*L3Harris Technologies* týmto vyhlasuje, že *XG-15P UHF-H (440-512 MHz)* spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 1999/5/ES.
fi Suomi [Finnish]	L3Harris Technologies vakuuttaa täten että XG-15P UHF-H (440-512 MHz) tyyppinen laite on direktiivin 1999/5/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar L3Harris Technologies att denna XG-15P UHF-H (440-512 MHz) står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG.
Íslenska [Icelandic]	Hér með lýsir L3Harris Technologies yfir því að XG-15P UHF-H (440-512 MHz) er í samræmi við grunnkröfur og aðrar kröfur, sem gerðar eru í tilskipun 1999/5/EC.
no Norsk [Norwegian]	L3Harris Technologies erklærer herved at utstyret XG-15P UHF-H (440-512 MHz) er i samsvar med de grunnleggende krav og øvrige relevante krav i direktiv 1999/5/EF.

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1. REGULATORY AND SAFETY INFORMATION

1.1 SAFETY CONVENTIONS

The following conventions are used throughout this manual 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 warning elsewhere in this manual violates safety standards of design, manufacture, and intended use of the product. L3Harris 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 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.

1.2 SAFETY TRAINING INFORMATION

The L3Harris XG-15P 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 XG-15P portable radio has been tested and complies with the FCC RF exposure limits for "Occupational Use Only." In addition, this L3Harris radio complies with the following Standards and Guidelines regarding RF energy and electromagnetic energy levels and evaluation of such levels for exposure to humans:

- FCC 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), 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.

- IC Standard RSS-102 Issue 5, March 2015, Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands).
- DIRECTIVE 2004/40/EC OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 29 April 2004 on the minimum health and safety requirements regarding the exposure of workers to the risks arising from physical agents (electromagnetic fields) and amended by:
  - Directive 2007/30/EC of the European Parliament and of the Council of 20 June 2007
  - Directive 2008/46/EC of the European Parliament and of the Council of 23 April 2008
  - Regulation (EC) No 1137/2008 of the European Parliament and of the Council of 22 October 2008
  - Directive 2012/11/EU of the European Parliament and of the Council of 19 April 2012

1.2.1 RF Exposure Guidelines

CAUTION

To ensure that exposure to RF electromagnetic energy is within the FCC allowable limits for occupational use and/or the exposure limit values in Annex A of EU Directive 2004/40/EC, 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 and/or the exposure limit values in Annex A of EU Directive 2004/40/EC to be exceeded. A proper antenna is the antenna supplied with this radio by L3Harris or an antenna specifically authorized by L3Harris for use with this radio. (Refer to Table 6-1.)
- 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 and/or the exposure limit values in Annex A of EU Directive 2004/40/EC to be exceeded. The radio is transmitting when the "TX" indicator appears in the display. The radio will transmit by pressing the "PTT" (Push-To-Talk) button.
- ALWAYS transmit using low power when possible. In addition to conserving battery charge, low power can reduce RF exposure.
- ALWAYS use L3Harris authorized accessories (antennas, batteries, belt clips, speaker/mics, etc). Use of unauthorized accessories may cause the FCC Occupational/Controlled Exposure RF compliance requirements and/or the exposure limit values in Annex A of EU Directive 2004/40/EC to be exceeded. (Refer to Table 1-1.)
- As noted in Table 1-1, ALWAYS keep the housing of the transmitter ***AT LEAST*** 1.4 cm (0.55 inches) from the body and at least 2.5 cm (0.98 inches) from the face when transmitting to ensure FCC RF exposure compliance requirements and/or the exposure limit values in Annex A of EU Directive 2004/40/EC are not exceeded. However, to provide the best sound quality to the recipients of your transmission, L3Harris recommends you hold the microphone at least 5 cm (2 inches) from mouth, and slightly off to one side.

Table 1-1: RF Exposure Compliance Testing Distances

RADIO FREQUENCY (MHz)	TESTED DISTANCES *(worst case scenario)*	
	Body[1]	**Face**
700/800 MHz (768.0125 - 775.9875) (798.0125 - 804.9875) (806.0125 - 815.09875) (851.0125 - 860.9875)	1.4 cm (0.55 in.)	2.5 cm (0.98 in.)
VHF (136 - 174 MHz)	**With Body-Worn Accessory:** 0 cm (0 in.)	2.5 cm (0.98 in.)
UHF (440-512MHz)	**With Body-Worn Accessory:** 0 cm (0 in.)	2.5 cm (0.98 in)

The information in this section provides the information needed to make the user aware of RF exposure, and what to do to assure that this radio operates within the FCC RF exposure limits and/or the exposure limit values in Annex A of EU Directive 2004/40/EC.

1.2.2 Electromagnetic Interference/Compatibility

During transmissions, this L3Harris radio generates RF energy that can possibly cause interference with other devices or systems. To avoid such interference, turn off the radio 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.

1.3 REGULATORY APPROVALS

1.3.1 Part 15

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.

1.3.2 Industry Canada

This device complies with Industry Canada license-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

1.4 OPERATING TIPS

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.

[1] This is worst case based on the thinnest body mount accessory (belt clip).

In areas where transmission or reception is poor, some improvement may be obtained by ensuring that 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 battery.

1.5 EFFICIENT RADIO OPERATION

Keep the antenna in a vertical position when receiving or transmitting a message.

Do NOT hold onto the antenna when the radio is powered on!

1.5.1 Antenna Care and Replacement

Do not use the portable radio with a damaged or missing antenna. A minor burn may result if a damaged antenna comes into contact with the skin. 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 the supplied or approved antenna. Unauthorized antennas, modifications, or attachments could cause damage to the radio unit and may violate FCC regulations. (Refer to Table 6-1.)

1.5.2 Electronic Devices

RF energy from portable radios may affect some electronic equipment. Most modern electronic equipment in cars, hospitals, homes, etc. is 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!

1.5.3 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!!**

1.5.4 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)

1.5.5 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.

2. RENSEIGNEMENTS SUR LA RÉGLEMENTATION ET SÉCURITÉ

2.1 CONVENTIONS SUR LES SYMBOLES DE SÉCURITÉ

Les conventions suivantes sont utilisées dans le présent manuel pour avertir l'utilisateur des précautions générales de sécurité qui doivent être observées pendant toutes les phases d'opération, d'entretien et de réparation de ce produit. Le non-respect de ces précautions ou d'avertissements précisés ailleurs enfreint les normes de sécurité de la conception, de la fabrication et de l'utilisation prévue du produit. L3Harris n'assume aucune responsabilité pour le non-respect de ces normes par le client.

Le symbole MISE EN GARDE attire l'attention sur une procédure ou une pratique qui, si elle n'est pas correctement effectuée ou observée, pourrait entraîner une blessure personnelle. Ne pas poursuivre au-delà d'un symbole de MISE EN GARDE avant que les conditions identifiées soient complètement comprises ou satisfaites.

Le symbole **AVERTISSEMENT** attire l'attention sur une procédure ou une pratique opérationnelle qui, si elle n'est pas correctement effectuée ou observée, pourrait entraîner un bris d'équipement ou une importante baisse de rendement de l'équipement.

Le symbole **REMARQUE** attire l'attention sur des renseignements supplémentaires qui peuvent améliorer le rendement du système ou clarifier un processus ou une procédure.

2.2 RENSEIGNEMENTS SUR LA FORMATION SUR LA SÉCURITÉ

La radio portative L3Harris XG-15P produit de l'énergie électromagnétique des RF lorsqu'en mode de transmission. Cette radio est conçue et classée pour une « Utilisation professionnelle seulement », ce qui signifie qu'elle ne doit être utilisée que dans le cadre d'un emploi par des individus conscients des risques et des moyens de limiter ceux-ci. Cette radio N'EST PAS conçue pour une utilisation par la « Population générale » dans un environnement non contrôlé.

La radio portative XG-15P a été testée et est conforme aux limites d'exposition aux RF de la FCC pour une « Utilisation professionnelle seulement ». De plus, cette radio L3Harris est conforme aux normes et directives suivantes quant à l'énergie des RF et aux niveaux d'énergie électromagnétique, ainsi qu'à l'évaluation de ces niveaux pour l'exposition aux humains :

- Bulletin 65 du OET de la FCC, édition 97-01, supplément C, portant sur l'évaluation de la conformité aux directives de la FCC quant à l'exposition humaine aux champs électromagnétiques des radiofréquences.

- American National Standards Institute (C95.1 – 1992), norme de l'IEEE sur les niveaux sécuritaires d'exposition humaine aux champs électromagnétiques des radiofréquences, 3 kHz à 300 GHz.
- American National Standards Institute (C95.3 – 1992), pratique recommandée par l'IEEE pour la mesure des champs électromagnétiques potentiellement dangereux – RF et micro-ondes.
- IC la norme RSS-102, Numéro 4, 2010: Gestion du spectre et télécommunications normes radioélectriques. L'exposition aux radiofréquences Conformité des appareils de radiocommunication (toutes bandes de fréquences).

2.2.1 Directives sur l'exposition aux RF

Pour s'assurer que l'exposition à l'énergie électromagnétique des RF se situe dans les limites acceptables de la FCC pour l'utilisation professionnelle, respectez toujours les directives suivantes :

- N'utilisez PAS la radio sans qu'une antenne appropriée y soit connectée, car ceci peut endommager la radio et également causer un dépassement des limites d'exposition aux RF de la FCC. Une antenne appropriée est celle fournie par L3Harris avec cette radio, ou une antenne spécifiquement autorisée par L3Harris pour être utilisée avec cette radio. (Reportez-vous à Table 6-1.)
- Ne transmettez PAS pendant plus de 50 % de la durée d'utilisation totale de la radio (« cycle de service de 50 % »). La transmission pendant plus de 50 % du temps peut causer un dépassement des exigences de conformité de la FCC en matière d'exposition aux RF. La radio transmet lorsque l'indicateur « TX » apparaît sur l'affichage. La radio transmet lorsqu'on appuie sur le bouton « PTT » (bouton de microphone).
- Transmettez TOUJOURS en basse puissance lorsque possible. En plus de préserver la charge de la pile, une faible puissance réduit l'exposition aux RF.
- Utilisez TOUJOURS des accessoires autorisés L3Harris (antennes, piles, pinces de ceinture, haut-parleurs/micros, etc.). L'utilisation d'accessoires non autorisés peut entraîner un dépassement des exigences de conformité pour une exposition aux RF professionnelle ou contrôlée de la FCC. (Reportez-vous à Tableau 2-1.)
- Tel qu'indiqué dans Tableau 2-1, conservez TOUJOURS l'appareil et son antenne à ***AU MOINS*** 1,4 cm du corps, et à au moins 2,5 cm du visage pendant la transmission, pour vous assurer de ne pas dépasser les exigences de conformité de la FCC en matière d'exposition aux RF. Cependant, pour offrir la meilleure qualité sonore aux auditeurs de votre transmission, L3Harris recommande de tenir le microphone à au moins 5 cm de votre bouche et légèrement déplacé sur un côté.

Tableau 2-1: Distances de test de conformité des expositions aux RF

RADIO FRÉQUENCES	DISTANCES TESTÉES *(pire des scénarios)*	
	Corps[2]	**Visage**
700/800 MHz (768.0125 - 775.9875) (798.0125 - 804.9875) (806.0125 - 815.09875) (851.0125 - 860.9875)	1,4 cm	2,5 cm
VHF (136 - 174 MHz)	avec l'accessoire porté sur le corps: 0 cm (0 in.)	2,5 cm
UHF (440-512MHz)	avec l'accessoire porté sur le corps: 0 cm (0 in.)	2,5 cm

Dans cette section figurent les renseignements nécessaires pour sensibiliser l'utilisateur à l'exposition aux RF et sur ce qu'il faut faire pour s'assurer que cette radio fonctionne dans les limites d'exposition aux RF de la FCC.

2.2.2 Interférence/Compatibilité Électromagnétique

Pendant les transmissions, cette radio L3Harris produit de l'énergie des RF qui peut causer de l'interférence avec d'autres appareils ou systèmes. Pour éviter de telles interférences, fermez la radio dans les zones où il est indiqué de le faire. N'utilisez PAS le transmetteur dans des zones sensibles aux radiations électromagnétiques, comme les hôpitaux, les avions et les sites de détonation.

