MOTOROLA

GP68

Operation Guide

MOTOROLA Radio Service Software
RSS Software GP60 Series

MOTOROLA Radio Service Software: MAIN MENU

The MAIN Menu is the top level of the program from which you select the type of function that you wish to perform. All selections are made via the "Function Keys", labeled F1 thru F10, on your keyboard. Press the ESCape key to return to the MAIN Menu from any where in the program.

After making a selection, you will be directed to similar menus and / or data entry screens for RF alignment or codeplug data.

KEYBOARD OPERATION

TAB (or ENTER):	Advance Cursor to Next Data Field
Shift TAB:	Backup Cursor to Last Data Field
UP / DOWN Arrow Keys:	Increment / Decrement Value or Selection
LEFT / RIGHT Arrow:	Move Cursor Within Data Field
INSERT:	Insert Space at Current Cursor Position
BACKSPACE:	Erase Data Within Field & Move Cursor Left
DELETE:	Erase Current Character
PAGE UP / PAGE DN:	Scroll Displayed Data UP or DOWN
HOME:	Move Cursor To Upper Left Data Field
F1:	Additional Information
F2 - F8:	Execute Labeled Function
F10:	Return to the PREVIOUS Menu
ESC:	Return to the MAIN Menu

MOTOROLA Radio Service Software: GP60 Series
Part # (3 1/2).....MVN4002/RVN4159 Model #.....
(5 1/4).....MVN4002/RVN4159 Serial #.....

Software Version..... Band..... Date .....

Manual #.....6804370J23/68P81086C08

RIB Part #.....RLN4008

CABLE Part #'s
AT->XT ADAPTER HKN9390
AT -> RIB.....HKN9216

PROGRAMMING STAND..HKN9102 (For CP50 only)

PROGRAMMING CABLE.MLN4074 (For GP60 Series only)

CLONING CABLE ....MLN4068 (For GP60 Series only)

SERVICE

All radio alignment procedures are accessed from the SERVICE menu. A radio must be connected to your computer via a RIB and cables and the radio turned on before you will be permitted to access the SERVICE screens.

!!! WARNING !!!

Do NOT switch radios in the middle of any SERVICE procedure. Always use the EXIT key to return to the previous menu screen before disconnecting the radio.

All SERVICE screens read and program the radio codeplug directly; You will be prompted at each SERVICE screen to save the new values before exiting the screen.

Function Key Descriptions:

F2 - The ALIGNMENT function is used to perform standard radio alignment on RSSI, Transmitter VCO Deviation, Low Port Modulation, Reference Oscillator Warp, Transmitter Power and Battery Threshold adjustment.

F6 - The BOARD REPLACEMENT function is used for servicing the radio when board repairs and/or replacement are required. Step-by-step instructions are given for all re-alignment procedures.

ALIGNMENT

Standard periodic alignment procedures are performed from the ALIGNMENT Menu. These include:

Receive Signal Strength Indicator Adjustment

Transmitter VCO Deviation Adjustment

Low Port Modulation

Reference Oscillator Warp Adjustment

Transmitter Power Adjustment

Battery Threshold Adjustment

RECEIVE SIGNAL STRENGTH INDICATOR ADJUSTMENT

This alignment screen allows the values for RSSI to be set. It will be used to configure how the RSSI indicator bars (if available) are to be lit.

NOTE: Pressing UP/DOWN Arrow key will update the minimum threshold value for RSSI to value display on screen plus one. Any other keys except functional keys will be ignored. Receiver Test Frequency must be applied prior to entering this screen.

DEVIATION

Transmitter Deviation is increased or decreased by first keying the radio via F6, and then by pressing the UP/DOWN arrow keys respectively. A relative deviation value will be displayed, but the actual transmitter deviation must be determined from your service monitor. The radio will transmit on the test frequencies displayed on the screen and should be terminated into a 50 ohm load or service monitor.

Using the UP/DOWN arrow keys, adjust Tx Deviation per your User's Manual. Press F6 again to de-key the radio, the value will be programmed into the radio.

NOTE: For fast changes, keyin the value and press the Enter button.

