MOTOROLA

Professional Radio

GP300 Series

Selling Guide

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Chapter 1

PRODUCT OVERVIEW

1.0 Introduction

This Selling Guide is intended to be a reference manual to help you sell and support the GP300 Series Professional Portable Radios.

This Selling Guide will allow you to answer the following questions:

- ❏ What product ranges are in the GP Series of Professional Radios ?
- ❏ What products are in the GP300 Series ?
- ❏ Who can benefit from the GP300 Series ?
- ❏ What are the product features ?
- ❏ How do these features benefit my business ?

This Selling Guide complements the GP300 Series sales training and should be used in conjunction with a radio on a live system. This hands on experience will provide you with valuable knowledge which will help you explain the benefits of the GP300 Series to your customers.

1.1 How to use this Selling Guide

The Selling Guide is divided into three chapters -

Chapter 1 - This chapter is a general Product Overview of the New GP Series of Professional Radios with a more detailed description of the GP300 Series. The chapter provides model numbers and a list of accessories.

Chapter 2 - This chapter describes the Features and Benefits of the product and develops some ideas on how these features can be of benefit to your customers. The chapter explains the full flexibility of the radio whilst showing you how simple and easy it is to use.

Chapter 3 - This chapter describes some of the Accessories available and gives some criteria for their selection.

2.0 The GP Series of Professional Radios

Following the completion of extensive research with you our channel partners and your customers, Motorola have developed the GP Series of Professional Portable Radios.

These new radios have been specially developed to meet the communication needs of you and your customers.

The GP Series consists of three different product ranges :

GP300 Series
A practical, popular and versatile conventional portable product range which offers PL and 5 Tone Selective signalling.

GP600 Series
A popular and versatile trunking portable product range which offers MPT1327 signalling.

GP1200 Series
A sophisticated trunked portable product range offering MPT1327 trunking signalling.

For further information on GP600 and GP1200 Series radios, please refer to the relevant Product Manuals which are listed in your Price Pages.

2.1 A Common Design Approach

All the radios in the GP Series share a common design, the latest RF and semiconductor technology has been used to produce wideband and fully synthesised radios that offer :

- ❑ High quality audio allowing effective and efficient communication.
- ❑ A small and light weight form factor with all the benefits of the reknowned Motorola build quality.
- ❑ Wide area coverage providing successful communication over a larger range.
- ❑ Extended battery life from a range of new and improved batteries.

All the radios share a common appearance, common accessories and similar user interfaces.

- ❑ Common accessories means all GP Series accessories will work with all GP Series radios - a considerable benefit for you and your customers.
- ❑ A common user interface means, wherever possible, the radios work the same way. This should mean that it will be easier for you and your customers to learn how to use the radios.

2.2 Radio Software Upgrades

Motorola realise that as communication requirements for you and your customers evolve, it is necessary to be able to offer a communication solution to meet these changing requirements which does not force you or your customers to replace existing radios.

Radio software upgrade tools will be available to allow new functionality to be added quickly and easily to most GP Series radios.

Benefits

- ❏ You, our channel partners, can upgrade your stock quickly and efficiently.
- ❏ End users can benefit from new functionality without the cost and inconvenience of buying new radios.
- ❏ This will provide you with the ability to offer a changing range of radio benefits to respond the evolving needs of your customers.

2.3 Factory Mutual Approval (FM)

Factory Mutual (FM) radios have been approved by the Factory Mutual Research Corporation. All of the GP Series of Professional radios are FM approved.

For details of the approval classifications, safety information and approved batteries, antennas and audio accessories, please refer to the FM Supplement 68P64111B04_.

2.4 Quality Assurance

2.4.1 Accelerated Life Testing

Each model in the GP Series has passed the Motorola Accelerated Life Test (ALT). This testing simulates 5 years hard use in the field and all Motorola radios pass this rigorous test.

2.4.2 Environmental Protection

All GP Series radios have been designed and tested by Motorola to meet the European standard specification IP54 and US Military specifications 810 C, D and E.

2.4.3 IP54

This standard demonstrates the radio's ability to withstand driving rain and dust directed at the radio from all directions.

2.4.4 Military Standards 810 C, D and E

These Military standards ensure efficient radio operation in rough environments. All radios meet the following specifications :

❏ Low pressure	❏ High temperature	❏ Rain	❏ Humidity
❏ Salt fog	❏ Dust	❏ Vibration	❏ Shock

3.0 The GP300 Series Professional Portable Radios

Figure 1-1 GP300 Series Professional Portable Radios.

The GP300 Series is a range of conventional Professional Portable Radios providing PL and 5 Tone selective signalling. Research showed that different professions have different communication needs.

To help you provide different communication solutions for your customers, each radio offers a distinct choice of features which you can easily customize using programming software and a suitable personal computer.

The radios in the GP300 Series can be configured to provide on-site or local area coverage.

3.1 GP320 Portable Radio

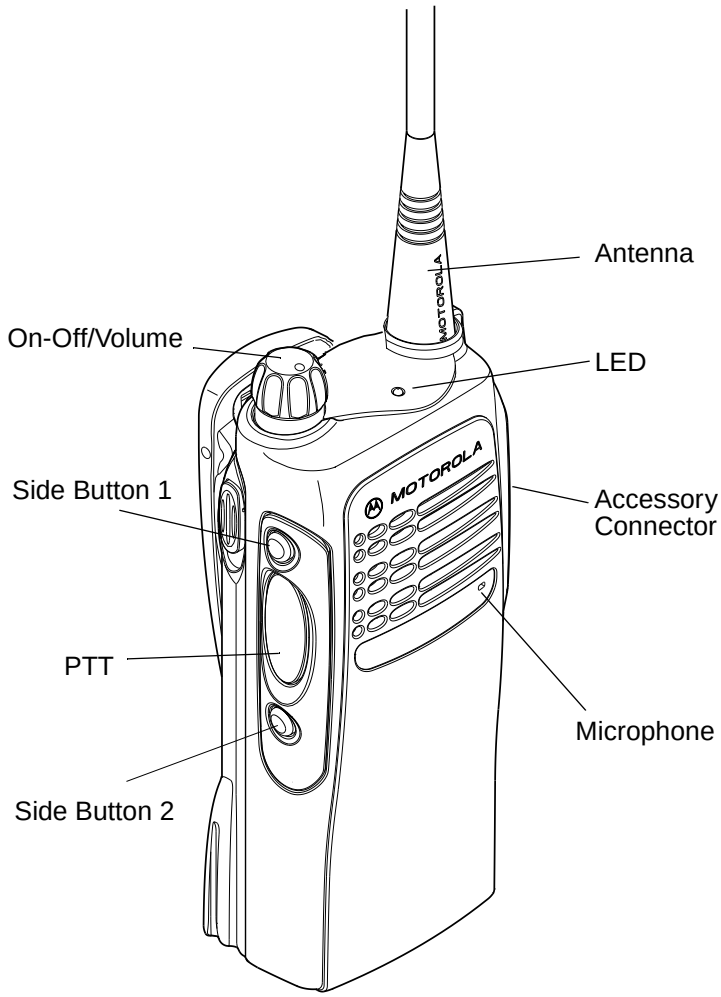


Figure 1-2 GP320 Radio Features.

This entry level, 2 way radio is easy to use, offering basic functionality with uncompromised reliability and ruggedness.

Who is the target audience for this radio ?

The GP320 is the low cost communication solution for professionals where budget is paramount, straight forward operation is required and only one communication channel is needed.

3.2 GP340 Portable Radio

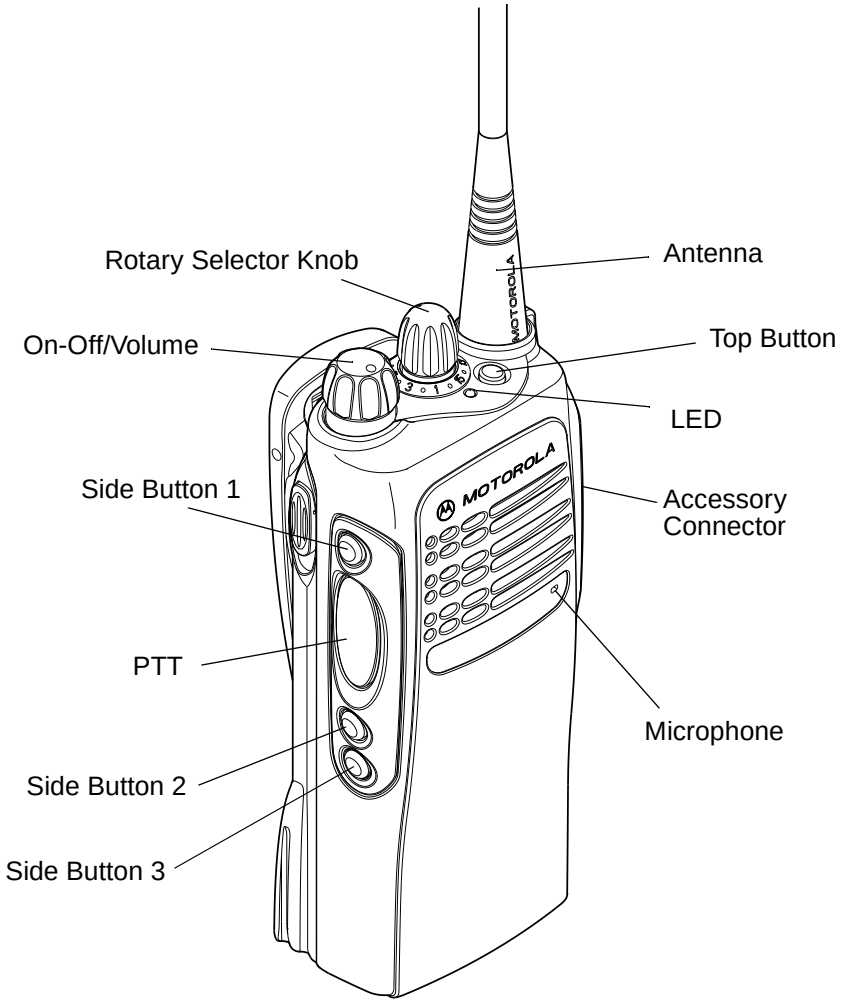


Figure 1-3 GP340 Radio Features.