2.3 INTERFÉRENCE DES RADIOFRÉQUENCES

2.3.1 Partie 15 de la FCC

Cet appareil est conforme à la Partie 15 de la réglementation de la FCC. Le fonctionnement est soumis aux deux conditions suivantes :

1. Cet appareil ne doit pas causer une interférence nuisible; et
2. Cet appareil doit accepter toute interférence reçue, y compris une interférence qui peut causer un fonctionnement non souhaité.

2.3.2 Industrie Canada

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

[2] Ce est le pire des cas basée sur le corps plus mince monter accessoire (clip ceinture).

2.4 CONSEILS D'UTILISATION

L'emplacement et l'état de l'antenne sont importants pour l'utilisation d'une radio portative. L'utilisation de la radio dans des zones de faible élévation, sous des lignes électriques ou des ponts, à l'intérieur d'un véhicule ou dans un immeuble à ossature métallique, peut réduire la portée de l'appareil de manière considérable. Les montagnes peuvent également réduire la portée de l'unité.

Dans les zones où la transmission ou la réception est insatisfaisante, certaines améliorations peuvent être obtenues en s'assurant que l'antenne est verticale. Se déplacer de quelques mètres dans une autre direction ou à un emplacement plus élevé peut également améliorer les communications. L'utilisation d'une antenne fixée à l'extérieur peut faciliter le fonctionnement dans un véhicule.

L'état de la pile est un autre facteur important d'une utilisation sans tracas d'une radio portative. Chargez toujours correctement la pile.

2.4.1 Utilisation Efficace de la Radio

Gardez l'antenne dans une position verticale pendant la réception ou la transmission d'un message.

Ne tenez PAS l'antenne lorsque la radio est allumée!

2.4.1.1 Entretien Et Remplacement De L'antenne

N'utilisez pas la radio portative si son antenne est endommagée ou absente. Une brûlure légère peut se produire au contact d'une antenne endommagée avec la peau. Remplacez immédiatement une antenne endommagée. L'utilisation d'une radio portative alors que l'antenne est absente peut causer des blessures, endommager la radio et pourrait enfreindre la réglementation de la FCC.

Utilisez seulement l'antenne fournie ou une antenne approuvée. Des antennes non autorisées, des modifications ou des ajouts à une antenne peuvent endommager la radio et enfreindre la réglementation de la FCC. (Reportez-vous à Table 6-1.)

2.4.1.2 Appareils Électroniques

L'énergie des RF provenant de radios portatives peut affecter certains appareils électroniques. La majorité de l'équipement électronique moderne dans les voitures, les hôpitaux, les maisons, etc. est blindé contre l'énergie des RF. Cependant, dans les zones où l'on vous demande de fermer l'équipement de radio bidirectionnelle, respectez toujours les règles. En cas de doute, éteignez-le!

2.4.1.3 Avion

Éteignez toujours une radio portative avant d'embarquer à bord d'un avion!

Ne l'utilisez au sol qu'avec la permission de l'équipage.

- **NE l'utilisez PAS durant le vol!**

2.4.1.4 Détonateurs Électriques

Pour prévenir la détonation accidentelle des détonateurs électriques, n'utilisez PAS de radios bidirectionnelles à moins de 305 m (1 000 pi) des opérations de détonation. Respectez toujours les indications « Éteindre les radios bidirectionnelles » situées là où des détonateurs électriques sont utilisés. (Norme OSHA : 1926.900)

2.4.1.5 Atmosphère Potentiellement Explosive

Les zones ayant une atmosphère potentiellement explosive sont souvent, mais pas toujours, identifiées clairement comme telles. Il peut s'agir de zones d'alimentation en carburant, comme les postes d'essence, les installations de stockage ou de transfert de carburant ou de produits chimiques, ainsi que les zones dont l'air contient des produits chimiques ou des particules, comme des grains, de la poussière ou des poudres métalliques.

Des étincelles dans de telles zones peuvent provoquer une explosion ou un incendie, causant ainsi des blessures ou même la mort.

Éteignez les radios bidirectionnelles dans toute zone ayant une atmosphère potentiellement explosive. Il est rare, mais pas impossible qu'une radio ou ses accessoires produisent des étincelles.

3. CLEANING

Keep the exterior of the radio, battery, antenna, and radio accessories clean.

Periodically clean using the following procedures:

1. To remove dust and dirt, clean using a damp clean cloth (warm water and mild detergent soap).
2. Follow by wiping with a damp (warm water) clean cloth. Wipe dry with a clean cloth.
3. Remove the battery and wipe the battery and radio contacts using a soft dry cloth to remove dirt or grease. This will ensure efficient power transfer from the battery to the radio.
4. Remove any accessories and clean the accessories Universal Device Connector (UDC) contacts using a clean dry cloth. When the UDC is not in use, cover the connector with the protective dust cap to prevent the build-up of dust or water particles.
5. If the radio is used in a harsh environment (such as driving rain, salt fog, etc.), it may be necessary to periodically dry and clean the battery and radio contacts with a soft dry cloth or soft-bristle non-metallic brush.

For more rigorous cleaning, use the following procedure:

CAUTION

Do not use chemical cleaners, spray, or petroleum-based products. They may damage the radio housing. We recommend using Calla 1452 or equivalent.

Always follow all manufacturer's usage recommendations when using any cleaning product/solution. This includes, but is not limited to, ensuring the work area is properly ventilated and the wearing of safety glasses/goggles.

1. Apply the cleaning solution to a clean damp cloth and clean the radio.

NOTE

Do not spray cleaning solution directly on radio. To clean the radio in the speaker and microphone areas, carefully wipe these areas but prevent the cleaning solution from entering the speaker or microphone openings.

2. Wipe off the radio with a clean damp cloth using mild warm soapy water.
3. Follow up by wiping off the radio with a clean damp cloth using warm water only.
4. Wipe dry with a clean cloth.

4. BATTERIES

The XG-15P series portable radios use rechargeable, recyclable Lithium-Ion (Li-Ion) batteries. Please follow the directions below to maximize the useful life of the battery.

Do not disassemble or modify Lithium battery packs. Lithium 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 electrolyte, overheat, emit smoke, burst, and/or, ignite.

If the battery 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.

4.1 BATTERY CARE/MAINTENANCE

For 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 (international: 1-434-455-6403) or via https://premier.pspc.harris.com/infocenter/.

4.2 STORING LI-ION BATTERY PACKS

If a battery pack is expected to be idle for a month or more, it should be properly prepared. Li-Ion battery packs should not be stored fully charged. Before storing the battery pack, discharge it to 40% capacity. If the battery is not discharged prior to storage, its overall capacity may be reduced. Although all battery packs experience some capacity loss during storage, the shelf life for Li-Ion battery packs is about three months. However, note that any capacity drop which occurs during storage is permanent and cannot be reversed. Li-Ion battery packs should be purchased and used immediately. They should not be stock-piled without a rotating stock plan.

4.3 CHARGING BATTERY PACKS

Battery chargers are available from L3Harris with nominal charge times. Combinations include single and multi-position chargers.

L3Harris chargers are specifically designed for charging Lithium-Ion battery packs. The chargers are chemistry-specific for the battery packs and automatically adjust the charging profiles accordingly. Refer to the appropriate charger manual for specific operating instructions.

Observe the following guidelines when charging a battery pack:

- Avoid high temperature during charging.
- Discontinue use if the charger is overheating.
- Only charge L3Harris battery packs using a charger approved for use by L3Harris.
- Do not leave batteries in the charger indefinitely. For best results leave the battery in the charger for two to six hours after the Green Ready LED comes on. Then place the battery pack into service and fully discharge (as indicated by the radio low battery warning) before re-charging.

If any faults are encountered while charging the battery pack, consult the charger's manual to determine the cause and possible corrective action.

4.4 CHANGING THE BATTERY PACK

4.4.1 Removing the Battery Pack

Make sure the power to the radio is turned OFF.

CAUTION

Although the XG-15P has been designed to tolerate changing the battery pack without turning power off, L3Harris recommends turning the radio off before changing battery packs to ensure safety and best operation.

1. Press or pull both latches on either side of the battery pack ① toward the bottom of the radio simultaneously.
2. Pull the battery ② away from the radio.
3. Remove the battery pack from the radio.

Figure 4-1: Removing the Battery Pack

4.4.2 Attaching the Battery Pack

Make sure the power to the radio is turned OFF.

1. Align the tabs at each side on the bottom of the battery pack with the slots at the bottom of the battery cavity ①.
2. Push the top of the battery pack ② down until the latches click to attach the battery to the radio.
3. Tug gently to verify that the latches are secure and the battery pack is properly attached to the radio.

Figure 4-2: Attaching the Battery Pack

4.5 BATTERY DISPOSAL

CAUTION

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

RECHARGEABLE BATTERY PACK DISPOSAL – The product you have purchased contains a rechargeable battery. The battery is recyclable. At the end of its useful life, under various state and local laws, it may be illegal to dispose of this battery 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.

5. INTRODUCTION

The XG-15P series portable radio is available in a System model with a 15-button DTMF front-mounted keypad.

Figure 5-1: XG-15P Radio

The XG-15P portable radio delivers end-to-end encrypted digital voice and IP data communications. It is designed to support multiple operating modes including:

- P25 Trunked Mode
- P25 Digital Conventional Mode
- Conventional Analog Mode

The XG-15P supports a full range of advanced digital trunking features, including voice group calls, priority scanning, emergency calls, late call entry, and dynamic reconfiguration. It performs autonomous roaming for wide area applications. High quality voice coding and robust audio components assure speech clarity.

In the trunked modes, the user selects a communications “operating” system and group. While communicating in a trunked mode, channel selection is transparent to the user and is controlled via digital communication with the system controller. This provides advanced programmable features and fast access to communication channels.

In the Conventional Analog mode, the user selects a channel and communicates directly on that channel. A channel is a transmit/receive frequency pair.

The exact operation of the radio depends on the operating mode, the radio’s programming, and the particular radio system. Most features described in this manual can be enabled through programming. Consult your System Administrator for the particular features programmed into your XG-15P. Then refer to the corresponding section(s) within this manual for feature and operation information.

5.1 WATER RESISTANCE

The XG-15P series portable radios operate reliably, even under adverse conditions. These radios meet MIL-STD-810F specifications for wind driven rain, humidity, and salt fog.

5.2 UNIVERSAL DEVICE CONNECTOR

The Universal Device Connector (UDC) provides connections for external accessories such as a headset, a speaker-microphone, audio test box, audio test cables, and programming cables. The UDC is located on the right side of the radio, opposite the PTT Button. The UDC facilitates programming and testing the radio. The UDC pins perform different functions depending on the accessory attached to the UDC.

Figure 5-2: XG-15P 15-Pin Universal Device Connector

6. OPTIONS AND ACCESSORIES

Table 6-1 lists the Options and Accessories tested for use with the XG-15P series portable radios. Refer to the Products and Services Catalog for a complete list of options and accessories, including those items that do not adversely affect the RF energy exposure.

Always use L3Harris authorized accessories (antennas, batteries, belt clips, speaker/mics, etc). Use of unauthorized accessories may cause the FCC Occupational/Controlled Exposure RF compliance requirements to be exceeded. Refer to Table 1-1.

Always use the correct options and accessories (battery, antenna, speaker/mic, etc.) for the radio. See Table 6-1.

Do not over tighten the antenna! Antenna torque must not exceed 1 Nm.

