Radius GM300

Mobile Radios
Operating Instructions
Contents

Computer Software Copyrights ............................................................ 2

Introduction ....................................................................................... 3
  Features List ....................................................................................... 3
  Radio Self-Check ............................................................................ 3
  Service ............................................................................................ 3

Dealer Programmable Features ...................................................... 4
  Field Programming Capabilities ...................................................... 4
  RapidCall Signalling ........................................................................ 4
  Time-Out Timer ............................................................................... 4

Accessories ....................................................................................... 6

Operating Instructions ..................................................................... 7
  8 Channel Operating Instructions ................................................... 7
  16 Channel Operating Instructions ............................................... 10
  16 Channel RapidCall Operating Instructions............................... 13
  Mobile (Field Unit) Selective Signalling ........................................ 14
  Control Unit Select Signalling ....................................................... 15
  DTMF ANI Operating Instructions................................................. 17
  Phone Memory List ....................................................................... 18

Licensing And Safety Information .................................................. 19
  Safety Standards .......................................................................... 20
  Safety Guidelines .......................................................................... 21

Installation Planning And Procedures ........................................... 23
  Equipment Testing and Maintenance ................................................ 23
  Description of Power Protection Circuitry ........................................ 23
  Installation Planning ...................................................................... 23
  Recommended Tools ........................................................................ 24
  Antenna Mounting ......................................................................... 24

Radio Mounting ............................................................................... 25
  Non-Locking Trunnion .................................................................. 25
  Floor Mount................................................................................... 25
  Quick Disconnect Slide Mount ........................................................ 25
  Extra Stability Mounting Tray ........................................................ 25
  Locking Trunnion .......................................................................... 25
  Remote Mount Capability ............................................................. 26

Begin Installation ............................................................................ 27
  DC Power Cable Installation ......................................................... 27
  Non-Locking Trunnion Installation ................................................. 29
Computer Software Copyrights

The Motorola products described in this instruction manual include copyrighted Motorola computer programs stored in semiconductor memories or other mediums. Laws in the United States and other countries preserve for Motorola certain exclusive rights for copyrighted computer programs, including the exclusive right to copy or reproduce in any form the copyrighted computer program. Accordingly, any copyrighted Motorola computer programs contained in the Motorola products described in this instruction manual may not be copied or reproduced in any manner without the express written permission of Motorola. Furthermore, the purchase of Motorola products shall not be deemed to grant either directly or by implication, estoppel, or otherwise, any license under the copyrights, patents, or patent applications of Motorola, except for the normal non-exclusive, royalty fee license to use that arises by operation of law in the sale of a product.
Introduction

Welcome to the Radius mobile family! Your choice of a Radius mobile means you have selected the highest of standards in design, quality, and performance. This manual is designed to acquaint you with all the features, care, and installation of the Radius mobile to better serve all your communication needs.

Radius Mobile Features

The following features are standard in all models:
- Synthesized, Wide-Band Operation
- Multiple Coded Squelch (Private-Line and Digital-Private Line) Capability
- Operator Selectable Channel Scan
- Field Programming Capability at Dealer
- Mil-Spec 810 C, D and E Performance
- Radius High Performance Compact Microphone with Hardware
- Non-Locking Trunnion with Hardware
- 10 Ft. Power Cable
- 12 V DC Negative Ground
- 3 Watt Internal Speaker
- Rotary Volume Control
- Time-Out Timer
- On-Hook Monitor Capability
- Mini-UHF Antenna Connector
- Operator’s Card and Owner’s Manual

Radio Self-Check

Every time the radio is turned on, it performs a functional self-check and if necessary, will sound a 5 second warning tone unlike the chirp tone normally heard at power-up. This is an indication that the radio is no longer operating at the exact parameters set in the factory or by a Motorola Radius dealer and should be serviced immediately.

Service

Because this unit contains a radio transmitter, most local governments prohibit anyone from making any internal adjustments to the transmitter unless specifically licensed to do so by government regulations. If your radio fails to operate or any operational difficulties should arise, contact your local Motorola Radius dealer.

Proper repair and maintenance procedures will assure efficient operation and long life for this radio.
Dealer Programmable Features

Field Programming Capabilities

The Radius GM300 mobile uses non-volatile memory to store customer unique information. If a frequency, squelch code or channel-slaved scan list needs to be changed, it can be done at a service location with Radio Service Software (RSS). The time-out timer can be disabled or changed without having to open the radio for reprogramming.

Scanning radios can also be programmed to enable Talkback Scan or the Priority Sample Rate can be changed. Finally, 16 channel radios are provided with RapidCall Signalling and Expanded Accessory Connector and can be programmed to include a wide variety of features and accessories.

RapidCall Signalling

16 Channel GM300 mobiles are available with RapidCall, a selective signalling package. Radios can be programmed with an impressive variety of features to improve your efficiency as radio users. These features include: Push-to-Talk Identification (PTT-ID), Emergency, Call Alert, Horn/Lights, Voice Selective Call, and Radio Check.

RapidCall mobiles can be made capable of sending a unit ID or Emergency Alert to a control unit or receiving a Call Alert, Horn/Lights, Voice Selective Call or Radio Check from a control unit.

Mobile radios can also be made capable of the control unit functions: receiving and displaying the incoming ID or Emergency and sending a Call Alert, Horn/Lights, Voice Selective Call or Radio Check.

In addition, RapidCall mobiles have an expanded accessory connector, providing greater flexibility in adding external hardware such as Public Address. Ask your Radius Representative for more information.