This radio is more sophisticated than the GP320 radio. It offers additional features and has the capability to be fitted with option boards that allows additional functionality to be added quickly and easily.

Who is the target audience for this radio ?

The GP340 is the affordable communication solution for professionals who may require a simple, yet flexible, radio and need up to sixteen different communication channels.

3.3 GP360 Portable Radio

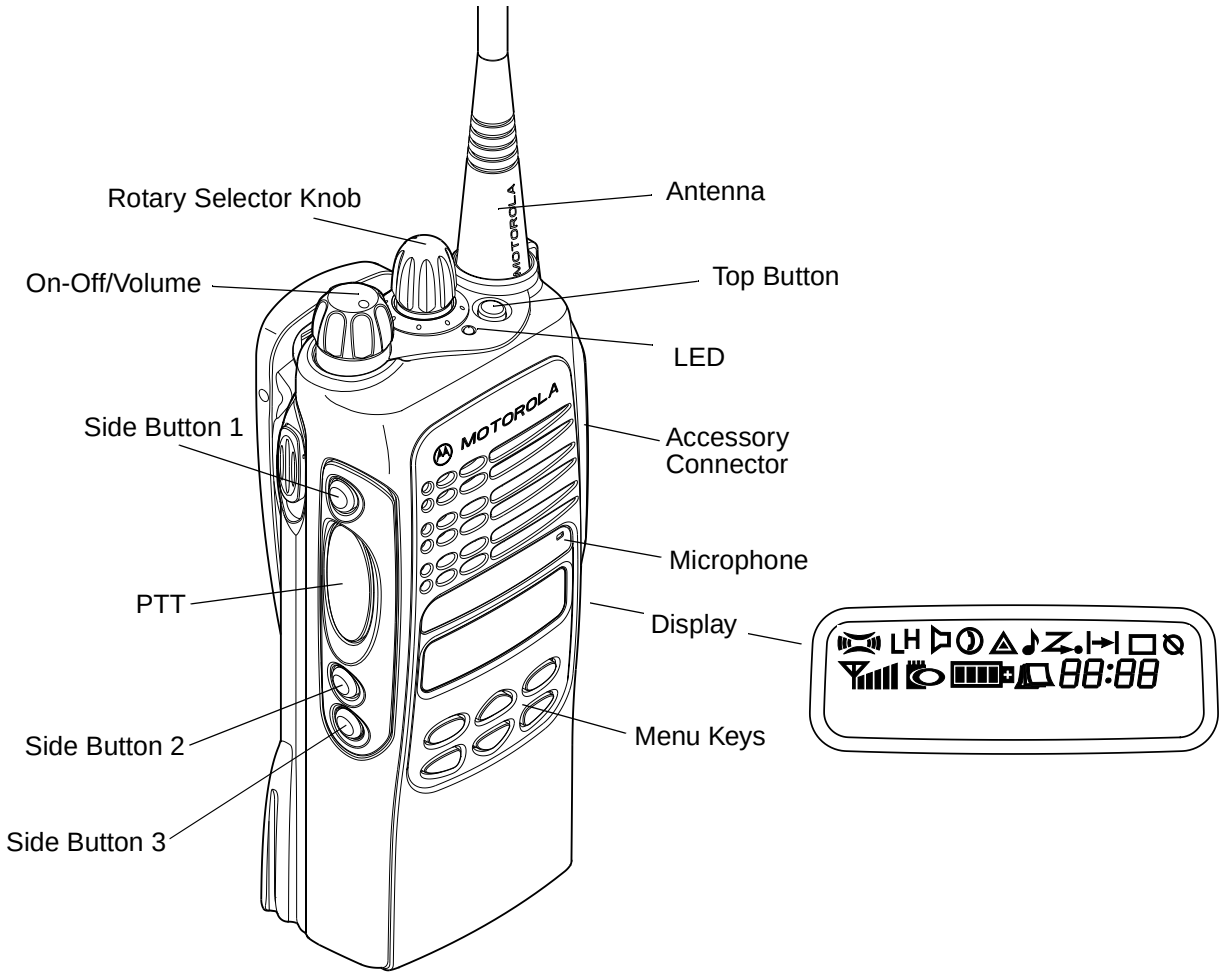


Figure 1-4 GP360 Radio Features

As well as offering all the advantages of the GP340, this versatile radio provides the user with extra visual information which promotes effective and efficient communication.

Who is the target audience for this radio ?

The GP360 is the ideal communication solution for professionals who require an informative versatile radio, which offers an increased choice of communications methods all of which are easily accessible and simple to use.

Ideal for those professionals who work in large teams and need up to 255 different communication channels.

3.4 GP380 Portable Radio

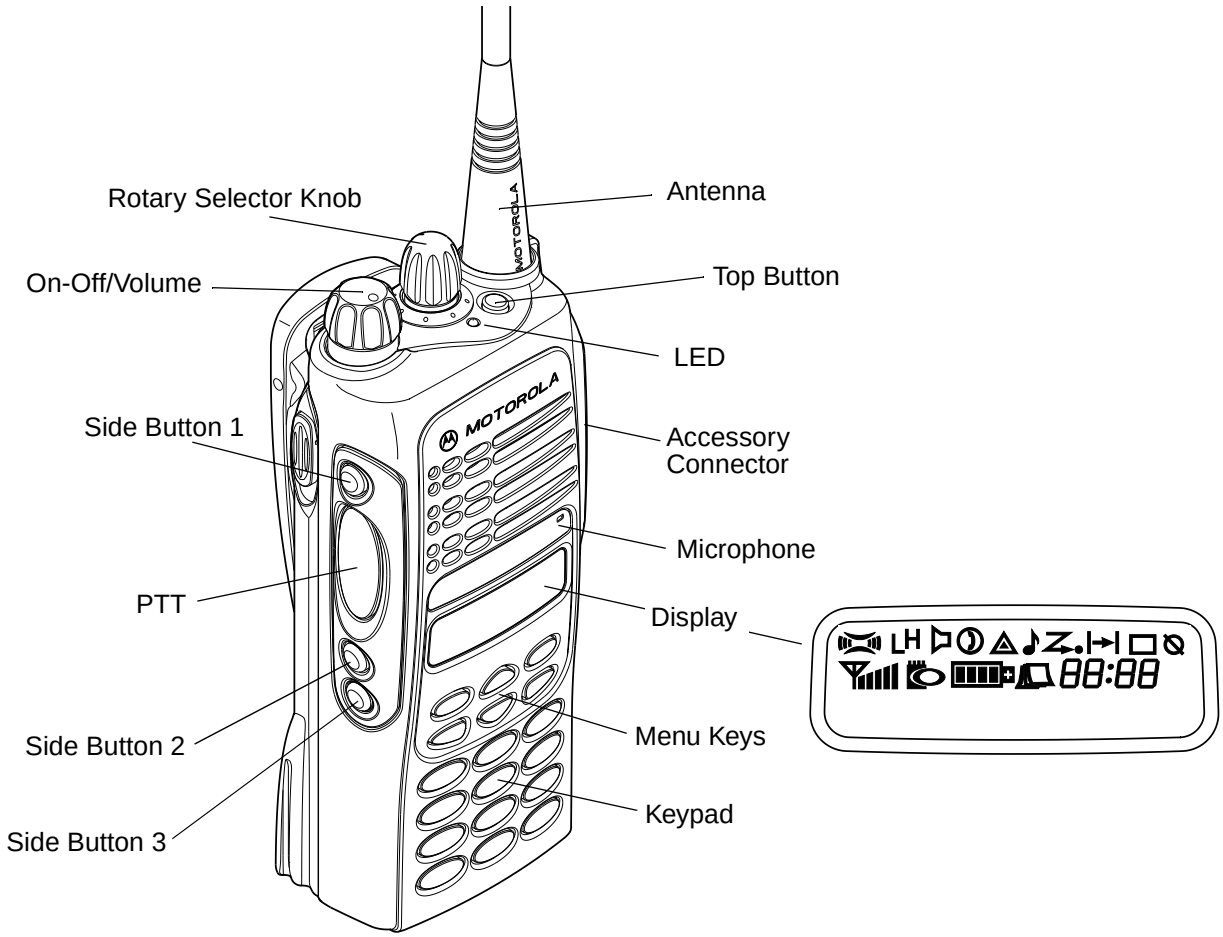


Figure 1-5 GP380 Radio Features

As well as offering all the advantages of the GP360, this truly versatile radio provides the user with a keypad which allows communication with colleagues other than those which are programmed inside the radio.

Who is the target audience for this radio ?