Table 6-1: Options and Accessories

DESCRIPTION	PART NUMBER
ANTENNAS	
¼ Wave Whip, Wide Bandwidth, 800 MHz	KRE1011506/2
Helical Coil, 136-151 MHz	KRE1011219/1
Helical Coil, 150-162 MHz	KRE1011219/2
Helical Coil Antenna, 162-174 MHz	KRE1011219/3
Helical Coil, 150-174 MHz	KRE1011219/21
Helical Stub, 440-494 MHz	KRE1011219/12
Helical Stub, 470-512 MHz	KRE1011219/14
1/4 Wave Whip, 440-512 MHz	KRE1011223/12
BATTERIES	
Battery, Li-Ion	14002-0214-01
CHARGERS	
Power Adapter Kit, VC4000 Charger	PS-007810-001
VC4000 Tri-Chemistry Charger	CH-017231-001
Single Charger, Tri-Chemistry	CH-104560-007
6-bay Charger, Li-Ion/Polymer	12082-0314-01
Wall Mount Kit, 6-Bay Li-Ion/Poly Charger	12082-0315-01
Charger, 6-Bay, Tri-Chemistry	CH-104570-007
AUDIO ACCESSORIES	
Speaker Mic without Antenna (cc) provision	MC-023933-001
Speaker-Mic (SML), black, no ant.	MC-023933-003
Speaker-Microphone with Noise-Canceling	MC-023933-501
Rugged Speaker-Microhpone w/ man-down	MC-011617-651
Earphone for Speaker Mic	LS103239V1
Earphone for Speaker Mic, right angle jack	LS103239V2
Ruggedized Speaker Mic, Coil Cord	MC-011617-601
Standard Speaker Mic, Non-Antenna	MC-011617-701
GPS Speaker Mic	MC-009104-002

DESCRIPTION	PART NUMBER
Speaker Mic, Rugged, Coiled, Hirose Port	MC-011617-611
Tac4 Headset	EA-009580-031
Fire Speaker MIC	12150-4001-03
Fire Speaker MIC, Hirose	12150-4001-04
DROP SHIP AUDIO ACCESSORIES	
Earphone Kit, Black	EA-009580-001
Earphone Kit, Beige	EA-009580-002
2-Wire Kit, Palm Mic, Black	EA-009580-003
2-Wire Kit, Palm Mic, Beige	EA-009580-004
3-Wire Kit, Mini-Lapel Mic, Black	EA-009580-005
3-Wire Kit, Mini-Lapel Mic, Beige	EA-009580-006
Explorer Headset with PTT	EA-009580-007
Lightweight Headset Single Speaker with PTT	EA-009580-008
Breeze Headset with PTT	EA-009580-009
Headset, Heavy Duty, N/C Behind-the-Head, with PTT	EA-009580-010
Ranger Headset with PTT	EA-009580-011
Skull Mic with Body PTT and Earcup	EA-009580-012
Headset, Heavy Duty, N/C Over-the-Head, with PTT	EA-009580-013
Throat Mic with Acoustic Tube and Body PTT	EA-009580-014
Throat Mic with Acoustic Tube, Body PTT, and Ring PTT	EA-009580-015
Breeze Headset with PTT and Pigtail Jack	EA-009580-016
Hurricane Headset with PTT	EA-009580-017
Hurricane Headset with PTT and Pigtail Jack	EA-009580-018
Audio Accessories – Requires UDC to 6-pin Hirose adapter 14002-0197-02	
1 Wire Earphone Kit Black (receive only no transmit)	V1-10168
1 Wire Earphone Kit Beige (Receive only no transmit)	V1-10167
2 Wire Palm Microphone Kit Black	V1-10166
2 Wire Palm Microphone Kit Beige	V1-10165
3 Wire Mini Lapel Microphone Kit Black	V1-10164
3 Wire Mini Lapel Microphone Kit Beige	V1-10163
Breeze, lightweight, behind-the-head, single spkr with std PTT	V4-BA2MD1
Breeze, lightweight, behind-the-head, single spkr w/std. PTT & 2.5mm pigtail for PTT	V4-BA2MD3B
Lightweight Single Spkr Padded Headband with std PTT	V4-10190
Ranger Single Speaker gehind-the-head with std PTT	V4-NR2MD1
Over-the-head Dual Speaker Heavy Duty with std PTT	V4-10148
Over-the-Head Dual Speaker Heavy Duty with std PTT-IS/ATEX	V4-10148-S
Behind-the-Head Dual Speaker Heavy Duty with std PTT	V4-10001
Behind-the-Head Dual Speaker Heavy Duty with std PTT-IS/ATEX	V4-10001-S
Professional Throat Mic with Acoustic Tube & 80mm PTT	V1-T12MD137
Professional Skull Mic with Earcup, Aviation Quality & 80 MM PTT	V4-10279
CARRYING CASE ACCESSORIES	
Leather Carrying Case without D-Rings Kit, consists of: Leather Case without D-rings Elastic Strap Swivel Mount, used with Belt Loop	**Kit: CC-023931-003,** incl: CC-023931-001 FM-011820 KRY 101 1608/2 used with: KRY 101 1609/1
Nylon Case (black) with Belt Loop	CC-023932-001 KRY 101 1609/1
Nylon “T” Strap Holder	KRY 101 1656/1
Nylon Case (Olive Drab)	14002-0217-01
Standard Leather Case with D-Rings	CC-014528-002
Shoulder Strap with Loop for Speaker Mic	CC-014524-001

DESCRIPTION	PART NUMBER
Standard Black Nylon Case with Belt Loop Kit, consists of: Standard Black Nylon Case Standard Leather Belt Loop	**Kit: CC-014534-002**, incl: CC-014534-001 CC-014527
Standard Restraining Strap used with Shoulder Strap with Loop for Speaker/Mic	CC-014524-002
Leather Case Kit 2: Leather Case w/ D-rings (P/N: CC-023931-0032), Swivel-Mount (P/N: KRY 101 1608/2), Elastic Strap (P/N: FM-011820) and Belt Loop (P/N: KRY 101 1609/1)	CC-023931-004
Leather Case w/D-rings, Elastic Strap (P/N: FM-011820), Shoulder Strap (P/N: CC103333V1)	CC-023931-002
Metal Belt Clip (alternate)	CC-011318
Nylon Case (Orange) w/ Leather Belt Loop (P/N: KRY 101 1609/1)	CC-023932-002
Bee Nylon Case (Black) with Swivel	CC-014534-0014
Bee Nylon Case (Black) with Integral Belt-Clip	CC-014534-002
Bee Leather Case with Swivel	CC-014528-001
Bee Leather Belt Loop	CC-014527
Bee Short Leather Retaining Strap (used with Shoulder Strap)	CC-014524-002
Merzon Belt Loop	14002-0218-01
Leather Belt Loop and Metal Swivel Mount (P/N: KRY 101 1608/2)	KRY 101 1609/1
Metal Belt Clip (standard)	CC23894
MISCELLANEOUS	
UDC to 6-pin Hirose adapter	14002-0197-02
GPS Adapter	14002-2014-01

7. OPERATION

7.1 TURNING ON THE RADIO

1. Power ON the radio by rotating the POWER ON-OFF/VOLUME knob clockwise. A short alert signal (if enabled through programming) indicates the radio is ready to use.

NOTE

The radio can be programmed to require the entry of a PIN to operate the radio. Check with your System Administrator if you forget your PIN. As the PIN is entered, an asterisk is displayed for each digit. The actual value is not displayed.

2. The display shows the last selected system and group or a default system and group (depending on programming).
3. Adjust the POWER ON-OFF/VOLUME knob to the desired volume level.
4. Select the desired system and group. The display indicates the current system and group names.
5. The radio is now ready to transmit and receive calls.

NOTE

In the trunked environment, CC SCAN will be displayed if communication with the system's control channel cannot be established. This may occur if, for example, the radio is out of range of the trunking site. It may be necessary to move to another location or select another trunking system to re-establish the control channel link for trunked mode operations. CC SCAN is displayed on the group line until a control channel is accessed. The length of time before the radio enters CC Scan after losing communication with the Control Channel is configurable in RPM.

7.2 CONTROLS

The radio features two rotary control knobs and an emergency button mounted on the top of the radio. The Push-To-Talk and two option buttons are located on the side. The front mounted keypad has 15 buttons.

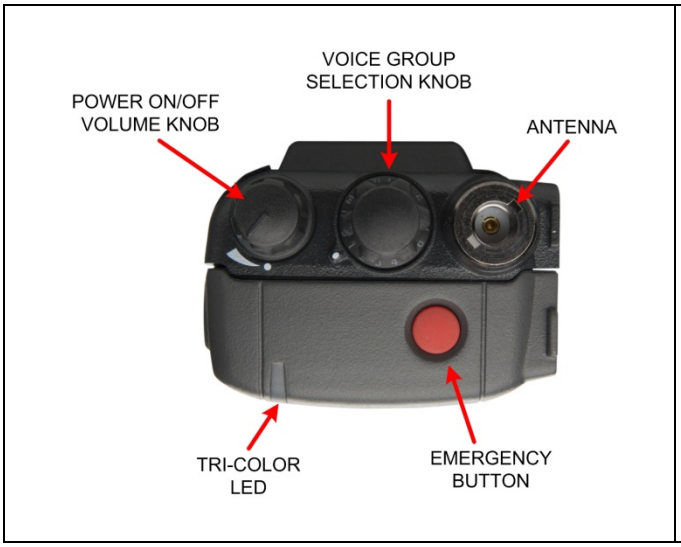

Figure 7-1: Top View

Figure 7-2: Side View

7.2.1 Buttons, Knobs, and Switch

The functions of the buttons and knob controls vary depending on the mode of operation. Their functions are detailed in Table 7-1 and Table 7-2.

Table 7-1: Buttons, Knobs, and Switch Functions

CONTROL	DESCRIPTION
POWER ON-OFF/VOLUME KNOB	Applies power to and adjusts the receiver's volume. Rotating the control clockwise applies power to the radio. A single alert tone (if enabled through programming) indicates the radio is operational. Rotating the control clockwise increases the volume level. Minimum volume levels may be programmed into the radio to prevent missed calls due to a low volume setting. While adjusting the volume, the display will momentarily indicate the volume level (i.e., ***VOL=31***). The volume range is from a minimum programmed level of zero (displayed as **OFF** in the display) up to 40, which is the loudest level.
VOICE GROUP SELECTION CONTROL KNOB	Selects systems or group/channels (depending on programming). This is a 16-position rotary knob.
EMERGENCY/ HOME BUTTON	Automatically selects the pre-programmed Group/System by pressing and holding for a programmed duration. It can also be used to declare an emergency by pressing and holding for a programmed duration. The button must be pre-programmed for either operation, but not both.
PTT BUTTON	Push-To-Talk must be pressed before voice transmission begins. In trunked mode, the radio's ID is transmitted upon depression of the PTT button.
SIDE OPTION BUTTON 1 ○	Activates one of a number of programmable software options selected during PC programming. Programmable options include hi/low power settings, keypad lock, LCD contrast, and LCD and keypad back lighting.
CLEAR/MONITOR BUTTON ⊙	Exits the current operation (removing all displays associated with it) and returns the radio to the selected Talk Group. Terminates individual and telephone interconnect calls. If a different button is programmed for the Clear/Monitor function, a radio declaring an emergency must use the One Button Emergency Clear functionality to clear the emergency and the user cannot clear another users emergency if this button is moved. One Button Emergency Clear must be enabled via RPM2 and allows the declaring radio to clear its emergency by pressing the emergency button. In conventional mode: allows the user to monitor the channel for activity.

7.2.2 Keypad

The front mounted keypad of the XG-15P has 15 buttons. Refer to Figure 7-3.

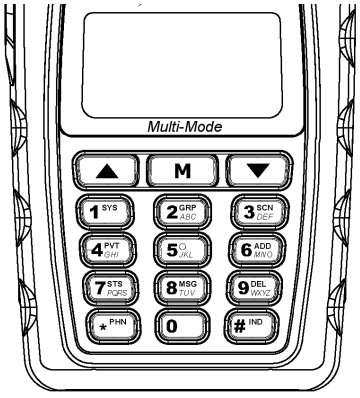

Figure 7-3: XG-15P Keypad

Table 7-2: XG-15P Keypad Functions

KEY	FUNCTION
M	Primary Function: Accesses the pre-stored menu. Secondary Function: Activates a selected item within the menu. This is similar to an "Enter" key.
▲ ▼	Primary Function: Allows the user to scroll through available systems, groups, or channels, depending on personality programming. Secondary Function: Changes the selection for an item within a list.
1 SYS, 2 GRP ABC, 3 SCN DEF, 4 PVT GHI, 5 JKL, 6 ADD MNO, 7 STS PQRS, 8 MSG TUV, 9 DEL WXYZ, 0, * PHN, # IND	Primary Function: Refer to the separate key definitions within this table. Secondary Function: These keys function much as a typical DTMF telephone pad 0-9, *, and # keys; and are used to place telephone interconnect and individual (unit-to-unit) calls.
1 SYS	Selects a specific system. If the rotary knob is used to select the system and more than 16 systems are programmed in the radio, the 1 SYS key is used to select additional banks (groupings) of systems.
2 GRP ABC	Selects a specific group.
3 SCN DEF	Turns the Scan operation ON and OFF.
4 PVT GHI	Enables or disables encryption for the system/group/channel displayed.
6 ADD MNO	Adds groups or channels from the currently selected system to the Scan list.
7 STS PQRS	Status. Access to the status list (0-9). The Status key permits the transmission of a pre-programmed status message to a P25T site.
8 MSG TUV	Message. Access to the message list (0-9). The Message key permits the transmission of a pre-programmed message to a P25T site.
9 DEL WXYZ	Deletes selected groups or channels of the currently selected system from the Scan list.
0	Inverts display – Toggle normal/invert.
* PHN	Initiates telephone interconnect calls.
# IND	Initiates individual unit-to-unit calls.