Time-Out-Timer

All models have a Time-Out Timer (TOT) that will terminate your transmission if you hold the PTT button down for 60 seconds (default setting). To warn the user, an alert tone will sound from the speaker about 4 seconds before the transmission is cut. The Time-Out Timer can be disabled or changed in duration from 1-255 seconds. See your local Motorola Radius dealer for more details.
Accessories

Radius offers several accessories to increase communications efficiency. Many of the accessories available are listed below, but for a complete list, consult your Radius dealer.

**Antennas:**
- HAD4006_R VHF 136-144 MHz, 1/4 wave roof mount
- HAD4007_R VHF 146-150.8 MHz, 1/4 wave roof mount
- HAD4008_R VHF 150.8-162 MHz, 1/4 wave roof mount
- HAD4009_R VHF 162-174 MHz, 1/4 wave roof mount
- HAD4014_R VHF 146-172 MHz, 3dB gain roof mount
- HAE4003_R UHF 450-470 MHz, 1/4 wave roof mount
- HAE4004_R UHF 470-512 MHz, 1/4 wave roof mount
- HAE4002_R UHF 403-430 MHz, 1/4 wave roof mount
- HAE4010_R UHF 406-420 MHz, 3.5dB gain roof mount
- HAE4011_R UHF 450-470 MHz, 3.5 dB gain roof mount
- HAE4012_R UHF 470-512 MHz, 3.5dB gain roof mount
- HAE4013_R UHF 494-512MHz, 3.5dB gain roof mount
- HAE4019_R UHF 450-470 MHz, 3.5 dB gain roof mount

**Microphones:**
- HMN3596_R Compact Palm Microphone with 7 foot cord
- HMN1035_R Heavy Duty Palm Microphone with 10.5 ft. cord
- HMN1037_R Touch-code Microphone with Hang-up Clip
- HMN3141_R Handset with Hang-up Cup
- HLN9559_R 7 ft. Coil Cord for Compact and Heavy Duty Microphones
- HLN9560_R 10.5 ft. Extended Coil Cord for Compact and Heavy Duty Microphones
- HLN9073_R Microphone Hang-up Clip (all microphones)

**Installation Accessories:**
- HKN4137_R VHF/UHF/800 MHz Low Power Cable
- HKN9557_R PL259/Mini-U Antenna Adapter - 8 inch cable
- HLN5282_R Mini-U Connector (all bands)
- HLN8027_R Mini - UHF to BNC Antenna Adapter
- HLN9100_R Three Point Mounting Bracket (for use with HLN9450)
- HLN9027_R In-dash Bezel Mounting Kit
- HLN9284_R Key Lock Mount
- HLN5189_R Non-locking Bracket
- HLN5226_R Extra Stability Mount (use with HLN5189)
- HLN9450_R 45 - 60 Degree Floor Mount Wedge (requires HLN9404)
- HLN9404_R Sleeve Mounting Bracket
- HLN8097_R Removable Slide Mount Tray Package
- HLN8098_R Radio Slide Mount Tray
- HLN8099_R Vehicle Slide Mount Tray
- HLN3007_R Remote Mount Kit (18 ft. length) (with 20 ft. power cable)
- HLN8144_R Remote Mount Kit (8 ft. length) (used with radio supplied power cable)
- HLN8413_R Slide Mount Tray Bracket
Accessories GM300 Mobile Radios

Control Station Accessories:
HKN9088_R Mini-U Antenna Adapter with 8 ft. cable (WSAPD)
HLN5292_R Base Tray for Control Station
HMN1038_R Desk Microphone (beige)
HMN3000_R Desk Microphone (black)
HKN4139_R Low Power Control Station Power Cable
(1-10 W/10-25 W models)
HKN9455_R High Power Control Station Power Cable (25-45 W models)
HPN4001_R Power Supply and Cable (25-40 W models)
HPN4002_R Power Supply and Cable (1-10 W/10-25 W models)

Accessories / Kits Interfacing with the 16 Pin Connector:
HKN9327_R Ignition Switch Cable
HSN8145_R 7.5 Watt External Speaker (for receiver audio)
HKN9969_R Accessory for Repeater Interface Communications Kit
(additional 3 foot, 16 conductor cable for connection to other
accessories)
HLN3333_R Repeater Interface Communications Kit
(includes interface box, mounting bracket, and two
16 conductor cables) (8 & 16 channel limited capability)
HLN9457_R Hardware Kit (includes 16 conn. pins, (9) 8” wires with pins &
extra housing)
TDN8300 DC Remote Adapter and Service Manual - 16 Channel only -
2 channel operation (order desktop controller separately)
TDN8301 Tone Remote Adapter and Service Manual - 16 Channel only -
2 channel operation (order desktop controller separately)

Public Address Accessories: 8 & 16 Channel Models:
HLN3145_R Public Address Kit (requires HSN1000 accessory) (includes
2 cables for mobile connection to Public Address box to speaker
 cables)
HSN1000_R 6 W Amplified External Speaker - for Public Address
(minimum 1 required)
HKN9324_R 15 ft. Public Address/Speaker Cable (one required for each
HSN1000)

Manuals:
6880902Z26 Operator’s card - 8 channel radios
6880902Z32 Service manual
6880902Z41 Operator’s card - 16 channel radios
6880902Z43 DTMF Operator’s card
TDN8198 i50X Radio-Telephone interconnect service manual
TDN8448 DC Remote adapter manual
TDN8449 Tone remote adapter manual