The GP380 is the ideal management communication solution, which with its increased utility further improves efficient and effective operation.

Like the GP360, this radio is ideal for those professionals who work in large teams and need up to 255 different communication channels.

3.5 Radio Comparison

The GP300 Series of Professional Portable Radios share a common design, the differences are summarised below :

Table 1-1 GP300 Series Professional Portable Radios Comparison.

	GP320	GP340	GP360	GP380
On-off / volume control	√	√	√	√
Channel control		√	√	√
Top orange button		√	√	√
Red, yellow, green LEDs	√	√	√	√
Side buttons	2	3	3	3
Push To Talk (PTT)	√	√	√	√
5 Tone signalling	√	√	√	√
Weight (without battery)	225g	225g	233g	233g
Option boards		√	√	√
Radio Upgrades		√	√	√
14 Character alphanumeric display			√	√
Menu keys			√	√
Keypad with 0 - 9, * and #				√

3.6 Reasons To Trade Up

GP380

All the advantages of the GP360 plus:

- ❑ Increased number of possible communication contacts using numeric keypad as well as pre-programmed call lists.

GP360

All the advantages of the GP340 plus:

- ❑ Helpful visual operational information - includes Battery Gauge, Current Power setting, Contact Names and Status Text messages.
- ❑ Translated Menu Prompts.
- ❑ Additional feature capability accessible via easy to use dealer configurable menus including pre-programmed call lists.
- ❑ 255 Communication channels.

GP340

All the advantages of the GP320 plus:

- ❑ Radio can be upgraded
- ❑ Option board capability
- ❑ Special emergency button
- ❑ Additional feature capabililty
- ❑ Additional programmable buttons - more features at your fingertips
- ❑ 16 communication channels

GP320

- ❑ Entry level Professional Radio
- ❑ Build quality and environmental specifications
- ❑ Simple talk and listen operation with benefits of 5 Tone Selective signalling
- ❑ 1 communication channel
- ❑ Factory Mutual approved

3.7 Radio Sales Models

The following sales models are available :

Table 1-2 Radio Sales Models.

Model Description	Frequency Band	Frequency Range	Power Level	Model Number
GP320	VHF	136 -174 MHz	1-5W	MDH25KDC9AN0_E
GP320	UHF	403 - 470 MHz	1-4W	MDH25RDC9AN0_E
GP340	VHF	136 -174 MHz	1-5W	MDH25KDC9AN3_E
GP340	UHF	403 - 470 MHz	1-4W	MDH25RDC9AN3_E
GP340	LB1	29.7-42 MHz	1-6W	MDH25BEC9AN3_E
GP340	LB2	35-50 MHz	1-6W	MDH25CEC9AN3_E
GP340	300R1	300-350 MHz	1-4W	MDH25EDC9AN3_E
GP360	VHF	136 -174 MHz	1-5W	MDH25KDF9AN5_E
GP360	UHF	403 - 470 MHz	1-4W	MDH25RDF9AN5_E
GP380	LB1	29.7-42 MHz	1-6W	MDH25BEH9AN6_E
GP380	LB2	35-50 MHz	1-6W	MDH25CEH9AN6_E
GP380	VHF	136 -174 MHz	1-5W	MDH25KDH9AN6_E
GP380	UHF	403 - 470 MHz	1-4W	MDH25RDH9AN6_E

Benefits

Wideband operation and programmable channel spacing means a significant reduction in the number of different sales models that you need to stock.

Not all the product variants are available in every country due to differences in the local market requirements. Please refer to your price pages for a complete list of models.

3.8 Packaged Sales Models

All GP320, GP340, GP360 and GP380 packaged sales models consist of the following items :

- ❏ Radio
- ❏ Antenna
- ❏ 1200 mAH NiMH (Nickel Metal Hydride) battery
- ❏ Belt Clip
- ❏ Basic User Guide

Battery, antenna and Factory Mutual (FM) options are available, please check your Price Pages for details.

3.9 Customer User Guides

In order to help you and your customers use the radios safely and efficiently, two different customer booklets have been written :

- ❏ Basic User Guide
- ❏ Feature User Guide

3.9.1 Basic User Guide

The Basic User Guide provides useful information for your customers on how to start using their new GP300 Series radio. A copy of this multi-lingual booklet is included in every sales model box.

It contains essential radio safety and care information as well as advice on the battery charging and battery care.

IMPORTANT: **It is important that your customers read and understand this information. Please ensure your customers receive this booklet when they receive their radio**.

3.9.2 Feature User Guide

The Product Manual contains a printed copy of the Feature User Guide. It has been written especially for your customers and provides step by step operational instructions for all the features available for the GP320, GP340, GP360 and GP380 radios.

IMPORTANT: **For simplicity, please provide just the operational information for the features which you have programmed into your customers radio**.

3.9.3 Languages

The Basic User Guide is in the following languages:

❏ English	❏ German	❏ French	❏ Italian
❏ Spanish	❏ Portuguese	❏ Danish	❏ Swedish
❏ Dutch	❏ Russian	❏ Czech	❏ Hungarian
❏ Polish	❏ Romanian	❏ Turkish	❏ Arabic

The Feature User Guide is in the Product Manual Languages:

❏ English	❏ German	❏ French	❏ Italian	❏ Russian
❏ Spanish				

Chapter 2

FEATURES AND BENEFITS

1.0 Introduction

This chapter describes those radio features and functionality which offer a significant benefit to your customers. The intention is to provide you with useful information which is relevant to your customers that will help you sell the GP300 Series Professional portable radios.

2.0 Audio Quality Enhancement

2.1 Xpand™ Voice Compression

Xpand™voice compression combines two audio quality enhancement features - Companding and Low level Expansion (LLE).

2.1.1 Companding Feature

Companding is a collective term to define **comp**ressing the audio signal on transmission and ex**panding** the audio signal on reception. The overall effect is to reduce noise in the received signal, giving you crisper, clearer audio clarity. Companding should only be used when other radios in your system have the same companding feature available.

Companding and LLE are mutually exclusive, switching on one of the features automatically switches off the other.

It is important to ensure that **all** radios in a team have the feature switched on.

Benefits

- ❏ Crystal clear communication which makes listening easier.
- ❏ Improves efficiency as messages are heard and understood first time.

2.1.2 Low Level Expansion (LLE)

Feature

This allows improvements in audio quality by reducing noise usually heard during pauses in conversation.

This feature is automatically included in every radio and should only be switched off in specialised applications.

Benefit

- ❏ Pauses in conversations are now silent which makes it easier to listen.

Audio Quality Enhancement Summary

Table 2-1 Xpand™ Summary

		LLE	
		ON	**OFF**
COMPANDING	**ON**	X (Can't happen condition)	Recommended for teams where all radios use companding
	OFF	Default factory setting. Recommended for mixed fleets of companding and non- companding radios	Recommended only for applications where flat audio is used e.g. data applications.

3.0 Safety, Productivity and Security

3.1 Individual Calls

Feature

This allows two radio users to talk to each other in a one to one conversation.

Benefit

- ❏ This allows private / sensitive information to be exchanged between two individuals.

3.2 Group Calls

Feature

This allows a single user to call a number of other radio users at the same time for a one to many conversation. Like a conference call, the entire conversation is shared with everybody in the team. Although only one person can speak at a time, all members of the team can listen and take part in the conversation.

Benefits

- ❏ One call puts you in contact with a team of people.
- ❏ Teamwork is possible even when team members may be geographically remote from each other.
- ❏ Information is shared quickly and efficiently.

3.3 Emergency Calls

Feature

A single button press establishes immediate communication with a pre-defined person or group of people. Incoming emergency calls are unique and easily identifiable. Emergency calls are prioritised by the radio system.

The GP340/GP360/GP380 have a clearly identifiable orange emergency button which is conveniently located at the base of the antenna. However, any of the side buttons on the GP320 and the GP340/GP360/GP380 can be used to activate this feature.

An emergency message can be pre-record which is sent automatically when the emergency call feature is activated. This message may contain, for example, the user's location or status which may prove useful to the recipient, especially if, in the emergency situation, the user is unable to talk. Refer to Voice Storage to use this feature.

The emergency operation can be set up in a number of different ways :

- ❏ Tones and LEDs can be switched off so the radio operation cannot be noticed.
- ❏ Automatic transmit and receive cycles provides "hands free" communication.
- ❏ A pre-recorded emergency message, which allows user defined information, to be sent to team members in the event of an emergency.

Benefits

- ❏ Immediate and guaranteed communication with your team when you need it most in an emergency situation - no unpredictable infrastructure delays.
- ❏ Continued discreet communication during an emergency situation.
  e.g. During negotiations with an armed assailent.
- ❏ Additional location information significantly improves emergency rescue team response times in the event of an emergency.

3.4 Authorisation

Feature

This allows the control of call set up and monitoring activity. Only authorised radios have the ability to make calls or monitor channels. The only call which can be made by a de-authorised radio is the request for authorisation to a pre-determined destination.

Benefits

- ❏ Complete control of radio usage within a team, especially useful for supervisors.
- ❏ Reduced time wasting leading to increased productivity.
- ❏ Efficient use of air time.

3.5 Stun / Unstun

Feature

For added security and to avoid abuse of the radio system in which you operate, a feature known as **Stun/Unstun** is included in your radio.

This feature can only be activated by the system manager or administrator.

For example, if a radio is stolen and is being used illegally, the system administrator can send a signal which will **stun** the radio making it incapable of being used. This feature is also useful if the system is being abused by a user who is not complying with the correct communications protocol.