7.3 DISPLAY

The radio display is made up of three lines (see Figure 7-4). Lines 1 and 2 contain eight alphanumeric character blocks and are used primarily to display system and group names. Line 1 also displays radio status messages. The 3rd line is used primarily to display radio status icons. All three lines are used to display menu options when in the menu mode. If programmed, the display backlighting will illuminate upon power-up or when radio controls are operated.

Figure 7-4: Sample Radio Display

7.4 RADIO STATUS ICONS

Status Icons indicate the various operating characteristics of the radio. The icons show operating modes and conditions and appear on the third line of the display (see Table 7-3).

Table 7-3: Status Icon Descriptions

ICON	DESCRIPTIONS
	***Steady*** – During all radio transmissions.
	***Steady*** – "Busy" transmitting or receiving. **Flashing** – Call is queued.
	***Steady*** – T99 Mode enabled.
	***Steady*** – Channel Guard enabled. If icon is not visible – Channel Guard is disabled.
	***Steady*** – Trunked system in Failsoft™ mode.
	***Steady*** – Transmit at low power. **If icon is not visible** – Transmit at high power.
	***Steady*** – Transmit in encrypt mode. **Flashing** – Receiving an encrypted call.
	***Steady*** – Indicates the current channel is set up as a Project 25 (P25) channel.
	***Steady*** – Indicates the current channel is set up as an analog channel.
	***Animated*** (*rotates clockwise)* – Scan mode enabled. **If icon is not visible** – Scan is disabled.
	***Steady*** – Group or channel in scan list.
	***Steady*** – Priority 2 group or channel.
	Steady – Priority 1 group or channel.
	***Steady*** – Special call mode (individual or telephone).
  	***Steady*** – Battery charge indicator*. **Flashing** – Low battery indicator. **Flashing** – Acquiring GPS satellites. **Steady** – GPS satellites have been acquired.

*The battery charge indicator illustrates approximate charge only, based on battery voltage.

7.5 TRI-COLOR LED

The Tri-Color LED changes color to indicate radio status and is visible from both the front and top of the radio (see Figure 7-1). The colors of the LED and the status they represent are defined below.

Green: Receiving

Red: Unencrypted transmission

Orange: Encrypted transmission

7.6 RADIO STATUS MESSAGES

During radio operation, various radio Status Messages can be displayed. The messages are described below:

MESSAGE	NAME	DESCRIPTION
QUEUED	Call Queued	Indicates the system has placed the call in a request queue.
SYS BUSY	System Busy	Indicates the system is busy, no channels are currently available, the queue is full, or an individual call is being attempted to a radio that is currently transmitting.
DENIED	Call Denied	Indicates the radio or talkgroup is not authorized to operate on the selected system and/or talkgroup.
CC SCAN	Control Channel Scan	Indicates the control channel is lost and the radio has entered the Control Channel Scan mode to search for the control channel (usually out of range indication).
WA SCAN	Wide Area Scan	Indicates the radio has entered the Wide Area Scan mode to search for a new system (if enabled through programming).
SYSC ON	System Scan Features On	Indicates the System Scan features are enabled.
SYSC OFF	System Scan Features Off	Indicates the System Scan features are disabled.
LOW BATT	Low Battery	Battery voltage has dropped to the point to where the radio is no longer able to transmit. The radio will still receive calls until the battery is discharged beyond the point of operation at which time the radio automatically shuts down.
RXEMER	Receive Emergency	Indicates an emergency call is being received. This message will be flashing on line two.
TXEMER	Transmit Emergency	Indicates an emergency call has been transmitted on this radio. This message will be flashing on line two.
VOL=31	Volume Level	Indicates the current volume level. The volume level display ranges from **OFF** (muted) to **40** (loudest).
WHC	Who Has Called	Indicates an individual call has been received, but not responded to. The indicator turns OFF if the individual call mode is entered, the system is changed, or the radio is turned off and then on again.
UNKNOWN	Unknown ID	Indicates an individual call is being received from an unknown ID.

7.7 ERROR MESSAGES

If either of the Error Messages shown below is displayed, the radio is programmed incorrectly or needs servicing.

DSP ERR **ERR=*XXXX*** (Power-up only)	or	**DIG V** **ERR**

Where ***XXXX*** is the error code and **DSP ERR** or **DIG V ERR** is the message.

7.8 ALERT TONES

The XG-15P radio provides audible Alert Tones or “beeps” to indicate the various operating conditions (see Table 7-4).

Table 7-4: Alert Tones

NAME	TONE	DESCRIPTION
Call Originate	one short mid-pitched	OK to talk after pressing the push-to-talk button
Call Queued	one high-pitched	Call queued for processing
Autokey	one mid-pitched	Queued call received channel assignment
System Busy	three low-pitched	System busy or unable to complete call
Call Denied	one low-pitched	Radio is not authorized on the system or group
Carrier Control Timer	five high-pitched/one long low-pitched	PTT depressed for maximum length of time
Low Battery	one low-pitched/one short mid-pitched	Low battery
TX Low Battery Alert	one low-pitched	After PTT - battery too low to transmit

7.9 VOICE ANNUNCIATION

When enabled via programming, the Voice Annunciation feature provides audible feedback for various radio operations. The radio can be programmed to play an audio message for any or all of the following. This message can be a pre-recorded (canned) message or a user-recorded message.

- Channel changes
- System changes
- Encryption On/Off
- Noise Cancellation On/Off
- Scan On/Off
- Talkaround On/Off

For more information on configuring the radio for Voice Annunciation, refer to the *Voice Annunciation Feature Manual*, 14221-7200-6110.

7.10 SYSTEM/ZONE SELECTION

METHOD 1: From the control knob: If system/zone selection is programmed to the Voice Group Selection control knob, select a system/zone by turning the knob to the desired system/zone number position (1-16). The display registers the new system name on line one. The 1 SYS button can be programmed to provide access to a "2nd bank" of 16 system number positions (17-32).

METHOD 2: From the keypad: If system/zone selection is programmed as the primary function of ▼ and ▲, select a system/zone by pressing ▼ or ▲ to scroll through the system/zone list. The display registers the new system/zone name on line one.

METHOD 3: Direct Access: Press 1 SYS to enter the system/zone select mode. Press the numeric key that is mapped to the desired system. Press M. The radio will move to the selected system/zone.


NOTE

If system selection is programmed to the Voice Group Selection control knob, direct access to systems/zones will not be available. Pressing ▼ or ▲ will scroll through different sets of 16 systems/zones each (banks) if more than 16 systems/zones are programmed into the radio. The systems within each bank are then selectable via the Voice Group Selection control knob as described previously in METHOD 1.

Example:

System:	1 = North	Group: 1 = Group 1
	2 = South	2 = Group 2
	3 = East	3 = Group 3
	4 = West	4 = Group 4

1. Press 1 SYS to enter system selection screen.
2. Press 4 PVT GHI to select "West" system.
3. Press M. West is the newly selected system.

7.11 GROUP/CHANNEL SELECTION

Several methods can be used to select a new group or channel.

METHOD 1: From the Control knob: If group selection is programmed to the Voice Group Selection control knob, select a group by turning the Voice Group Selection control knob to the desired group number position. The display registers the new group name on line two. If the knob is moved to a position greater than the number of programmed groups, the highest programmed group will remain selected. The O button can be programmed to provide access to a "2nd bank" of 16 group number positions (17-32).

METHOD 2: From keypad: If group selection is programmed as the primary function of ▼ and ▲ select a group by pressing ▼ or ▲ to scroll through the group list. The display registers the new group name on line two.

METHOD 3: Direct Access: Press [2 GRP ABC] to enter the group select mode. Press the numeric key mapped to the desired group. Press [M]. The radio will move to the selected group.

In the trunked mode, press PTT button and speak normally while holding the microphone approximately two inches from your mouth.

In the conventional mode, press the Monitor/Clear button briefly. If audio is heard or Y is illuminated, then the channel is busy. Wait till the channel become available and press the PTT button and speak normally while holding the microphone approximately two inches from your mouth.

7.12 MODIFY SCAN LIST

1. Press [3 SCN DEF] to toggle scan OFF and verify ▶ is **not** displayed.
2. Select group or channel.
3. Press [9 DEL WXYZ] once to remove group or channel from list.
4. Press [6 ADD MNO] once to add as a normal group or channel.
5. Press [6 ADD MNO] twice to add as a Priority 2 group.
6. Press [6 ADD MNO] three times to add as a Priority 1 group.
7. Press [3 SCN DEF] to re-start scanning.

7.13 MENU

The Menu function accesses features that are not available directly from the keypad. The order and actual menu items available is configurable through programming. Upon radio power-up, the menu item that is at the top of the menu list will always be displayed first. Subsequent access to the menu function will return the last menu item that was shown in the display and cursor position.

1. Press [M] to enter the menu.
2. Menu options will appear in the display (see Figure 7-5).

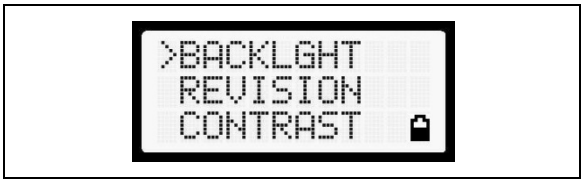

Figure 7-5: Menu Display

3. The radio will continue to receive and transmit normally while in the menu function.
4. To scroll through the menu options, use the [▼] or [▲] keys. When the required menu item has been found, align the cursor with the option and press [M] to select it. The menu item's parameter setting shown in the display can now be changed using [▼] or [▲] to scroll through the list of parameter values.
5. Once the desired setting is reached, press [M] to store the value and return to the menu option selection level.

For menu items that display radio information, pressing ▼ or ▲ will scroll through a list of informational displays. Possible menu items are listed in Table 7-5.

7.14 MENU ITEM SELECTION PROCESS

An example of the backlight menu item selection process and menu item parameter change is shown in Figure 7-6.

1. Press M to enter the menu.
2. Press ▼ or ▲ until the display shows:

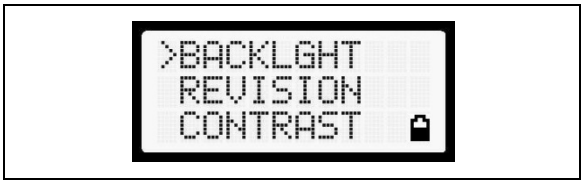

Figure 7-6: Backlight Menu Item Selection Parameter

3. Press M**.** The backlight menu item is activated. Line one shows the active menu item and its current parameter setting. Line two shows the currently selected system or group name (see Figure 7-7).

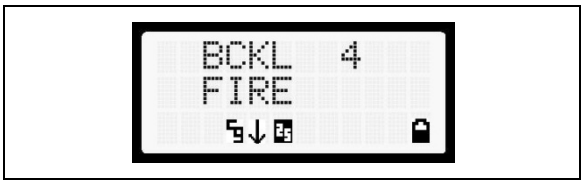

Figure 7-7: Backlight Menu Display

4. The menu item's parameter setting shown in the display can now be changed by using ▼ or ▲.
5. Once the desired setting is reached, press M to store the value and return the menu option selection level.

For menu items that display radio information, pressing ▼ or ▲ will scroll through a list of informational displays. An example of information displays is shown in Table 7-5.

NOTE

The TX POWER menu item, when selected, toggles LOW/HIGH power. It does not use ▼ or ▲ to scroll nor is an additional press of the M button required.

Table 7-5: Menu Item Information

FEATURE	DISPLAY	PARAMETER SETTING	COMMENT
Keypad Lock	KEY LOCK	Locked Unlocked	Locks the keypad. To unlock; press and release “M” then within 1 second press the option button. (This sequence is also a short cut to locking the keypad.)
Backlight Adjust	BACKLGHT	OFF, 1 through 6	Selects the light level for backlighting.
Contrast Adjust	CONTRAST	1, 2, 3, 4	Selects the display contrast level.