LOW PORT MODULATION

Low Port Modulation is increased or decreased by first keying the radio via F6, and then by pressing the UP/DOWN arrow keys respectively. A relative modulation value will be displayed. The radio will transmit on the test frequencies displayed on the screen and should be terminated into a 50 ohm load or service monitor.

Using the UP/DOWN arrow keys, adjust the modulation per your User's Manual.

Press F6 again to de-key the radio, and the value will be programmed into the radio.

NOTE: For fast changes, keyin the value and press the Enter button.

REFERENCE OSCILLATOR WARP

The Reference Oscillator is warped by first keying the radio via F6, and then by pressing the UP/DOWN arrow keys respectively. A relative warp position will be displayed, but the actual transmitter frequency must be determined from your frequency counter or service monitor. The radio will transmit on the test frequency displayed on the screen and should be terminated into a 50 ohm load or service monitor.

Using the UP/DOWN arrow keys, adjust the Reference Oscillator Warp to the displayed frequency. Press F6 again to de-key the radio, and the value will be programmed into the radio.

NOTE: For fast changes, keyin the value and press the Enter button.

TRANSMITTER POWER

Transmitter Power is adjusted by first keying the radio via F6, and then by pressing the UP/DOWN arrow keys to increase or decrease power respectively. A relative Tx Power value (not watts!) will be displayed, but the actual transmitter power output must be determined from your service monitor. The radio will transmit on the test frequency displayed on the screen and should be terminated into a 50 ohm load or service monitor.

Using the UP/DOWN arrow keys, adjust the Transmitter Power per your User's Manual. Press F6 again to de-key the radio, and the value will be programmed into the radio.

NOTE: For fast changes, keyin the value and press the Enter button.

BATTERY THRESHOLD ADJUSTMENT

This aligment screen adjusts the battery threshold value for NICAD and ALKALINE battery threshold used by the radio. RX values indicate battery threshold while in receive mode, while TX values indicate battery threshold while in transmit mode. The values determines the A/D value of the battery line input in either transmit or receive mode, below which will register a low battery condition for the battery type used.

PARTS REPLACEMENT

Refer to your RPG Service Manual for PARTS REPLACEMENT procedures.

Calibration is required after the following parts replacement:

Main Board

Refer to your RPG Service Manual for MAIN BOARD REPLACEMENT procedures.

Only one step (Step 2) is provided at the moment. More will be added in future as the need arises.

REFERENCE CRYSTAL DATA

Refer to your RPG Radio Service Software User's Manual for entering the Crystal Warping Data.

The GET/SAVE functions are used to transfer codeplug data from your radio into your computer in order for you to Change and View. GET/SAVE functions also permit you to PROGRAM modified data back into your radio.

!!! WARNING !!!

Do NOT turn off the radio or disconnect it from the computer while attempting to PROGRAM the codeplug. Interrupting the programming process WILL destroy the codeplug contents and completely DISABLE the radio!

Function Key Descriptions:

F2 - The READ CODEPLUG function reads the information (data) stored in the radio codeplug (EEPROM) and transfers it to the computer's memory.

F8 - The PROGRAM CODEPLUG function is used to transfer codeplug information from the computer to the radio codeplug.

The time required to PROGRAM a codeplug will depend directly on your computer type and the size of the codeplug you are programming. The status of the PROGRAM operation will be displayed on the screen.

CHANGE/VIEW

CHANGE/VIEW is a multi-level menu that is used to change, view, or modify codeplug features and option configurations. All codeplug parameters are classified as either RADIO-WIDE or CHANNEL related. CHANGE/VIEW permits access to each of these categories.

Unlike the SERVICE function, a codeplug must be loaded into your computer's memory (via the GET/SAVE functions) before you can access the CHANGE/VIEW screens. You may CHANGE/VIEW an archive file without a radio connected.

Warning: CHANGE/VIEW does NOT actually modify the radio codeplug data, but instead it modifies a copy of the data retrieved from the codeplug (or archive file) via the GET/SAVE functions.

After all CHANGE/VIEW modifications are completed, you MUST return to the GET/SAVE menu and PROGRAM the changes back into the radio or SAVE them to a new archive file. Otherwise the modifications will be lost when you turn off your computer.