The radio can only be unstunned, i.e. returned to operational use, by an **unstun** signal sent from the system administrator or returning the radio for reprogramming.

Benefit

- ❏ Prevents radios which should not be used from being used.
  e.g. unreturned hire radios, stolen radios.

3.6 Lone Worker

Feature

The Lone Worker feature enables individuals to work alone with added safety by forcing the user to press radio buttons on a regular basis.

The radio will continue to operate as normal providing the radio buttons are pressed regularly. However, if none of the radio buttons are pressed for a pre-determined amount of time, the radio will sound a distinctive reminder to prompt the user to press one of the buttons.

If after a further amount of time, the radio user still has not pressed any of the buttons, the radio will conclude the operator is in need of assistance and automatically make an emergency call to a pre-determined contact number.

The operation is flexible and can be tailored to meet specific customer requirements.

Benefits

- ❏ Added security and safety for individuals who work remotely from their team.
- ❏ Added security and safety for individuals or teams who work in hazardous conditions.
- ❏ Ensures that in the event of an emergency, communication is established quickly and efficiently with all the inherent benefits of emergency operation.

3.7 VOX

Feature

With various audio thresholds levels and tolerances programmed into the radio, the VOX feature intelligently senses background noise, resulting in VOX adapting automatically to the noise level in the environment by setting the microphone input to key up the radio.

VOX operation is only possible once a special VOX headset is fitted to the radio.The headset allows speech to be detected and heard when the headset is worn. Once the headset is fitted to the radio, all audio is routed to the headset.

Calls are made by the radio whenever the user speaks into the headset microphone.

The microphone sensitivity can be adjusted to take account of background noise.

Benefits

- ❏ "Hands free" radio operation.
- ❏ Users do not have to stop, put down their work tools and pick up the radio when making and receiving a call - this increases productivity.
- ❏ Users can work with both hands whilst still remaining in continuous contact with their team.
- ❏ You gain the inherent benefits of wearing a headset - incoming calls are just heard by you and not shared with everyone else in the vicinity.
- ❏ VOX operation automatically adapts to any noise level.

3.8 Whisper

Feature

This allows a user to speak quietly into a radio and still be heard clearly over the air. The radio microphone sensitivity is increased making detection of quieter speech possible.

Benefits

- ❏ It allows you to use the radio discreetly without disturbing people who are near you.
- ❏ When used with a radio fitted with an earpiece speaker/microphone improved unobtrusive radio operation is possible. It is only necessary to speak quietly into the radio and all incoming calls are just heard by you and do not disturb other people around you.

3.9 Voice Recorder (GP340/GP360/GP380 only)

Voice Recorder Feature

This allows the storage, retrieval and deletion of voice messages. The radio can record messages received over the air or detected by the radio microphone. A number of different messages can be recorded with up to 120 seconds of available record time. The messages are remembered by the radio even when the radio is switched off or when the battery is removed.

This requires a voice storage option board to be fitted inside the radio.

Benefits

- ❏ Paperless notepad.
- ❏ Record and retrieve important information when you need it.
  e.g. Delivery addresses sent out by a central dispatcher.

Emergency Message Feature

An emergency message may be pre-recorded using the voice recorder and sent automatically when the emergency call feature is activated. This message may contain, for example, the user's location or status which may prove useful to the recipient, especially if, in the emergency situation, the user is unable to talk. The user can record one message **only** which can have a maximum length of 120 seconds.

Benefits

- ❏ User location and or status sent discreetly without the need to talk into the radio.
- ❏ Discreet messages sent between organisations to aid security.

3.10 Call Forward

Feature

This allows calls to be forwarded to another radio user.

Benefits

- ❏ Continued communication and teamwork even if you are unable to answer your calls personally.
- ❏ If you cannot be disturbed, e.g. in a meeting, your calls can be answered by somebody else.

3.11 Talkaround (GP340/GP360/GP380 only)

Feature

Talkaround allows a system to be bypassed. A system is used to cover a larger communication area than is possible with just a radio alone. Once the system is bypassed, it will only be possible to contact other radios which are within the normal communication range.

Benefit

- ❏ Continued communication even when parts of the system are taken out of service for maintenance.

3.12 DTMF

Feature

DTMF (Dual Tone Multi Frequency) is used when the radio is required to operate with an interface to a telephone system.

On all radios a DTMF encode sequence can be sent, and

on the GP380, the keypad can be put into DTMF live dial mode.

3.12.1 DTMF encode sequence

All radios can send pre programmed DTMF sequences. Each DTMF sequence can contain up to 24 DTMF digits. The sequences cannot contain a combination of 5T and DFMF digits; however, 5T and DTMF sequences can be combined in a telegram.

Benefits

- ❏ Link up with a telephone network to extend the communication system.
- ❏ Pre programmed DTMF sequences allow all radio users to call frequently needed telephone numbers (max 32 sequences).

3.12.2 DTMF Live Dial Mode (GP380 only)

There are two ways to access DTMF live dial on the radio:

1. Send a telephone interconnect call (5T or DTMF sequence) to a station that connects to a telephone line. The radio can then send DTMF live dial calls from the keypad. On completion of the call, the radio (if programmed) sends a cleardown call (5T or DTMF sequence) and the keypad returns to the default keypad mode.
2. Press a button pre-programmed to enter DTMF mode. The radio then sends DTMF live dial from the keypad. If needed, DTMF interconnect and cleardown calls can be sent from call buttons or live dial entry on the keypad. The radio keypad remains in DTMF live dial mode until the DTMF mode button is pressed again. When the radio exits DTMF mode, the keypad returns to the default keypad mode.

Benefits

- ❏ Link up with a telephone network to extend the communication system.
- ❏ Live dial allows the user to dial any DTMF telephone number.

3.13 Contact List (GP360/GP380 only)

Feature

A contact list, similar to a phonebook, may be used which allows access to up to 255 preprogrammed numbers accessed via the menu.

Depending on the way the radio is programmed, the radio will display either the alpha alias (name) or the number to be dialled.

Benefits

- ❑ Fast, easy access to pre-programmed numbers, saves time dialling.
- ❑ Quick call identification by displaying name or sounding tone.
- ❑ Can be used effectively with the status call feature.

3.14 Status Calls (GP360/GP380 only)

Feature

A status is a code for transmitting prearranged messages, e.g. status “05” may indicate “Return to Base”. The prearranged messages and associated code digits are contained in a Status List which contains up to 255 entries. This list is used for both incoming calls, when the status of the calling radio is displayed, and outgoing calls, when the status of the radio is sent either to a requesting radio or to other radios.

Benefits

- ❑ Pre-arranged messages used to convey status avoids ambiguity.
- ❑ Efficient use of airtime.
- ❑ Sends useful information to team members, discreetly, without the need to talk.

3.15 Dedicated Call Buttons

Feature

This allows a button to be programmed with a contact number which is always dialled whenever the button is pressed. It is comparable with the memory button facility on some telephones. A number of different buttons can be used for this purpose.

Benefits

- ❑ Fast access to frequently called people.
- ❑ Simple and effective operation.
- ❑ Promotes efficient radio operation.

3.16 Address, Status and Channel Entry

Feature

The Address, Status and Channel entry menu can be selected through the menu navigation buttons or programmable buttons. Once in the entry menu, the selected feature can be:

Incremented / decremented by the up / down menu navigation buttons;

Incremented / decremented by the rotary;

Entered directly on the keypad. (GP380 only).

Benefits

- ❑ Keypad direct entry of the Address, Status and Channel digits allows fast selection.
- ❑ Programmable buttons allow rapid change between entry functions.
- ❑ Both these make the radio quicker to use and save the radio user's time.

3.17 Default Settings

3.17.1 Default Display Mode (GP360/380)

When the display is in the idle state, it will display the default display. This can be programmed to be:

Text up to 14 characters long;

Current channel.

3.17.2 Default Keypad Mode (GP380)

The default function of the keypad can be programmed to be:

Channel

Address

Status

With direct entry from the keypad of Address and Status, a Fixed Telegram button or Address Send button (for Advanced Multicall users only) must be pressed in order to insert the digits into the telegram and send it.

With direct entry from the keypad of Channel number, the menu select button (tick) must be pressed before the radio goes to the new channel. If the selected channel is invalid (including wrong number of digits), an error tone will be sounded, and the radio will return to the Channel menu option.

Benefits

- ❑ Default settings allow the most frequently used function(s) to be programmed to the keypad, thus customising the radio for optimum performance. This saves the radio user's time.

3.18 Missed Calls List (GP360/GP380)

Feature

If an incoming call is unanswered, the caller's ID will be placed in the Missed Calls List. The Missed Calls List stores the following information about each call:

Caller's radio ID, or alias (if defined in the contact list);

Status digits, or alias (if defined in the status list);

Telegram number (Advanced Multicall users only).

If the received telegram does not have address digits, the call will not be placed in the Missed Calls List. The Missed Calls List will not store the same radio ID more than once.

The Missed Calls List can support up to 10 entries. If the Missed Calls List is already full and another unanswered call occurs, the radio can be programmed to either:

Discard the oldest call entry; or

To not enter any new calls.

If the Missed Calls List has entries, the Missed Calls List icon will be illuminated. If one or more new calls have been added since the last time the Missed Calls List was displayed, the Missed Calls List icon will flash.