FEATURE	DISPLAY	PARAMETER SETTING	COMMENT
Transmit Power Select	TX POWER	HIGH or LOW	Selects radio output power mode.
Radio Revision Information	REVISION	N/A	Selects the information display to view. Informational display only. *No user selectable settings.*
Toggle Scan On/Off	SCAN	ON/OFF	Toggles Scan operation ON/OFF.
Toggle Encryption	PRIVATE	ON/OFF	Toggles Encryption ON/OFF.
Display Current Encryption Key	DISP KEY	N/A	Displays current encryption key. Informational display only. *No selectable settings.*
Home Group/Channel	HOME		Returns the radio to the home system/ channel on conventional systems and to the home group on trunked systems.
Select Desired System	SYS SEL	N/A	Selects a new system.
Add Group/Channel to Scan List	SCAN ADD	N/A	Adds to Scan List.
Delete Group/Channel	SCAN DEL	N/A	Deletes Group or Channel from Scan List.
Add/Delete Scan List	SCAN A/D	N/A	Add or Delete from Scan List.
Message	MSG		Permits the transmission of a preprogrammed message to a P25 site.
ProFile	PROFILE	ON/OFF	Toggles ProFile On/Off.
Talkaround	TALKARND	ON/OFF	Conventional Only. Toggles Talkaround feature ON/OFF.
Select Telephone Numbers From Phone List	PHONE	N/A	P25 trunked.
Select Individual Call from IC List	INDV	N/A	P25 modes.
Select Group	GRP	N/A	P25 modes.
Feature Encryption Display	FEATURES	N/A	Indicates current features programmed into the radio as well as certain information required to add features to the radio. *Informational display only. No user selectable settings.*
System Scan Enable	SYS SCAN	ON/OFF	Toggles System Scan feature ON/OFF.
Talk-around	TALK		Toggles Talk-Around ON/OFF.
Type 99 Enable	T99 EN	ON/OFF	Toggles Type 99 Decode ON/OFF.
Display GPS information	GPS	N/A	Displays GPS Status (On/Off), Latitude, Longitude, Speed/Direction, and time.
Select Mixed System/Zone	ZONE	N/A	Select a Mixed System Zone.
Display Caller ID	CALL ID	N/A	Displays the Radio IDs or alias names for the last 10 received calls.
Display GPS information	GPS	N/A	Displays GPS Status (On/Off), Latitude, Longitude, Speed/Direction, and time.
Select Mixed System/Zone	ZONE	N/A	Select a Mixed System Zone.
Display Caller ID	CALL ID	N/A	Displays the Radio IDs or alias names for the last 10 received calls.
View/Modify Custom Scan List	Menu Item: **CUSTSCAN**		Allows you to view and edit a Custom Scan list. See Section 7.26.1 for more information.

7.15 BACKLIGHT ON/OFF

1. Press [M] to access the menu.
2. Press [▼] or [▲] to scroll through menu until “BCKLGHT” appears.
3. Press [M] to select Backlight menu.
4. Press [▼] or [▲] to toggle backlight ON and OFF.
5. Press [M] to select new backlight setting.

7.16 CONTRAST ADJUST

1. Press [M] to access the menu.
2. Press [▼] or [▲] to scroll through menu until “CONTRAST” appears.
3. Press [M] to select Contrast menu.
4. Press [▼] or [▲] to adjust contrast setting from 1 - 4.
5. Press [M] to select new contrast setting.

7.17 DECLARING AN EMERGENCY

1. Press and hold the red Emergency/Home button (the length of time is programmable; check with the System Administrator).
2. ***TXEMER*** flashes in the display, and the and icons are visible. After 2-3 seconds the transmit icon turns off.
3. ***TXEMER*** and remain on until the emergency is cleared. See Section 7.23 for additional emergency operation.
4. Press the PTT. The icon reappears.
5. Release PTT when the transmission is complete.

7.18 LOCKING/UNLOCKING KEYPAD

1. Press [M] button.
2. Within 1 second, press the ○ button on the side of the radio.

7.19 HIGH/LOW POWER ADJUSTMENT

Transmit power adjustment is possible if enabled through programming. Within conventional systems, transmit power is adjustable on a per channel basis. Within a P25 trunked system, transmit power is adjustable on a per system basis.

There are two ways to toggle between high and low power, described in Sections 7.19.1 and 7.19.2.

7.19.1 Using the Menu Button

1. Press [M].
2. Using the [▼] or [▲] keys, scroll until the cursor (>) appears to the left of “TX POWER” in the display.
3. Press [M] again to toggle between High and Low power.
4. “POWER = HIGH” or “POWER = LOW” will appear momentarily on the top line of the display.

7.19.2 Using the Pre-Programmed Option Button

Press the ○ button. “POWER = HIGH” or “POWER = LOW” will appear momentarily on the top line of the display.

7.20 ENCRYPTION

The XG-15P portable radio supports DES encryption. When operating on a group or channel programmed for encryption, all transmissions are private and the radio receives clear and private signals. is displayed when the encryption is enabled. If the selected group or channel is programmed for auto-select capability, the mode may be toggled between encrypted and unencrypted by pressing the M key, and then selecting the **PRIVATE** menu option. Radios programmed for forced encryption do not allow a change of the transmit mode.

7.20.1 Displaying the Currently Used Cryptographic Key Number

To display the Currently Used Cryptographic Key Number for either the system encryption key (for special call such as individual, phone, all, agency or fleet) or the group/channel key (for group or conventional calls), perform the following procedure:

1. Press the M button.
2. Use the ▲ or ▼ button to select **DISP KEY**.
3. Use the ▲ or ▼ button to toggle between displaying the system key (Figure 7-8) or the group/channel key (Figure 7-9).

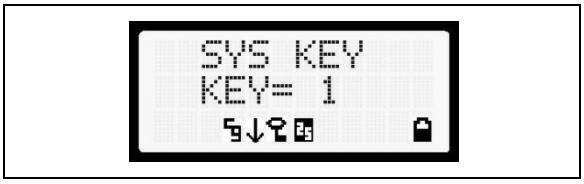

Figure 7-8: System Encryption Key Display

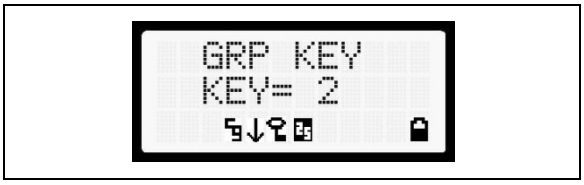

Figure 7-9: Group/Channel Encryption Key Display

7.20.2 Key Zero

All cryptographic keys can be zeroed (erased from radio memory) by pressing the ⊙ button and while still pressing this button, press and hold the OPTION button. Press both buttons for 2 seconds. A series of beeps will begin at the start of the 2 second period and then switch to a solid tone after the keys have been zeroed. The display will indicate **KEY ZERO**.

If the cryptographic key(s) are zeroed, one or more keys must be transferred from the Keyloader into the radio before private communications may continue.

7.20.3 Receiving an Encrypted Call

When receiving, the radio automatically switches between clear or private operation. If the transmission being received is an encrypted transmission, it will be decrypted, the icon will be displayed, the receiver will unsquelch, and the message will be heard in the speaker. For this to occur, the selected group or channel must be programmed for private operation and the correct cryptographic key must be loaded into the radio.

7.20.4 Transmitting an Encrypted Call

1. Select the desired group or channel.
2. Place the radio in Private Mode by pressing M key; then follow the selection mode rules. On a System radio, the 4 PVT GHI key can be used to toggle the Private Mode ON/OFF. When Private Mode is enabled, the icon is displayed.
3. If the last state of the radio was Private Mode, the Private Mode will be enabled on power-up. Also, the Private Mode will be enabled if forced operation has been programmed in the radio.
   - If a group or channel is not programmed for Private Mode operation, **PVT DIS** will be displayed if an attempt is made to enable private transmit mode. It is not possible to operate on this group/channel in Private Mode.
   - If the radio does not have the correct encryption key loaded, **NO KEY#** will be displayed and the call will not be transmitted.
4. Continue with standard transmission procedures. A Private Mode access tone will be heard when the PTT button is pressed.

7.20.5 Emergencies on Encrypted Group

The radio can be programmed to allow emergency calls to be transmitted in the clear when the radio does not have the key, or has an invalid key for the encrypted group in emergency.

7.21 SCAN OPERATION

Groups/channels that have been previously added to the scan list on a per system basis may be scanned. Each system's scan list is retained in memory when the radio is powered OFF or when the battery pack is removed.

7.21.1 Turning Scan On and Off

1. Toggle Scan operation ON by pressing 3 SCN DEF. ▶ icon rotates clockwise to indicate radio is scanning.
2. Toggle Scan operation OFF by again pressing 3 SCN DEF. ▶ will disappear.
   - If the radio scans to a group/channel other than the one selected and then receives a call on the selected group, the radio switches to the selected group/channel. However, if the “scanned-to” group/channel is programmed at a higher priority the radio remains on the “scanned-to” group/channel.
   - The radio continues scanning if a new group/channel is selected when scan is ON.
3. Pressing the PTT button when scan is ON will cause the radio to transmit on the displayed group/channel or to the currently selected group (depending on programming).

7.21.2 Add Groups and Channels to a Scan List

1. With scan operation turned OFF, select the desired group/channel to add to the selected scan list.
2. Press 6 ADD MNO. The current priority status of the group/channel will be displayed in column 10 of line three for a time-out period. If the group is not part of the scan list, the status will be blank.

3. While the status is displayed, press 6 ADD MNO to add the group/channel to the scan list. The III icon is displayed on line three.
4. Press 6 ADD MNO a second time to set the group to Priority 2. The II icon is displayed on line three.
5. Press 6 ADD MNO a third time to set the group/channel to Priority 1. The I icon is displayed on line three. The priority level selection sequence only advances the group/channel to next higher priority level and stops at priority level 1. To select a lower priority level, the group/channel must be deleted from the scan list and then added back to the scan list. Each new group/channel added to the scan list starts at the lowest priority. If the Priority 1 and Priority 2 group/channel are already set and a new group/channel is assigned as Priority 1 or Priority 2, the previously assigned group/channel will change to non-priority scanning. One of the following messages may be momentarily displayed.

SCAN DIS The radio is not programmed to scan.

FIXED P1 A Priority 1 group/channel has been pre-programmed into the radio. A new Priority 1 group cannot be selected.

FIXD LST A fixed scan list has been pre-programmed into the radio. It is not possible to change the list without reprogramming the radio.

NOTE

To quickly view multiple group scan status, press either 6 ADD MNO or the 9 DEL WXYZ key. Then slowly rotate the group knob. Each group/channel status will appear on the display.

7.21.3 Deleting Groups from a Scan List

1. With scan operation turned OFF, select the desired group/channel to delete from the selected scan list.
2. Press 9 DEL WXYZ. The current status of the group/channel is displayed for a time-out period.
3. While the status is displayed, press 9 DEL WXYZ to delete the group/channel from the scan list. III, II, or I turns OFF. Any group/channel that is not in a scan list will show a "***blank***" for the time out period when it is the selected group/channel.

7.21.4 Nuisance Delete

A group/channel can also be deleted from the scan list, if it is not the currently selected group/channel, by pressing the 9 DEL WXYZ key during scan operation while the radio is displaying the unwanted group/channel. The group/channel will be deleted from the scan list in the same manner as if done using the steps above. Deletions done in this manner will not remain deleted if the radio is powered OFF and then powered ON.

7.22 SYSTEM SCAN (P25 TRUNKED)

The radio can be programmed using Radio Personality Manager (RPM) with the following System Scan features. These features are automatically enabled when the radio is powered ON. A key or menu option is also defined to allow the System Scan features to be toggled during radio operation. The System Scan state will be maintained through system changes but will default to ON when the radio is powered ON.

Enable/Disable via Menu Selection

Press [M] and then use the [▼] or [▲] buttons to scroll through the selections until **SYS SCAN** is displayed. Then press [M] to toggle the System Scan state. The **SYSC ON** or **SYSC OFF** display message is displayed for two seconds to show the new state.

Enable/Disable via Pre-Programmed Keypad Key

Press the key pre-programmed to toggle System Scan and the **SYSC ON** or **SYSC OFF** display message is displayed for two seconds to show the new state.