CHANGE/VIEW RADIO-WIDE CONFIGURATION

RADIO-WIDE Configuration is used to CHANGE/VIEW radio parameters and options that affect overall radio operation, i.e. those not just related to a specific channel such as the time-out-timer.

Warning: CHANGE/VIEW does NOT actually modify the radio codeplug data, but instead it modifies a copy of the data retrieved from the codeplug (or archive file) via the GET/SAVE functions.

After all CHANGE/VIEW modifications are completed, you MUST return to the GET/SAVE menu and PROGRAM the changes back into the radio or SAVE them to a new archive file. Otherwise the modifications will be lost when you turn off your computer.

Dealer Programming Mode

When enabled, the user is allowed to modify channels frequencies, PL/DPLcodes, and other radio-wide settings via front panel prgrammability (FPP).

SYSTEM

This screen allows you to configure one or more signaling systems. These signaling systems will be used by the Call List and Mode screens to determine when and where decode or encode.

TYPE

When this screen is displayed the cursor is placed on the TYPE data field. The available system types are QCII (QUIK CALL) and GENERIC. The system types are selected by using the Up/Down arrow keys.

ID QCII

QCII ID corresponds to tones A and B. It requires at two unique tones. The defaults are 358.6 Hz (tone A) and 903.s Hz (tone B). The range is from 304.0 to 2470.0 Hz. Don't be alarmed if the frequency that you type in changes by a few Hertz. This change can occur because the program must calculate the nearest frequency that the radio can understand. You will find that the error will always be within the acceptable industry bandwidth.

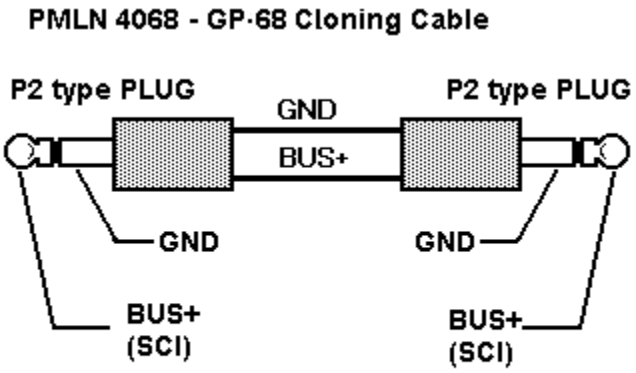
CALL FORMAT

This field is currently forced to be A-B and A-B/Long B.

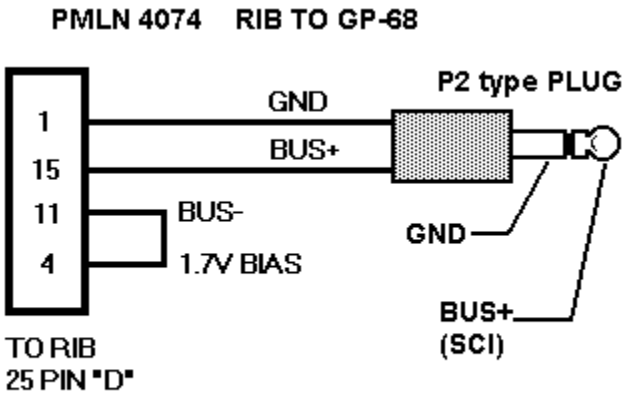
CALL TYPE

There are three different choices for this field. The Up/Down arrow keys will scroll through the following choices: Call Alert, Call Alert/Voice, and Voice Selcall. Call Alert leaves call indication at the receiving radio. Call Alert/Voice leaves a call indication and unmutes the loudspeaker of the receiving radio. Voice Selcall unmutes loudspeaker on receiving radio but does not leave any call indication. MDC-1200 does not allow Voice Selcall call type since Voice Selcall is an inherent feature of all MDC-1200 signalling systems.

Cloning Cable Pinout



Programming Cable Pinout



The programming cable is used for aligning the radio with the Motorola Radio Service Software (RSS). The RSS has NO other function than to service the radio, it is not for programming modes, editing repeater offsets, changing the scan list, changing frequencies, etc.

When you read the radio you only see some very basic information (bandsplit and model number).

MOTOROLA