The Missed Calls menu can be accessed via the menu navigation buttons or a programmable button. However, if the Missed Calls List is empty, the Missed Calls menu will not be available. Missed Calls are displayed on a last in first out basis. They can be viewed and deleted from the Missed Calls menu.

The currently selected Missed Call can be answered by pressing any button programmed as Fixed Telegram. The radio ID stored for that entry will be entered in the telegram, then transmitted.

For Advanced Multicall users only, the currently selected Missed Call can be answered by pressing any button programmed as Address Send. The radio ID stored will be entered in the telegram number stored, then transmitted.

The tick and hash buttons will serve as Fixed Telegram or Address Send buttons, if so programmed.

There must be the correct number of radio ID digits for the selected telegram's Variable Digits. An incorrect number of digits will result in a side button error tone.

When the Missed Call is answered, the Missed Calls menu is exited, and the call is deleted from the Missed Calls List.

NOTE When a user answers the Missed Call, they may be on a different channel from that on which the call was received.

The Missed Calls List is remembered over radio power down.

If call forward has been enabled, the calls will not be stored in the forwarding radios Missed Calls List.

Benefits

- ❏ The user will know who has called if they are unable to answer calls for some reason.
- ❏ The user can choose not to answer low priority calls immediately if they are busy with other activities. The caller's ID will be stored even if another call is received.
- ❏ The user can answer calls when it is convenient for them.
- ❏ The user does not have to answer the calls in the same order that they were received.

3.19 Option Board Support

Feature

The functionality of the GP Series radios can be enhanced by installing a third party Option Board.

The Option Board is plugged into a purpose designed connector fitted on the radio motherboard; no soldering of wires is required.

Option Boards presently available are:

Voice Storage - (available through Motorola)

SmarTrunk - (available from SmarTrunk Systems Inc)

Transcrypt Encryption - (available from Transcrypt International)

For information regarding the operation of these third party Option Boards, and the considerable benefits they provide, please contact the appropriate supplier. Recommended third-party supplier internet sites are:

SmarTrunk Systems Inc - http://www.smartrunk.com

Transcrypt International - http://www.transcrypt.com

Benefits

- ❏ Radio functionality can be enhanced to match the customers' requirements
- ❏ The Option Boards are plug-in (no soldering is required). Fitting is quick, easy and does not introduce faults.

4.0 User Indications

4.1 Display (GP360/GP380)

Feature

A 14-character display shows channel, menu and radio status information. The top two screen rows show radio information, such as the power setting, battery status and the current settings of key radio parametrers which make the radio easier to use.

Benefits

- ❑ Menu driven features for ease of use and extended feature set.
- ❑ Helpful user information increases user efficiency.

4.2 Menu

Feature

Many of the radio features are contained in a structured menu which allows fast and easy access as well as effectively extending the feature set.

Benefits

- ❑ Quick access to the radio features.
- ❑ Permits many features to be programmed and accessed in the radio.

4.3 Keypad (GP380)

Feature

A touch tone keypad may be used for dialing a phone number (DTMF), for changing channel or entering an address or status number.

Benefits

- ❑ Allows rapid channel address and status selection; particularly useful on a large or complex system.
- ❑ Extends the DTMF feature.

4.4 Keypad Lock/Unlock

Feature

On the radio there is a keypad lock feature which allows the keypad keys and menu keys to be locked in order to eliminate accidental key presses.

Benefits

- ❑ Prevents accidental key presses.
- ❑ Deterrent to non-users tampering with the radio.

4.5 Backlight

Feature

Backlight illuminates the radio display, keypad and menu navigation keys.

The radio can be programmed to have the backlight:

i. Permanently on

ii. Permanently off

iii. On for a timed period. New information being displayed will cause the backlight to remain on for 10 seconds.

Benefits

- ❏ Ease of use giving clear indication of the keys and display especially in subdued light.
- ❏ Allows the radio to be used in a wider variety of environments.

4.6 Call Timer

Feature

This limits the duration of calls. Prior to the call ending, warning indications are given (visual and audible) to inform the callers that the end of the call is imminent so allowing the conversation to be ended. The call duration can be tailored to suit specific customer requirements.

Benefits

- ❏ Prevents the misuse of airtime.
- ❏ Enforces efficient use of airtime.

4.7 Low Battery Level Indicator

Feature

Audible and visual battery warnings indicate the battery level status. The radio user is informed when the battery level is running low during calls and also whilst in standby.

Benefits

- ❏ Users are prompted to change batteries prior to running out of battery life.
- ❏ Increases user confidence of continuous communication when using the radio.

4.8 Call Status Indications

Feature

Audible indications are provided by the radio to indicate the call status, e.g. the called party is busy.

Benefit

- ❑ Audible indicators enable users to hear the call progress without having to look at the radio.

4.9 Escalert

Feature

This allows the volume of incoming call indications to steadily increase.

Benefits

- ❑ Attracts users attention to incoming calls.
- ❑ Helps reduce time to answer calls - improves efficiency.
- ❑ Helps promote efficient radio operation in high noise environments.

4.10 Call Reminder Alerts

Feature

The radio will sound distinctive alerts when an incoming call is not answered. Different indications are provided for individual and group calls. The alerts continue to be sounded until the radio user presses or moves any of the buttons or switches. The call reminder indicates the last call received by the radio.

Benefit

- ❑ Users are made aware of missed calls.

5.0 Radio Performance

5.1 Scanning

Feature

This allows activity on different communication channels to be monitored. Up to sixteen different channels can be put into a scan list which are listened to sequentially.

Once scan has started, detection of an incoming call causes the radio to automatically switch to the channel so the call can be received; only available in radios with more than one channel.

Benefits

- ❑ Efficient communication - incoming calls are not missed even when they can be received from more than one communication channel.
- ❑ Simplifies the radio operation for users of multiple communication channels.

5.2 Nuisance Channel Delete

Feature

This allows channels which continually generate unwanted calls or noise to be temporarily removed from the scan list. Deleted channels can be recovered by turning the radio off and back on again.

Benefit

- ❑ Efficient radio operation as the radio just listens to channels where valid calls will be received.

5.3 Monitor

Feature

This allows voice activity on a channel to be listened to. It is particularly useful in radio systems when a single communication channel is shared by several different teams of people, as it allows individuals to check that the channel is free prior to making a call.

Benefit

- ❑ Guaranteed successful communication first time, every time.

5.4 High / Low Output Power

Feature

The radio output power has two settings and these can be varied whilst the radio is being used.

Benefits

- ❑ Low output power conserves the battery power so the battery will last longer.
- ❑ Higher output power allow the radio to transmit over a greater distance so you can contact a radio which is farther away.

6.0 Radio Feature Comparisons

6.1 GP320 vs GP340 vs GP360 vs GP380

This chart highlights the differences between the New Professional GP320/ GP340/ GP360/ GP380 Models in the Motorola range of portable radios.

Table 2-2 GP320 vs GP340 vs GP360 vs GP380 Feature Comparison.

Feature	GP320	GP340	GP360	GP380
Individual Calls	√	√	√	√
Group Calls	√	√	√	√
Emergency Calls	√	√	√	√
Authorisation	√	√	√	√
Stun / unstun	√	√	√	√
Xpand™ Voice Compression	√	√	√	√
Low Level Expansion	√	√	√	√
Lone Worker	√	√	√	√
VOX	√	√	√	√
Whisper	√	√	√	√
Voice Recorder/Emergency Message		√	√	√
Call Forward	√	√	√	√
Talkaround		√	√	√
DTMF Encode Sequences	√	√	√	√
DTMF Live Dial				√
Contact List			√	√
Status Calls			√	√
Dedicated Call Buttons	√	√	√	√
14-Character Display			√	√
Menu Navigation			√	√
Keypad				√
Keypad/Menu keys Lock/Unlock			√	√
Numeric Channel Select				√
Backlight			√	√
Call Timer	√	√	√	√
Low Battery Level Indicator	√	√	√	√
Call Status Indications	√	√	√	√

Table 2-2 GP320 vs GP340 vs GP360 vs GP380 Feature Comparison.

Feature	GP320	GP340	GP360	GP380
Escalert	√	√	√	√
Call Reminder Alerts	√	√	√	√
Missed Calls List			√	√
Scanning		√	√	√
Vote Scan		√	√	√
Nuisance Channel Delete		√	√	√
Monitor	√	√	√	√
High / Low Output Power	√	√	√	√
Option Board Support		√	√	√
Radio Information			√	√
20ms CCIR	√	√	√	√

6.2 GP320/GP340/GP360/GP380 vs P110/GP300/GP900/HT1000

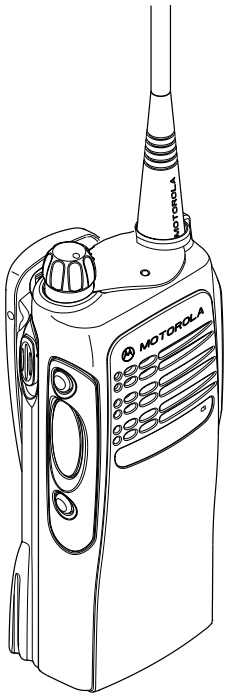
This chart highlights the differences between the New GP300 Series of Professional Radios and their predecessors in the Motorola range of portable radios.

Table 2-3 Radio Feature Comparison.