7.22.1 Wide Area System Scanning

The XG-15P series radio can be pre-programmed through RPM for Wide Area System Scan operation for roaming across mobile systems. Radio systems manage the radios assigned to the system via a control channel (CC). Upon the loss of the currently selected system's control channel, radios can be programmed to automatically scan the control channels of other systems. If a new control channel is found, the radio will switch to the new system and sound an alert tone. The amount of time before the radio enters Control Channel Scan after losing the control channel is configurable.

7.22.2 Priority System Scan

The radio can also be pre-programmed for Priority System Scan. The priority system is the desired or preferred system. While receiving the control channel of the selected system, the radio will periodically leave the selected system and search for the control channel of the priority system. This is done at a pre-programmed rate defined by the value in the Priority Scan Time control, unless the ProScan™ algorithm is enabled, as explained in the following sections. This priority scan timer is reset each time the PTT button is pressed or when the call is received. If the priority system control channel is found, or meets the predefined criteria (ProScan), the radio will automatically switch to the priority system.

7.22.2.1 Enabling the Wide Area System Scan Function

If the radio cannot find the control channel of the selected system and begins to wide area system scan, the radio will only scan for the priority system control channel if the priority system is in the wide area scan list.

7.22.2.2 When ProScan is Enabled

The radio monitors the priority system and will switch to the priority system if the pre-programmed criteria ProScan options are met. If ProScan is enabled, the rate at which the radio will scan for the priority system is defined by the System Sample Time control, set in RPM, (refer to RPM On-Line Help). See Section 7.22.3 for more information on ProScan.

7.22.3 ProScan

The radio may be programmed for ProScan system scan operation for multi-site applications. ProScan is a multi-site system scanning algorithm. ProScan provides the radio with the ability to select a new system for the radio to communicate on when the selected system drops below a predefined level. This algorithm enables each radio to analyze the signal quality of its current control channel and compare it with the signal quality of the control channel for each site in its adjacent scan list. The signal quality metric used for the ProScan algorithm is based on a combination of both Received Signal Strength Indicator (RSSI) and Control Channel Verification (CCV) measurements. When the selected system degrades to a pre-programmed level, the radio will begin to look for a better control channel. Once a control channel that exceeds the pre-programmed parameters is found, the radio will change to the new system and emit a tone (if enabled through programming). If the control channel is completely lost, the radio will enter Wide Area System scanning and search the programmed adjacent systems until a suitable control channel is found.

7.23 EMERGENCY OPERATION

The radio's ability to declare an emergency, clear an emergency, remain locked on an emergency system and group, and the emergency audio and display freeze can each be enabled or disabled through programming. When an emergency is declared, scanning will stop and restarts only after the emergency has been cleared.

7.23.1 Receiving an Emergency Call

When receiving an Emergency Call on the selected group and system, an alert beep is heard and is displayed. The message ***RXEMER*** flashes in the display on line two until the emergency condition is cleared.

7.23.2 Declaring an Emergency Call

Perform the following steps to send an emergency call to a selected system and group (or on an optionally pre-programmed group).

1. Press and hold the red EMERGENCY button on top of the radio in front of the antenna for approximately one second (this time is programmable and therefore could be longer or shorter; check with the system administrator). The radio will transmit an emergency call request with the radio ID until an emergency channel assignment is received.
2. When the working channel assignment is received, the radio sounds a single beep indicating the radio has auto keyed (see Table 7-4) and is ready for voice transmission. ***TXEMER*** flashes on line two in the display until the emergency is cleared.
3. Press PTT and speak into the microphone in a normal voice. and momentarily turn ON.
4. Release PTT when the transmission is complete.

To clear the emergency, first press and hold the button. While continuing to hold the button, press the EMERGENCY button. (This will work if the radio is programmed to clear emergencies.)


NOTE

If a different button is programmed for the Monitor/Clear function, the declaring radio must use the One Button Emergency Clear functionality. You cannot clear another users emergency if this button is moved. One Button Emergency Clear must be enabled via RPM2 and allows the declaring radio to clear its emergency by pressing the emergency button.

7.24 MIXED SYSTEM ZONES

A Zone is a grouping of analog conventional channels, P25 conventional channels, and/or talkgroups. Mixed System Zones are defined in RPM and can be comprised of any combination of channels/groups from multiple systems. If a Mixed System Zone is not configured in RPM, it will not appear on the radio. Up to 50 Mixed System Zones can be defined.

To select a Mixed System Zone:

1. Press M.
2. Press ▼ or ▲ to select **ZONE** and press M.
3. Press ▼ or ▲ to select the desired Mixed System Zone and press M.

Alternately, the System/Group/Channel knob or a button on the radio can be programmed to scroll through available Mixed System Zones.

When scan is enabled on a system in a Mixed System Zone, the radio continues to display the zone name or system name per the current radio mode (system/zone). When toggling scan ON/OFF, there is no change one line 1 of the radio display. If it is showing system name, it continues to show system name; if it is showing zone name, it continues to show the zone name during scanning.

7.25 CALLER ID

This feature allows viewing of the caller ID or alias for up to the last 10 received calls. Received calls include Group, Announcement, Phone, Patch, SimulSelect, Agency, Fleet, and MDC.

1. Press M and press ▼ or ▲ to select **CALL ID.** Press M**.** Alternately, a button can be programmed to access the **CALL ID** list.
2. Press ▼ or ▲ to scroll through available entries. The most recent call is displayed at the top of the list. “NO ENTRY” is displayed if there are no entries.
3. Caller ID or “NO ENTRY” is displayed for 10 seconds. Press the Clear button to exit the Caller ID list.

The most recent call is displayed at the top of the list. The Caller ID list is cleared when power is cycled on the radio.

7.26 STEALTH MODE

Press the button programmed for Stealth Mode operation to toggle Stealth Mode on or off. During Stealth Mode, all buttons are disabled except PTT, the button programmed for Stealth operation, Emergency, and Nuisance delete. The radio will receive and transmit when Stealth Mode is enabled.

The radio can be configured to disable any or all of the following during Stealth Mode:

- LCD display
- LED
- Backlight
- Side/alert tones

Stealth Mode can be configured to persist through a power cycle.

7.26.1 Mixed Zone Scan

The Mixed Zone Scan (MZS) feature gives the user the capability to scan based on a custom scan list that is assigned at the system level. The Custom Scan (CS) list can contain System and Channel/Group configurations across P25 Trunk, P25 Conventional, and Analog Systems. When a Custom Scan List is defined on a P25T system, the radio can scan P25T, P25C and Analog systems. When defined on a P25C or Analog system, the radio only scans conventional channels. MZS also gives the user the capability to scan beyond the selected system group set.

- P25T Scan

  When a custom scan list is assigned to a P25T system, the user has the ability to scan P25T, P25C, and Analog groups/channels. All P25T systems must have the same WACN, System ID, and Unit ID to be added to the custom scan list.

- P25C and Analog Scan

  When a custom scan lists is assigned to a P25C or Analog System, the user has the ability to scan P25C and Analog channels. P25T systems are ignored.

7.26.1.1 Custom Scan List Selection

The Custom Scan List is assigned at the System level. Scanning protocols (Custom Scan, System Scan, and Conventional Priority Scan) are mutually exclusive. Once a custom scan list is assigned to a system, when you enable scan, you are scanning the channel/groups defined in the custom scan list. A Custom Scan List can be assigned to a system through RPM only.

7.26.1.2 View Custom Scan Lists

1. From the radio menu, select **CUSTSCAN**.
2. Select the desired group/channel from the Custom Scan list. Options available for each channel/group include:
   - View the channel's/group's scan priority.
   - Delete the channel/group from the scan list.
   - Nuisance delete the channel/group.


NOTE

Scan must be off to view a Custom Scan List.

7.26.1.3 Edit Custom Scan Lists

1. From the radio menu, select **CUSTSCAN**.
2. Select **EDIT LST**.
3. Select the desired system from the list.
4. Select the desired channel group. Scroll through available options:
   - Add the channel/group to the scan list.
   - Change the channel's/group's scan priority.
   - Delete the channel/group from the scan list.
   - Nuisance delete the channel/group.

NOTE

Scan must be off to edit a Custom Scan List.

7.27 INDIVIDUAL CALLS (P25 MODES)

7.27.1 Receiving and Responding to an Individual Call

When the radio receives an individual call (a call directed only to the user's radio), it un-mutes on the assigned working channel and displays . The first line on the display shows the logical ID number of the unit sending the message, or the associated name if the ID number is found in the individual call list. The radio can be programmed to ring when an individual call is received. If enabled, the ring begins five seconds after the caller un-keys and will continue until the PTT button, the button, or the individual call mode is entered.

NOTE

The volume of the ring is adjustable through the volume control levels.

If a response is made by pressing the PTT to the call prior to the programmed call-back time-out, the call will automatically be directed to the originating unit. If a response is not made before the call-back time-out, the radio will return to normal receive display, and ***WHC*** will appear on the first line of the LCD.

To respond after the call-back time-out, press the [#IND] key. The radio's display will show the callers ID on the first line and **WHCI=1** on the second line. Pressing the PTT button at this point will initiate an individual call back to the original caller.

The radio stores the IDs of the last 10 callers in the Calls Received List as shown. Individual calls are stored in the top half of the list (1-10) and Group calls are stored in the bottom half of the list (1-10). The most recent call is stored in position 1, the second most recent call is stored in position 2, etc.

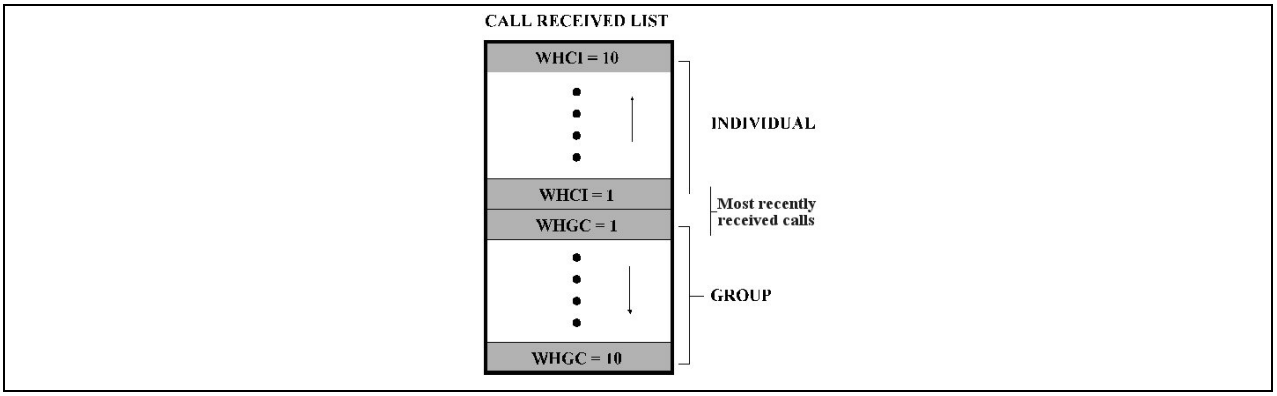

Figure 7-10: Calls Received Lists

To access the Calls Received List, press the [#IND] key twice. Use the [▼] or [▲] buttons to scroll through the list. Pressing the [M] key will display the time elapsed since the call was received. After pressing [#IND] the display will appear similar to Figure 7-11.

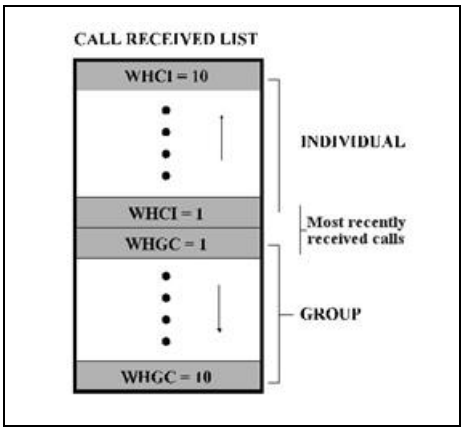

Figure 7-11: WHC Individual Call Display

Pressing the PTT will initiate an individual call to the displayed logical ID. Powering the radio OFF and ON will clear this list.

7.27.2 Sending an Individual Call

7.27.2.1 Pre-Stored Individual Calls

The following procedures describe how to initiate and complete a Pre-Stored Individual Call.