	GP320	GP340	GP360	GP380	P110 GP300 PL	HT1000 PL	P110 GP300 5 Tone	GP900 5 Tone
XPand™	√	√	√	√				
Switchable channel spacing	√	√	√	√		√		√
Wideband	√	√	√	√		√		√
PL	√	√	√	√	√	√	√	√
5 Tone	√	√	√	√			√	√
Escalert	√	√	√	√				
Whisper	√	√	√	√		√		√
Loneworker	√	√	√	√				
Voice Recorder		√	√	√				
Contact list			√	√				
Calling line identity			√	√				
Alphanumeric status messages			√	√				
Channel aliasing			√	√				
Emergency transmit message		√	√	√				
Battery gauge			√	√				
Display call timer			√	√				
Multicall dialling				√			√	√
DTMF live dial				√	√ (Retrofit Kit)		√	√
DTMF Encode Sequences	√	√	√	√				
Numeric Channel Change				√				
Missed Calls List			√	√				
Vote Scan		√	√	√				
Option Board Support		√	√	√				

6.3 GP320 Summary

- ❏ Crystal Clear Audio
- ❏ Smallest, lightest Professional Series Radio
- ❏ Wideband
- ❏ 1 Channel
- ❏ 12.5/25kHz Spacing
- ❏ MIL Standards 810 C, D & E
- ❏ IP54
- ❏ FM Approved

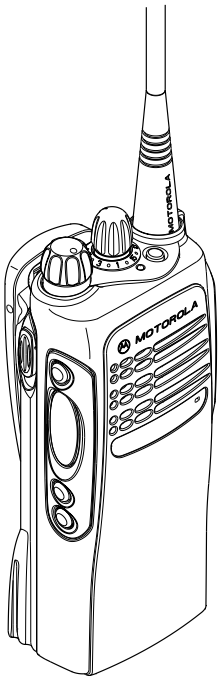


GP300 5 Tone plus

- ❏ XPAND™
- ❏ Escalert
- ❏ Lone Worker
- ❏ Whisper

6.4 GP340 Summary

- ❏ Crystal Clear Audio
- ❏ Wideband
- ❏ 16 Channels
- ❏ 12.5/25kHz Spacing
- ❏ MIL Standards 810C, D & E
- ❏ IP54
- ❏ FM Approved
- ❏ Upgradeable
- ❏ Option Board Compatible
- ❏ Extra Side Button
- ❏ Top Orange Button

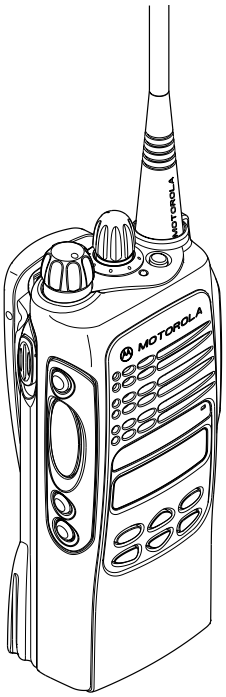


GP320 Operation plus

- ❏ Scan
- ❏ Voice Recorder
- ❏ Talkaround

6.5 GP360 Summary

- ❏ Crystal Clear Audio
- ❏ Wideband
- ❏ 255 Channels
- ❏ 14 Character Alphanumeric Display
- ❏ Menu Navigation Keys
- ❏ 12.5/25kHz Spacing
- ❏ MIL Standards 810 C, D & E
- ❏ IP54
- ❏ FM Approved

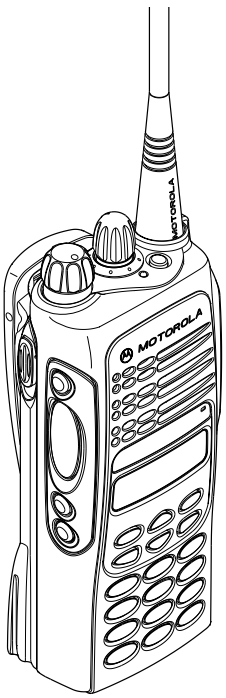


GP340 Operation plus

- ❏ Contact List
- ❏ Call Line Identity
- ❏ Alpha Numeric Status Messages
- ❏ Channel Aliasing
- ❏ Emergency Transmit Message
- ❏ Battery Gauge
- ❏ Displayed Call Timer

6.6 GP380 Summary

- ❏ Crystal Clear Audio
- ❏ Wideband
- ❏ 255 Channels
- ❏ 12.5/25kHz Spacing
- ❏ 14 Character Alphanumeric Display
- ❏ Menu Navigation Keys
- ❏ Keypad
- ❏ MIL Standards 810 C, D & E
- ❏ IP54
- ❏ FM Approved



GP360 Operation plus

- ❏ DTMF Dialling
- ❏ Multicall Dialling

7.0 Other Dealer Benefits

7.1 Customer Programming Software (CPS)

The new programming software is based upon the Windows 95™ graphical user interface. The result is a programming package with familiar screen layouts and nomenclature. The operation has been simplified with distinct improvements in the presentation and traceability of information.

In order to accommodate the design rules imposed by these standards, the software is no longer compatible with older computers using MSDOS™ and earlier versions of Windows™.

Benefits

- ❑ Windows™ - familiar screen layout reduces training time.
- ❑ Simpler operation - increases productivity and reduces training time.

7.1.1 CPS Help Text

To further simplify the CPS operation, each element has comprehensive “on-line Help” for each of the fields. This ensures that the latest information is always at hand whenever the CPS is in use.

7.1.2 Global Tuning Software

Although modern radios eliminate most of the routine testing and tuning for delivery of radios to users, there is still a requirement for tuning to be carried out during repair.

No tuning capability is included in the GP300 Series CPS. The tuning software is now a separate software package. The tuner is common to all GP Series radios - this includes the GP1200, GP600 and GP300 Series.

Benefits

- ❑ Reduced training requirements for dealer staff.
- ❑ Improved Dealer Productivity.
- ❑ Better customer response.
- ❑ Dealers can concentrate on understanding customer wants and tailoring equipment to customer requirements with less resource expended on programming.

7.1.3 System Requirements

The minimum / suggested computer specification is :

	Minimum	Suggested
RAM	8 Megabytes	32 Megabytes
Free Hard-drive Disk Space	10 Megabytes	20 Megabytes
Display Type	VGA 16 colour	SVGA 256 colour
CPU	Pentium	Pentium 200MHz

The RIB box, power supplies and computer cabling are as previous radios and only a new RIB to Radio cable is required.

7.1.4 Password Protection of the Codeplug

The codeplug that is programmed into a radio can be password protected. If the codeplug is password protected, the correct password must be entered into the CPS before it will read the radio. However, a new codeplug can be programmed into a radio with a password protected codeplug; thus a radio can be programmed from a CPS codeplug file if the password is forgotten, or a new file can be created and programmed into a radio if a customer changes dealer.

Password Protection only works on radios with radio firmware version:

R03 and above for portables,

R01 and above for mobiles,

and with codeplug software version 4 and above for both portables and mobiles.

Radios upgraded to the above firmware versions are capable of being set up with password protection.

Benefits

- ❑ The radio codeplug cannot be read and used by another dealer, thereby safeguarding the time and effort invested by yourself.

7.2 Radio Information (GP360/GP380)

Feature

To enable the dealer/system administrator to establish, quickly, the software and radio parameters programmed into your radio, a feature known as **Radio Information** can be accessed via the menu.

On selection of **Radio Information**, the radio display will indicate:

i. Software (SW) version

ii. Codeplug (CP) version

iii. Software (SW) part number

iv. Codeplug (CP) part number

Benefit

- ❑ Fast access to radio information without the need to set up programming facilities.

Chapter 3

ACCESSORIES

1.0 Batteries

A new range of batteries have been developed for the new GP Series of Professional Family Portable Radios, this includes all GP300, GP600 and GP1200 Series radios.

Three different types of battery chemistry are now available to provide the most effective solution. Each has been designed to optimise a different set of the important parameters; size, weight and service life.

These are:

- ❏ Lithium Ion (LiIon).
- ❏ Nickel Metal Hydride (NiMH).
- ❏ Nickel Cadmium (NiCd).

In order to ensure that these battery types, each based upon a different chemical technology, are correctly and safely charged and function properly, the Professional Series batteries contain a small Integrated Circuit that identifies its key parameters to the radio and to the charger.

1.1 Lithium Ion (LiIon)

These batteries utilise the most modern chemistry, provide the highest power at the lowest weight and contain a built in protection circuit. However, these batteries are not recommended for use at the extremes of temperature due to a marked decrease in capacity.

For safety reasons these batteries must only be charged in a ‘smart’ charger designed for the specific cell characteristics. All Motorola Professional Series radios are suitable for the LiIon batteries.

Advantages

- ❏ Lightest weight of all batteries.
- ❏ State of the art chemistry.
- ❏ No memory effect.

Disadvantages

- ❏ Longer charge times.

1.2 Nickel-Metal Hydride (NiMH)

More recent technology which operates similar to and provides the same capacity as Nickel Cadmium batteries in a lower weight package.

Advantages

- ❑ Lighter than comparable Nickel Cadmium batteries.
- ❑ Less prone to memory than Nickel Cadmium.
- ❑ Fewer toxic metals - more environmentally friendly.

Disadvantages

- ❑ Self discharges at approximately 30% per month when stored.
- ❑ Nickel Metal Hydride will not operate at as low temperatures as Nickel Cadmium.

1.3 Nickel Cadmium (NiCd)

This well proven chemistry provides the best performance at extreme temperatures but suffers from memory effect and has the lowest power to weight ratio.

Advantages

- ❑ High number of charge / discharge cycles.
- ❑ Good performance at low temperatures.
- ❑ Easy to recharge after prolonged storage.
- ❑ Capable of sustained high rate of charge and discharge.

Disadvantages

- ❑ Memory effect will develop if battery is not fully discharged during each cycle.
- ❑ Battery does not perform well if it is left sitting in the charger and is only used for brief periods of time.
- ❑ Must be recycled since Cadmium is toxic.

1.4 Selecting the Right Battery

The selection of the correct battery for a particular application will depend on many factors. A typical procedure for battery selection is shown below:

- ❑ Identify how many hours of operation are required.
- ❑ Identify if the product will be operated in an intrinsic safe environment.
- ❑ Identify the required operating temperature range.
  For example, inside all day in an air conditioned office, inside a food freezing plant, work in a coal mine.
- ❑ Having guaranteed the required performance, select the most appropriate radio battery combination.
- ❑ For most effective radio performance use only Motorola branded batteries.

Table 3-1 Battery Specifications

Weight: (gm)		
Standard High capacity NiMH battery	202	
Ultra high capacity NiMH battery	275	
High capacity NiCd battery	225	
High Capacity Lilon battery	125	
Average Battery Life @5/5/90 Cycle:	**Low Power**	**High Power**
With Standard high capacity NiMH battery	11 hours	8 hours
With Ultra high capacity NiMH battery	14 hours	11 hours
With NiCD battery	12 hours	9 hours
With Lilon battery	11 hours	8 hours

1.5 Battery Terminology

Memory Effect

Continually not fully discharging a battery causes an accumulation of very tiny gas bubbles and the formation of irregular shaped crystals which adhere to the cell plates. These irregular shaped crystals prevent the battery attaining its full capacity.

The result is the battery will only charge to the level at which it was last discharged.

For example, a person over many months routinely uses only 70% of the battery capacity before recharging. In a Nickel Cadmium battery that originally had a battery life of 8 hours, this would reduce to only 5.6 hours once memory effect had occurred.

To avoid the memory effect, ensure the battery is fully discharged before starting a charge cycle. This can most effectively be achieved by purchasing a battery maintenance/optimising system.

NOTE Nickel Metal Hydride batteries are less prone to memory effect and Lithium Ion batteries do not exhibit this effect at all.

2.0 Chargers

Rapid, tri-chemistry battery chargers have been developed with a distinctive new appearance in single and six unit versions. These "intelligent" chargers are able to detect the battery type and the remaining charge of the battery, which ensures batteries are charged for exactly the right time.

Additional charging indications provide meaningful information about the status of the charging.

In order to minimise the costs of changing to the new professional series radios, there is a replacement single unit "charger pocket" available to upgrade existing GP900 and GP300 chargers that use the listed power supply units:

Table 3-2 Battery Chargers

Part Number	Description	Connector
Single unit charger complete with power supply:		
MDHTN3001_	230V Single Unit Charger	Euro plug
MDHTN3002_	230V Single Unit Charger	UK plug
Single unit charger for use with existing Transformer:		
MDHTN9000_	Single Unit Charger Pocket only	
Note: This charger can only be used with the following GP300/GP900 Transformers:		
2580611V02	230V Transformer	Euro plug
2580611V03	230V Transformer	UK plug
6 Unit Charger without Power Supply:		
MDHTN3004_	Multi-Unit Charger	Euro linecord
MDHTN3005_	Multi-Unit Charger	UK linecord
Wall Mount Kit:		
NLN7967_	Wall Mount Kit for Multi-Unit Charger	

Benefits

- ❏ One tri-chemistry charger can be used for every battery in the product range - a cost effective solution.
- ❏ Rapid charging times allow more batteries to be charged during a workshift.
- ❏ Easy to use - batteries cannot be inadvertently put into the "wrong" charger.
- ❏ Easy to use - indications provide useful information.

3.0 Antennas

For most frequency ranges, antennas are available in a choice of lengths. The styling has been changed to fit in with the new radio appearance without sacrificing the performance.

The antennas are moulded in a low loss material to maximize range.

Benefits

- ❑ Short antennas reduce the overall radio product size and are less obtrusive.
- ❑ Long antennas provide a larger communication range - useful for users working in remote locations who are remote from their team and require maximum range.

For a complete list of antennas, please refer to your Price Pages.

4.0 Carrying Accessories

All carry accessories offer the generic benefit of "hands free" carrying. They allow users to have their radio in the most convenient and productive position at all times. With both hands free between calls, the user may continue working, thus increasing productivity and safety.

Carry accessories keep the radio in very close proximity providing continuous communication within arms reach. Users avoid losing or misplacing radios and know exactly where to find their radio when they need to make or answer a call hence minimizing time to answer or set up calls.

Avoiding the chance of losing or misplacing radios also cuts down potential replacement costs.

The benefits of using carry accessories are:

- ❑ The radio is always within arms reach.
- ❑ There is a reduced chance of radios being lost or misplaced.
- ❑ The radio can be used “hands free”.
- ❑ The radio is easily accessable in emergency situations.

4.1 Spring Belt Clip

Attached to the back of the radio with a spring mechanism which is designed to stand up to the rigours of daily usage. A belt clip is included with every radio as standard.

Benefits

- ❑ The spring action ensures the radio is held securely in place, whilst still allowing easy fitting and removal.
- ❑ The GP series radio are all smaller and lighter, clothes will not be dragged down as much when the radio is clipped to the belt.

4.2 Carry Cases

A wide variety of leather and nylon carry cases are available. Different designs ensure the microphone, speaker, buttons and controls are easily accessible.

Standard leather cases
Rugged, heavy duty design which have either a belt loop or a swivel attachment. The swivel attachment allows fast fitting, removal and freedom of movement when attached to a belt.

Nylon and Soft leather cases
These light weight cases mould to the shape of the radio providing protection without significantly increasing the size and weight of the radio.

Benefits

- ❏ All cases provide additional protection and help radios stay clean and dry.
- ❏ The nylon cases can be easily washed to keep them looking clean - useful for hire fleets or when the radio is used in dusty environments.

For a complete list of carry cases, please refer to your Price Pages.

5.0 Audio Accessories

All audio accessories are fitted onto the side radio accessory connector. Remove the accessory dust cover and use the thumb screw to securely fasten the connector to the radio. Once fitted to the radio, all audio is routed to the accessory which means incoming audio will not be heard through the radio loudspeaker.

Some typical audio accessories are summarised in the following paragraphs; for a complete list of Motorola Audio Accessories, please refer to your Price Pages.

5.1 GP300 Audio Accessory Adapter

This adapter has been specially developed to be used with the new GP Series Professional Family Portable Radios. The adapters fit into the radio accessory connector and existing audio accessories may be plugged into the adapter.

Benefits

- ❏ Allows the continued use of existing approved GP600, GP300 and P110 audio accessories.

Considerations

The adapter may not be the best solution if:

- ❏ The replacement audio accessory is cheaper than the adapter.
- ❏ If the overall product size is required to be as small as possible.

5.2 Remote Speaker Microphones (RSM) and Public Safety Microphone (PSM)

These small, rugged, accessories may be clipped to clothing to allow incoming and outgoing calls to be received and made closer to the users head. Noise cancelling features are also available for use in high noise environments. The public safety version is available incorporating a UHF antenna to enhance radio system coverage.

Selected remote speaker microphones incorporate a 3.5 mm jack connector to allow the use of discrete earpieces.

The products share some key styling characteristics of the GP Series of Professional Portable Radios.

Features

- ❏ Coiled cord.
- ❏ Omni-directional clip on.
- ❏ Provides remote talk and listen capability.

Benefits

- ❏ Offers optimal upper body positioning.
- ❏ Minimizes strain.
- ❏ Suited to noisy environments.

5.3 Earpieces

5.3.1 Standard Simple earpieces

Simple, cost effective, listen only, earpieces are available that provide all users, particularly the first time user, with the ability to listen to radio messages without them being overheard. The earpieces are available in two colours, beige or black.

Features

- ❏ Small and discrete.
- ❏ Clear radio reception.

Benefits

- ❏ Discrete listening.
- ❏ Good in noisy environments.
- ❏ Permanent radio message awareness.
- ❏ Ideal for roles where unobtrusive use of two way radio is required.

5.3.2 Earpiece with Microphone and PTT

These earpieces provide the ideal solution where discrete operation is preferred. The microphone and PTT can be concealed about the user, for example under a coat lapel or inside the cuff of a jacket. Two versions are available; a two-wire version, incorporating a separate earpiece and combined microphone and PTT, and a three-wire version with separate earpiece, separate microphone and separate PTT. The earpieces are available in two colours, beige and black.

Features

- ❏ Small and discrete.
- ❏ Clear radio reception.
- ❏ Separate microphone/PTT (two-wire version).
- ❏ Separate microphone and separate PTT (three-wire version).

Benefits

- ❏ Ideal for roles where unobtrusive use of two way radio is required.
- ❏ Permanent radio message awarenesss.
- ❏ Guarantees covert and effective communication.

5.3.3 Earbuds (with 3.5mm Jack)

These small effective earbuds are designed specifically for use with the Remote Speaker Microphones and Public Safety Speaker Microphone. For discrete listening, the earbud connects quickly through a 3.5mm jack and once connected disables the RSM or PSSM speaker. The earbud cable has both curly and straight sections designed to minimise cord pull and slack at the same time.