1. To select a pre-stored individual phone number, enter the individual call mode using the # key. is displayed. Then scroll through the list of stored numbers using the ▼ or ▲ keys.
2. Press the PTT button; when the radio is clear to transmit, turns ON, turns OFF and the channel access tone sounds. Line one shows the called individual's name if found in the list of stored individuals or ***LID*** followed by the logical ID number of the unit being called. The message ***INDV*** displays on line two.

7.27.2.2 Direct Dial Individual Calls

The following procedure describes how to initiate and complete a Direct Dial Individual Call:

1. The individual call ID is not stored in the pre-stored list of call IDs but the individual unit ID is known, it can be entered directly from the keypad.
2. Press and hold the PTT button to transmit. turns ON, turns OFF, and the channel access tone sounds. Line one shows the called individual's ID followed by the logical ID number of the unit being called. The message ***INDV*** displays on line two. Proceed talking into the microphone.

7.27.3 Call Storage Lists

There are two lists available for call storage in the XG-15P series radios, the calls received list (1 - 10) and the personality list (1 - 99 as defined by the user). When the individual call mode is entered by pressing #, the calls received list is available. The user can toggle to the personality list by selecting any index other than 0 or toggle between the two lists by pressing the # key. If wrap is enabled, the calls received list wraps on itself and not into the other list.

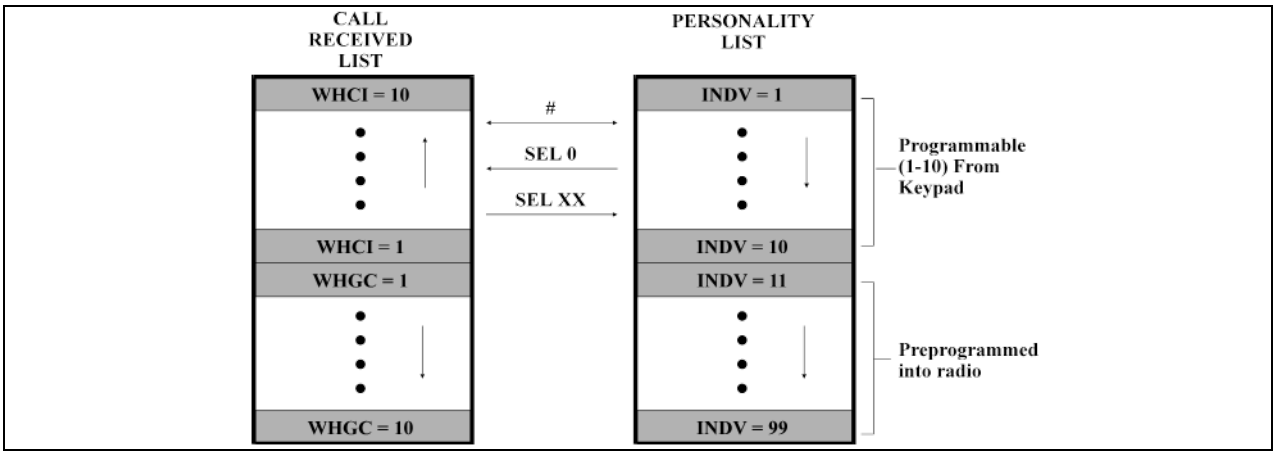

Figure 7-12: Calls Received and Personality Lists

The saved call list shows all ten storage locations. If no calls have been received, the saved call list will be empty and the pre-stored list will be available upon entering the individual call mode.

When in the saved call list, pressing the M key toggles the time stamp ON and OFF. The time stamp indicates how long ago the call was received. When in the pre-stored list pressing the M key toggles the ***L***ogical ***ID***entification (***LID***) ON and OFF.

7.28 TELEPHONE INTERCONNECT CALLS (P25 TRUNKED)

7.28.1 Receiving a Telephone Interconnect Call

When the radio receives a telephone interconnect call (a call directed only to the user's radio), it un-mutes on the assigned working channel and displays . The first line displays ***PHONE***. The second line displays ***INDV***. Proceed with the call. Press the PTT to talk, release the PTT to listen.

7.28.2 Sending a Telephone Interconnect Call

7.28.2.1 Pre-Stored Number

Use the following procedures to initiate and complete a Telephone Interconnect call:

1. To select a previously stored phone number, press the * PHN key. Use the ▼ or ▲ buttons to scroll through the list of stored numbers.
2. Press and release the PTT button. When the radio is clear to transmit, turns ON, turns OFF, and the channel access tone sounds. Line one shows the accompanying name selected from the list of stored numbers. The message ***PHONE*** appears on line two of the display. The radio then automatically transmits the programmed number stored in the special call queue.
3. A telephone ring will be heard from the speaker. When someone answers the phone, press the PTT button and speak into the microphone. Release the PTT button to listen to the callee. Unsuccessful interconnect signaling returns the radio to the normal receive mode and the number remains displayed until the special call is cleared or the time-out expires or another group or system is selected. Terminate a call by pressing the ⊙ button.

NOTE

In half-duplex mode, only one person may talk at a time. The radio PTT button needs to be pressed to communicate to the individual called and released for the individual called to be heard.

7.28.2.2 Direct Dialing of Phone Calls

1. If the phone number is not stored in the pre-stored list of phone numbers, but the phone number is known, it can be entered directly from the keypad. Start by pressing the PHN key, then enter the required number from the keypad. Press and release the PTT button.

NOTE

The last number directly entered can be recalled by first pressing PHN then pressing the PTT button.

2. A telephone ring can be heard from the speaker. When someone answers the phone, press and hold the PTT button and speak into the microphone. Release the PTT button to listen to the individual called. Unsuccessful interconnect signaling returns the radio to the normal receive mode and the number remains displayed until the special call is cleared or the time-out expires or another group or system is selected.
3. To terminate the call, momentarily press the ⊙ button.

7.28.3 Dual-Tone Multi-Frequency: Overdial

Once the radio has established a connection to the public telephone system, it may be necessary to “over-dial” more digits to access banking services, answering machines, credit card calls, or other types of systems that require Dual-Tone Multi-Frequency (DTMF) access digits.

Overdial operation can also be used to initiate a telephone interconnect call via DTMF signaling if a dial tone has already been accessed on the system. This method makes a telephone interconnect call while operating in the conventional mode but will also function in trunked mode if a dial tone is directly accessible.
Telephone numbers and other number sequences for overdialing can be stored in the phone list when programming the radio. These numbers are accessed by pressing the M key, then following the selection mode rules. Perform the following procedures to access and dial these stored numbers.

1. Follow the procedure in Section 7.28.2 to establish a connection to the telephone system or consult the system administrator for the procedure to access a dial tone on the trunked or conventional system.
2. Overdial numbers are transmitted using one of the following methods:

METHOD 1: Enter the overdial selection mode by pressing the PHN button.

Use the ▼ or ▲ buttons to scroll through the list of stored numbers. C is displayed. Press the PTT to send the overdial sequence once. If the number needs to be transmitted again it must be selected or entered again (this prevents unwanted numbers from being sent the next time the PTT button is pressed during the call).

Overdial select/entry mode remains active until the call is dropped, cleared, or M is pressed. The overdial select/entry mode can be re-entered if the call is still active by pressing M.

METHOD 2: Enter the overdial selection mode by pressing the [*PHN] button.

Press and hold the PTT button while entering the overdial number sequence from the keypad. This method sends DTMF tones during individual, telephone interconnect, trunked group, or conventional channel calls. Press the PTT to send the overdial sequence once. If the number needs to be transmitted again it must be selected or entered again (this prevents unwanted numbers from being sent the next time the PTT button is pressed during the call). ***Anytime the PTT button is pressed and held, the keypad is enabled for DTMF entry.***

Overdial select/entry mode remains active until the call is dropped, cleared, or [M] is pressed. The overdial select/entry mode can be re-entered if the call is still active by pressing [M].

This overdial select/entry mode remains active until dropped, cleared, or [M] is pressed. The overdial select/entry mode can be re-entered if the call is still active by pressing the [*PHN] button.

7.29 PRE-STORING INDIVIDUAL AND TELEPHONE INTERCONNECT CALLS FROM THE KEYPAD

Individual Call ID numbers, telephone numbers, and other number sequences for overdialing are stored in the special calls lists when programming the radio. The first ten entry locations of these lists can be changed by the radio operator. The keypad is used when adding, changing, and storing numbers in these entry locations.

Use the following procedure to store a number in one of the first ten entries of a special call list:

1. Press the [#IND] or [*PHN] button to enter the individual call list or the phone call list. [is displayed.
2. Scroll through the list using the [▼] or [▲] keys until one of the first ten entries is reached. **NO ENTRY** is displayed if the location is empty.
3. Enter the desired number. If necessary, a pause can be entered by pressing and holding 0-9, [#IND], or [*PHN] until an underscore appears in the display (telephone interconnect only). The individual call list entries will accept up to 5 digits. The phone call list entries accept a combination of up to 31 digits and pauses.
4. Press and hold the [M] key until the display changes indicating that the number has been stored.

Repeat steps 1-4 to store additional numbers, to change numbers already stored, or to change the storage location of a number.

7.30 STATUS/MESSAGE OPERATION (P25 MODES)

The **Status** and **Message** operations allow for the transmission of a ***pre-programmed status*** or a ***pre-programmed message*** to a P25T site. Each Status and Message is assigned an ID then cross-referenced with the representative status condition (“Off Duty,” for example) or a message (“Call home”). In addition, Status conditions can also be associated with a programmable Menu entry (required for second method of transmitting a Status condition (see Section 7.30.1).

7.30.1 Status Operation

One of two methods can be used to transmit a status condition.

METHOD 1: Press the M key, then use the ▼ or ▲ buttons to scroll to the pre-programmed status condition. STATUS and 0 through 9 pre-programmed status selections are available from the menu.

If STATUS is selected, you need to enter the number of the status condition you intend to transmit. If no status has been programmed for the selected number key, the radio will display **NO ENTRY**. A valid selection will display the status for a pre-programmed time.

After the time-out expires or the M key has been pressed (the M key will override the time-out period), the status is selected and will be transmitted to the site or stored in the radio memory where it can be polled by the site at a future time.

METHOD 2: Press the 7 STS PQRS key.

Press the corresponding pre-programmed 0 through 9 status condition key. If no status has been programmed for the selected number key, the radio will display **NO ENTRY**. A valid selection will permit the status condition to appear in the top line of the display and the status ID to appear in the second line of the display for a pre-programmed time.

After the time-out expires or the M key has been pressed (the M key will override the time-out period), the status is selected and will be transmitted to the site or stored in the radio memory where it can be polled by the site at a future time.

View the currently selected status after it has been transmitted by pressing the M key and then the M key and then the ⊙ button prior to the time-out period. If the status was not sent successfully to the site, the text associated with the status condition will flash in the display.

The status selection can be changed by pressing a different status key 0 through 9, or the status operation can be cancelled by pressing Clear/Monitor button (⊙). Both operations must be carried out prior to the time-out period.

7.30.2 Message Operation

The following method can be used to transmit a Message using the Message Operation.

Press the 8 MSG TUV key.

Press the corresponding pre-programmed 0 through 9 pre-programmed “message” key. If no message has been programmed for the selected number key, the radio will display **NO ENTRY**. A valid selection will permit the message to appear in the top line of the display and the message ID to appear in the second line of the display for a pre-programmed time.

The message selection can be changed by pressing a different message key 0 through 9, or the message operation can be cancelled by pressing Clear/Monitor button (⊙). Both operations must be carried out prior to the pre-programmed time-out period.

7.31 MACRO KEY OPERATION

Macro key operation permits the user to accomplish a series of keystrokes with a single "macro" keystroke. Each macro key is capable of executing up to twenty (20) keystrokes, to any push button input (i.e., keypad keys, OPTION buttons, etc.). Each macro key can be pre-programmed to activate when pressed or when released.

A macro key may also be pre-programmed to change the key stroke sequence the next time the macro key is activated.

For detailed operation and assignment of macro keys, contact your communications supervisor or administrator.

7.32 TYPE 99 OPERATION (ANALOG CONVENTIONAL)

Type 99 is a conventional in-band, two-tone sequential signaling method. This conventional signaling protocol controls the muting and unmuting of a radio. Type 99 encoded base stations, mobiles, or portables can selectively call individual units or groups of units in a conventional system. Type 99 is used in paging operations providing a dispatcher with the ability to selectively call a radio or a group of radios. If Type 99 is enabled in the radio personality, the radio can decode Individual, Group, and Supergroup Type 99 calls.