Features

- ❏ Replaces the speaker when used with the GP Professional Remote Speaker Microphones and Public Safety Speaker Microphone.
- ❏ Combination straight and coiled cord.

Benefits

- ❏ Allows the user to constantly and discretely listen to radio messages.
- ❏ Minimum pull, maximum flexibility and comfort.

5.3.4 Flexible Ear Receiver

A simple, cost effective, listen only earpiece that provides all users, especially the first time user, with the ability to listen to radio messages without them being overheard. The ear receiver is coloured black.

Features

- ❏ Substitutes for the radio speaker.
- ❏ On the ear mounting.

Benefits

- ❏ Allows constant discrete receive communication.
- ❏ Comfortable for extended wear.

5.4 Headsets

5.4.1 Breeze Headset with PTT

The Breeze headset is ideal for fast-paced busy environments and provides high clarity discrete two-way radio communication while offering the additional comfort necessary for extended wear.

Features

- ❑ Ultra-light behind the head design.
- ❑ Unique “off the ear” earpiece.
- ❑ Flexible offset boom microphone.

Benefits

- ❑ Secure unobtrusive and comfortable.
- ❑ Allows the user to maintain clear “face to face” communication.
- ❑ Designed to leave the mouth clear and the microphone unobscured.

5.4.2 Ultra-Lightweight Headsets

These single sided headsets provide enhanced audio performance whilst allowing the user to communicate with non radio users. The lightweight constuction ensures user comfort for extended periods and the inovative design provides for left or right side mounting.

Features

- ❑ Light and ergonomically designed to be worn on the ear.
- ❑ Low profile boom microphone and earbud.

Benefits

- ❑ No headband.
- ❑ Provides stylish and discrete communication.
- ❑ Freedom of movement.

5.4.3 Lightweight Headsets

These single sided headsets provides enhanced audio performance whilst still allowing the user to communicate with non-radio users. The headsets are available in two different styles to provide users with a choice to best suit individual requirements. The headset may also incorporate an in line PTT switch.

Features

- ❑ Comfortable and light headset with single earpiece.
- ❑ Reversible boom microphone.
- ❑ Optional in-line, clip on PTT.

Benefits

- ❏ Can be used for lengthy periods of time.
- ❏ Enables headset to be used on either ear.
- ❏ Minimum pull, maximum flexibility and comfort.
- ❏ Convenient radio communication.

5.4.4 Medium weight Headsets

These high quality headsets are ideal for use in rugged environments. The over-the-head headband style improves comfort levels, especially when worn for long periods. An incorporated noise cancelling microphone ensures that a clear voice message is communicated even in high noise levels. The headsets are also available with in-line PTT and behind-the-head headband style, for use under protective headgear, offering remote PTT capability.

Features

- ❏ Padded headband and earmuffs.
- ❏ Noise cancelling microphone.
- ❏ Optional in-line, clip on PTT.

Benefits

- ❏ Comfortable for extended periods of time.
- ❏ High quality audio performance best suited to noisy environments.
- ❏ Convenient radio communication.

5.4.5 Heavy Duty Headsets

Superior quality headset that can withstand the most rugged of environments. In addition to the adjustable headband there is a behind-the-head sprung steel headband making it a secure fit for all head sizes. The noise cancelling technology ensures a clear voice message is communicated even in high noise environments.

Features

- ❏ Noise cancelling microphone technology.
- ❏ 24dB rated noise reduction ear defenders.
- ❏ Field repairable.

Benefits

- ❏ Ensures a clear communication.
- ❏ Ideal for noisy working environments.
- ❏ Orderable spare parts allow for the headset components to be replaced if broken.

5.4.6 noise-com™

The noise-com™ high performance audio accessory with integrated PTT is specially designed for the users who require radio communications in high noise environments and is easily fitted into a pair of passive earmuffs. The headset also provides handsfree VOX operation when used with suitably programmed radios.

Features

- ❏ Simple and easy to mount into existing passive earmuffs.
- ❏ Low profile reversible microphone.
- ❏ Coiled expandable cord.

Benefits

- ❏ Can be inserted into either earmuff.
- ❏ Provides high quality radio communication in high noise environments.
- ❏ Minimum strain for maximum comfort.

5.4.7 helmet-com™ with com-control™

The helmet-com™ with com-control™ is designed to meet the needs of professional users working in extreme conditions with helmets or breathing apparatus. Its bone-inductive microphone technology provides clear and reliable communications when connected to almost any protective headgear, using a simple and secure mounting system. The extra large, rugged PTT provides positive, instant communication even when operated with thick gloves.

Features

- ❏ Bone-inductive microphone technology.
- ❏ Easily clips onto most helmet webbing systems.
- ❏ Large red PTT module with velcro or belt clip attachment.

Benefits

- ❏ Clear and reliable radio communication.
- ❏ Ideal for high noise or rugged environments.
- ❏ Ideal for use with gloves.

5.5 Radio Interface and Control

The Voiceducer Radio interface systems are used with earpiece bone-inductive microphones. The innovative technology relies on the bone vibrations in the ear canal generated by speech. This technology provides clear communication without the need for a separate microphone giving the user the ultimate in discrete audio functionality. In addition it is possible to connect an optional body switch PTT or a finger PTT. There is also a VOX version available.

Features

- ❏ Uses bone induction technology.
- ❏ Available with standard or high noise ear microphones (purchased as separate items).
- ❏ Belt mounted.
- ❏ Optional VOX mode.

Benefits

- ❏ Earpiece provides both talk and listen functionality.
- ❏ Effective in high ambient noise environments up to 105 dB.
- ❏ Discrete and easy to wear.
- ❏ Offers complete hands free solution.

6.0 Vehicle Adapters

The Vehicle Adapter has been developed for users who want to use their GP Professional series radio on the move. Vehicle Adapters are available for both UHF and VHF radios. Once installed the radio just clicks into place and can be connected to an external antenna, microphone, PTT switch or, for MPT1327 radio models, to a personal computer through a MAP27 interface. The Vehicle Adapter also detects the battery chemistry of the radio and automatically selects the best charging method for that battery.

Features

- ❏ Provides connection to an external antenna.
- ❏ Powers radio and charges the battery.
- ❏ Includes MAP27 Interface.

Benefits

- ❏ Extends the radio’s range whilst mobile.
- ❏ Extends the radio’s usage time when on the move.
- ❏ Enhances radio functionality when mobile.

7.0 Option Boards

Most radios have an internal option connector which allows option boards to be fitted. Option boards change the operation of the radio, adding special functionality to the radio, allowing additional functionality to be offered.

NOTE Please note that it is not possible to fit option boards into the GP320 models.

Motorola published the details of the interface to key Motorola Application Partners who are able to produce special purpose option boards which will work with the radios.

Benefits

- ❏ Approved option boards can be fitted without affecting the warranty.
- ❏ Future communication needs can be accommodated.
- ❏ The radio has been designed specifically to allow fast, simple option board installation.
- ❏ The flexibility of a custom design with the comfort, quality and reliability of a standard Motorola product.

7.1 Voice Storage Option Board

The voice storage option allows the user to store 120 seconds of audio. It is possible to store audio received over the air, detected by the radio or from the accessory microphone. The Voice Storage capability can be used to:

- ❏ To store an incoming call - “Call Received” feature.
- ❏ To store a voice message from the user - “Voice Recorder” feature.
- ❏ To store a greetings message and incoming message - “Voice Message” feature.

7.1.1 Call Received

The Call Received feature uses the Voice Recorder to allow a user to store up to two minutes of an incoming call with the following benefits:

- ❏ Reduced opportunities for error.
- ❏ Improved productivity.
- ❏ Store a message for later replay.

Examples

1. An address and route instructions whilst unable to write down details.
2. A description of a suspect can be replayed to a security team.

7.1.2 Voice Recorder

The Voice Recorder feature provides a paperless notepad which allows a user to record up to two minutes of personal messages. The benefits are:

- ❏ Record a Memo or Reminder.
- ❏ Improved productivity.
- ❏ Carry only one communications device rather than two; voice recorder device and radio replaced by radio.

Examples

1. Part numbers of a machinery part.
2. Details of a cargo consignment.
3. A brilliant idea for a great new way of working!

7.1.3 Voice Message

The Voice Message feature allows a user to record a greetings message which will be automatically played to a caller when the user is absent or unable to reply. The radio will auto-record the incoming call from the caller for the user to play-back later.

- ❏ Reduce time spent "Calling Back".
- ❏ Better teamwork - Improved Productivity.
- ❏ Better response from untrained callers.

For a complete list of Motorola option boards, please refer to your Price Pages.

7.2 Mandown Option Board

The Mandown Board is used to trigger an emergency procedure in situations where the radio is horizontal for longer than a pre-programmed time.

Alternatively, or in addition, the following trigger criteria can be programmed:

- ❏ Mandown (alarm if radio is horizontal for too long).
- ❏ Anti-Movement (alarm if radio is not moved after pre-programmed time).
- ❏ Movement (alarm if radio is moved).

Pre-alert tone and activation periods can be programmed in a wide range. Sensor activation angle and sensitivity are selectable to fit to the requirements of the user.

There is a separate Setup-Software OSS available to program this Board.

Benefits:

- ❏ High acceptance by user because all the extra hardware is inside the radio.
- ❏ Enhance personal security of user in dangerous situations.
- ❏ No special actions required by the user as there are various options to fit the board to the user needs.

For a complete list of Motorola option boards, please refer to your Price Pages.