In a selective signaling environment, the XG-15P portable radios operate in one of two states, Monitor mode or Selective Call mode.

- In Monitor mode, Type 99 “OFF,” the decoder is disabled and all calls are heard by the user.
- In Selective Call mode, Type 99 “ON,” the decoder is enabled and only calls intended for the user will be heard.

7.32.1 Type 99 with or without Channel Guard

Selective signaling operates with or without Channel Guard. If Channel Guard is enabled, the radio can be programmed with an "And" or an "Or" option, determined by programming with T99 Mute Control.

- If the "And" option is programmed, T99 calls require the correct selective signaling (T99 tone sequence) **AND** the correct Channel Guard tones are heard by the user.
- If the "Or" option is programmed, calls with the correct Channel Guard tones **OR** calls with the correct T99 tone sequence and Channel Guard tones are heard by the user.

A radio operating in Selective Call mode that receives a selective call switches to the Monitor mode (after decoding the T99 call) and the **TX/RX LED** flashes green. The **TX/RX LED** indicates whether the channel has a carrier signal.

7.32.2 Resetting Type 99 after a Call

After decoding a Type 99 call, the radio operates in Monitor mode and all traffic on the channel is audible. If the channel has Channel Guard, only the traffic with the radio's Channel Guard tone will be heard. To reset Type 99 operation, use one of the following methods:

- Press the ⊙ button.
- Press the O button, if enabled through programming to toggle Type 99 ON/OFF.
- Allow the "Auto-Reset" timer, if enabled through programming, to reset the Type 99 decoder.

7.32.3 Type 99 Disable after PTT

The radio may be programmed with the Type 99 Disable after PTT feature, which automatically disables the Type 99 decoder after a transmission. Use one of the methods outlined in Section 7.32.2 section to reset Type 99 operation.

7.33 AUDIO PLAYBACK

Every call received by the radio is recorded in internal memory, overwriting the last recorded call. When the PLAYBACK key is pressed, the last recording is replayed and any future recordings are stopped. Pressing PLAYBACK again repeats the same recorded call. Pressing and holding the PLAYBACK key until the tone sounds erases the recording and starts the recording of incoming calls again. If a call is received while the recorded call is playing, the recorded call continues to play, rather than the received audio. However, if a call is received and the recorded call is played back in close succession received audio could mute call playback. This feature requires RPM R8A and later, and ECP R15A and later.


NOTE

The PLAYBACK function must be programmed to a button on the radio via RPM.

7.34 RADIO TEXTLINK OPERATION

Radio TextLink provides a simple means of exchanging pre-defined, or “canned,” text messages. This section describes how to send messages if the Radio TextLink feature is enabled.

7.34.1 Send TextLink Messages

1. Press M to access the menu.
2. Press ▼ or ▲ to scroll through menu until **SND MAIL** is displayed. Press M to select.
3. Press ▼ or ▲ to scroll through the pre-defined messages that scroll across the top of the display.
4. Press M to select to select the desired message.
5. Press ▼ or ▲ to scroll through the list of available destination IDs and select the desired ID with M.

7.34.2 View Received TextLink Messages

Received Messages are listed in the order in which they are received (newest at the top). All messages include the user LID along with the date and time stored/displayed. The mailbox can hold 16 messages at a time. If a new Message arrives after the limit is reached, the new message overwrites the oldest message.

1. Press M to access the menu.
2. Press ▼ or ▲ to scroll through menu until **RD MAIL** is displayed. Press M to select.
3. Scroll through the list of received messages using the ▼ or ▲ key.
4. Selecting a received message with the M key will bring up a reply to sender option.

7.34.3 Delete TextLink Messages

Select **DEL MAIL** with the M key to delete ALL messages in the inbox.

7.34.4 View the Current Time

Select **TIME** with the M key to retrieve the current date and time.

7.35 VIEW GPS INFORMATION

If GPS is enabled in RPM and the GPS Speaker microphone or GPS dongle is connected to the XG-15P, view your position and satellite information via the GPS Menu. GPS requires an unobstructed view of the sky and the signal is greatly diminished inside buildings, tunnels, heavily forested areas, etc. GPS may not work at all under some conditions, especially in metal enclosures or buildings. Ψ flashes on the radio display when the GPS signal is being acquired; stops flashing after signal is acquired.

1. Press M to access the menu.
2. Press ▼ or ▲ to scroll through menu until **GPS** is displayed and press M to select.
3. Press ▼ or ▲ to scroll through available information screens.

7.36 USING THE GPS SPEAKER MIC

1. Ensure that the GPS Feature Encryption bit is enabled.
2. In RPM:
   a. Check **Data Options → GPS Enabled**.
   b. Add “GPS” into the radio menu (from RPM, select **Options → Programmable Menus**, and select **GPS** from the drop-down).
3. Go outside of a building. Turn the radio on. There is a flashing trident icon in the upper right hand corner of the display. This indicates that the GPS speaker/mic has not yet acquired synchronization with the satellites.
4. When the trident goes solid, the GPS speaker mic has acquired the satellites.
5. Press the M button.
6. Scroll down to GPS. The display changes to GPS ON. If it is OFF, then toggle it ON.
7. Scroll down. SPD is for speed and DIR is for direction.
8. Scroll down again.
   - LON is for longitude in degrees, minutes, seconds.
   - LAT is for latitude in degrees, minutes, seconds.
9. Scroll down again. UTC is for Coordinated Universal Time.

7.37 CONTROL AND STATUS SERVICES

The XG-15P supports Control and Status services. These services allow the computer application to monitor and control a radio. The Control and Status Services can be used from a locally-connected Mobile Data Terminal (MDT) or a network MDT. In some cases, the radio can support both MDTs simultaneously. However, priority is given to the local MDT.

The Radio Status Service allows an MDT or Fixed End System (FES) to receive real-time status updates from a radio. An MDT sends Host Attach/Detach messages to the radio as UDP datagrams destined for the UDP Service Address and Service UDP Port of the radio. All responses and asynchronous reports are returned to the address and port of the requesting host. Refer to the *ECP Control and Status Services Feature Manual*, 14221-7200-6040, for more information on this feature.

8. CUSTOMER SERVICE

8.1 CUSTOMER CARE

If any part of the system equipment is damaged on arrival, contact the shipper to conduct an inspection and prepare a damage report. Save the shipping container and all packing materials until the inspection and the damage report are completed. In addition, contact the Customer Care center to make arrangements for replacement equipment. Do not return any part of the shipment until you receive detailed instructions from an L3Harris representative.

Contact the Customer Care center at https://www.harris.com/solution/pspc-customer-service or:

North America:

Phone Number: 1-800-368-3277

Fax Number: 1-321-409-4393

E-mail: PSPC_CustomerFocus@l3harris.com

International:

Phone Number: 1-434-455-6403

Fax Number: 1-321-409-4394

E-mail: PSPC_InternationalCustomerFocus@l3harris.com

8.2 TECHNICAL ASSISTANCE

The Technical Assistance Center's (TAC) resources are available to help with overall system operation, maintenance, upgrades and product support. TAC is the 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 at:

North America: 1-800-528-7711

International: 1-434-385-2400

Fax: 1-434-455-6712

E-mail: PSPC_tac@l3harris.com

9. BASIC TROUBLESHOOTING

Use the contents of Table 9-1 as a troubleshooting guide if the radio is not functioning properly. If additional assistance is required, contact a qualified service technician or call TAC support at 1-800-528-7711.

Table 9-1: Troubleshooting

SYMPTOM	POSSIBLE CAUSE	POSSIBLE SOLUTION
Radio will not turn on.	Low battery charge.	Change the battery pack to a fully charged pack.
No Audio.	Speaker volume is muted.	Increase the volume level.
Poor Audio.	User is in a poor coverage area or not on the network.	Move to a better coverage area.
Radio powers off for no apparent reason.	Radio may be experiencing very low voltage.	Have the battery checked by an authorized technician.
Radio will not transmit.	Radio may be out of coverage area or may be overheated.	Return to coverage area if possible. If overheated, let radio cool before retrying transmission. Report this failure to an authorized technician.

10. WARRANTY

Please register this product within 10 days of purchase. Registration validates the warranty coverage, and enables L3Harris to contact you in case of any safety notifications issued for this product.

Registration can be made on-line at the Customer Care center webpage:

https://www.harris.com/solution/pspc-customer-service

While on the webpage, please review the applicable battery and/or product warranty literature.

APPENDIX A CONFIGURING ENCRYPTION

A.1 ENCYRPTION KEYS

Refer to the following documentation for advanced programming and setup instructions:

- *Network Key Manager Installation and Configuration Manual* - MM-008070-001
- *L3Harris UAS Key Management Application Manual* - MM-008068-001
- *L3Harris Key Manager Key Admin Overview and Operation Manual* - MM1000019423
- *L3Harris Key Manager Key Loader Overview and Operation Manual* - MM1000019424
- *Motorola® Key Variable Loader (KVL) Device User's Guide*

A.1.1 Create Keys Using L3Harris Key Admin

L3Harris Key Admin is part of the L3Harris Key Manager and is used by the Crypto Officer (CO). The CO creates a Master Set of keys from which a Distribution Set is produced. Using the Key Admin software, the CO can save keys into Distribution key files for technicians to use in radios.

1. Select **Start → Programs → Harris Key Manager → Harris Key Admin**.
2. Select **New Master Set, Open**, or **Import from Security Device**. Refer to the Key Admin online help for more information on creating keys.
3. When finished, create a Distribution Key File. A Distribution Key File is used with the Key Loader to load key sets into the radio and cannot be edited. Refer to the Key Admin online help for more information on creating the Distribution Key File.

A.1.2 Load Encryption Keys

Load Keys Using L3Harris Key Loader

L3Harris Key Loader is part of L3Harris Key Manager and can be used by the Crypto Officer or Technician to load the keys into the radio.

Refer to the L3Harris Key Loader online help if additional information is required when performing this procedure.

1. Connect the radio to the PC using a serial cable.
2. Power on the radio, if not already.
3. Select **Start → Programs → Harris Key Manager → Harris Key Loader**.
4. At the Key Loader Welcome screen, click **Next**.
5. Select **Load a Distribution Set into one or more devices**.
6. Click **Next.**
7. Browse to the Key File and enter the password.
8. Click **Next** to validate the password and continue. If the password is incorrect, the screen will display an error message.
9. Select communication port from the drop-down and click **Next**.
10. Select the serial port that you have connected to the radio.

11. Enter into L3Harris Keyload Mode (HKL).
    a. Press the radio's **MENU** button.
    b. Scroll through the menu to select the **KEYLOAD** option and press the M button to activate.
    c. Scroll through and select the **HKL** option and press the M button. The radio can now accept keys from the L3Harris Keyloader.
12. Select **Radio** from the drop-down and click **Load**.
13. Click **Finish**.

Load Keys Using Motorola KVL Device

1. Connect KVL Device to the radio using cable 14002-0143-01.

NOTE

Once the KVL Device is connected, a keyset is established whether the keys are loaded or not. You will need to zeroize to bring the radio to a fully zeroized state.

2. Press the radio's M button.
3. Scroll through the menu to select the **KEYLOAD** option and press the M button to activate.
4. Scroll through and select the **KVL** option and press the M button. The radio can now accept keys from the KVL Device.

Type 3 Digital Encryption Standard Output Feedback (DES-OFB) is supported. The Type 3 Encryption keys are loaded via a Motorola Device using Telecommunications Industry Association (TIA)/Project 25 (P25) key fill device protocol. Make sure that valid keys have been created and stored in the KVL Device before proceeding.

A.1.3 Protected Keys

The Protected Keys feature transfers P25 Voice Keys, from L3Harris Key Loader to the radio, that have been encrypted with Key Protection Keys (KPKs). KPKs are nothing more than unprotected Key Encryption Keys (KEKs). The KPKs need to be loaded into the radio before the Protected Keys are loaded. Once loaded into the radio, the KPKs will be used to decrypt the Protected Keys.

The radio must be placed into the key loading mode to accept the KPKs and P25 Voice Keys.

NOTES

About L3Harris Technologies

L3Harris Technologies is an agile global aerospace and defense technology innovator, delivering end-to-end solutions that meet customers' mission-critical needs. The company provides advanced defense and commercial technologies across air, land, sea, space and cyber domains.