

LBI-39008



Mobile Communications

**MONOGRAM™ SERIES
MGP 300 RADIO
PROGRAMMER
MHTSR3**

Programming Manual

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DESCRIPTION

The MGP 300 Programmer is used to program the personality EEPROM inside the Monogram Series MGP 300 Portable radio. The programmer is operated from a keyboard and the program is displayed on an alphanumeric display. See Figure 1.

The Programmer is powered from a 9-volt DC power supply provided with the programmer. The programmer is also equipped with a printer port. The power switch, the jack for the power supply and the printer port are all located on the rear of the programmer. See Figure 2.

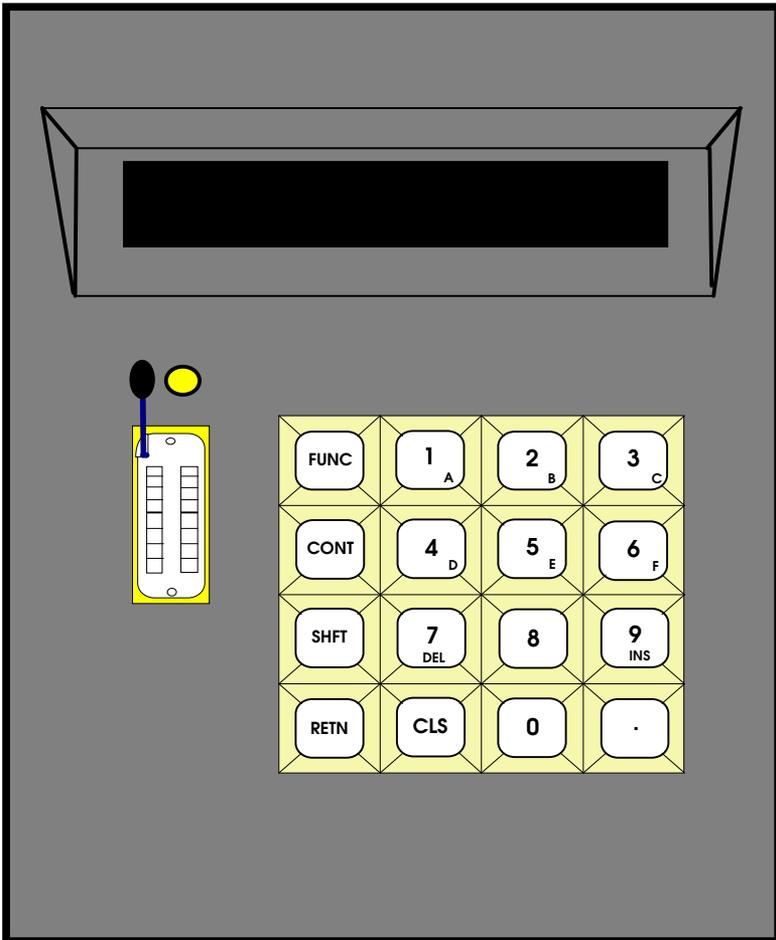


Figure 1 - MGP 300 Programmer (top view)

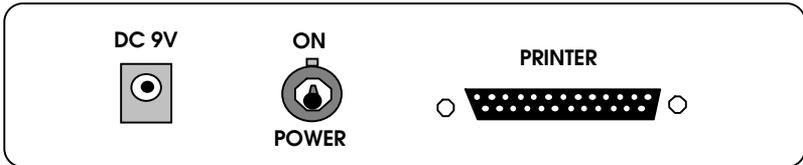


Figure 2 - Rear View Of Programmer

PROGRAMMING CONNECTOR

The MGP 300 programming connector is adjacent to the keyboard on the top of the unit. See Figure 3 for an illustration of the Textool connector and the Locked/Unlocked positions.

To program, you must remove the EEPROM from the radio and place it in the Textool on the top panel of the programmer. To remove the EEPROM from the radio and place it into the Textool; follow these steps:

1. Remove the EEPROM very carefully from the radio (take notice of notch location). See the radio Operator Manual (LBI-38995) or Maintenance Manual (LBI-38998) for location and detailed instruction on how to remove the EEPROM from the radio.
2. After making sure that the textool is in the "unlocked" position, place the EEPROM into the lower half of the textool with the notch pointing toward the display, then lower the lever to lock the EEPROM into place.
3. Leave the EEPROM locked in for the duration of the programming sequence(s), unless instructed to do otherwise. When programming is complete, raise the lever and carefully remove the EEPROM from the programmer. Replace the EEPROM in the DIP socket in the radio, making sure that the notch is located in the same place as when the EEPROM was removed.

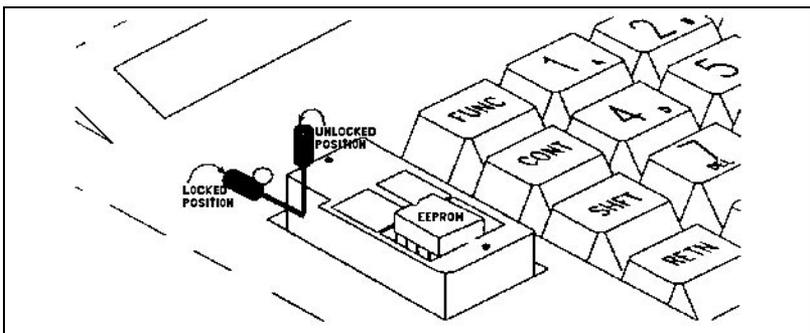


Figure 3 - Textool Connector

OPERATION

KEYBOARD

The Programmer is operated from the sixteen (16) keys which comprise the keyboard. These keys consist of the digits "0" through "9", "CLS", decimal point ".", return "RETN" and three alternate mode keys: (FUNC), (CONT) and (SHFT). Refer to Figure 1 for location.

Program execution is accomplished by using the keyboard to move through the various menus and fields. Figure 4 provides a flowchart of the MGP 300 program and Tables 1-8 provide a detailed description of all the menus and fields. The keyboard is also used for data entry. The function of the keys may vary depending upon the Mode the Programmer is in.

Mode Keys

The left-most digit on the MGP 300 display screen is a mode key status indicator. This decimal point remains lit at all times. There is a unique status character for each of the four keyboard modes:

1. "F." = Function key mode, set by pressing the "FUNC" key
2. "C." = Control key mode, set by pressing the "CONT" key
3. "S." = Alpha-Shift key mode, set by pressing the "SHFT" key
4. "." = Normal Input mode

Each of the three (3) alternate mode keys have the ability to replace the existing mode with its own. Operating in a toggle fashion, the key's input mode is retained after the key is released. When a mode key is pressed while its mode is active (determined by "F, C, or S" showing on the left of the screen), the mode will toggle back to the normal mode, (determined by "." showing on the left of the display screen). The function of the mode key may change depending upon whether the user is menu selecting or entering data.

Menu Selection

With the CONT (C) key activated, use the 8 (↑) key and the 0 (↓) key to step through the menus and fields. Select a menu or field by pressing the RETN key when the item is displayed. With the FUNC (F) key activated, press the CLS key to abort.

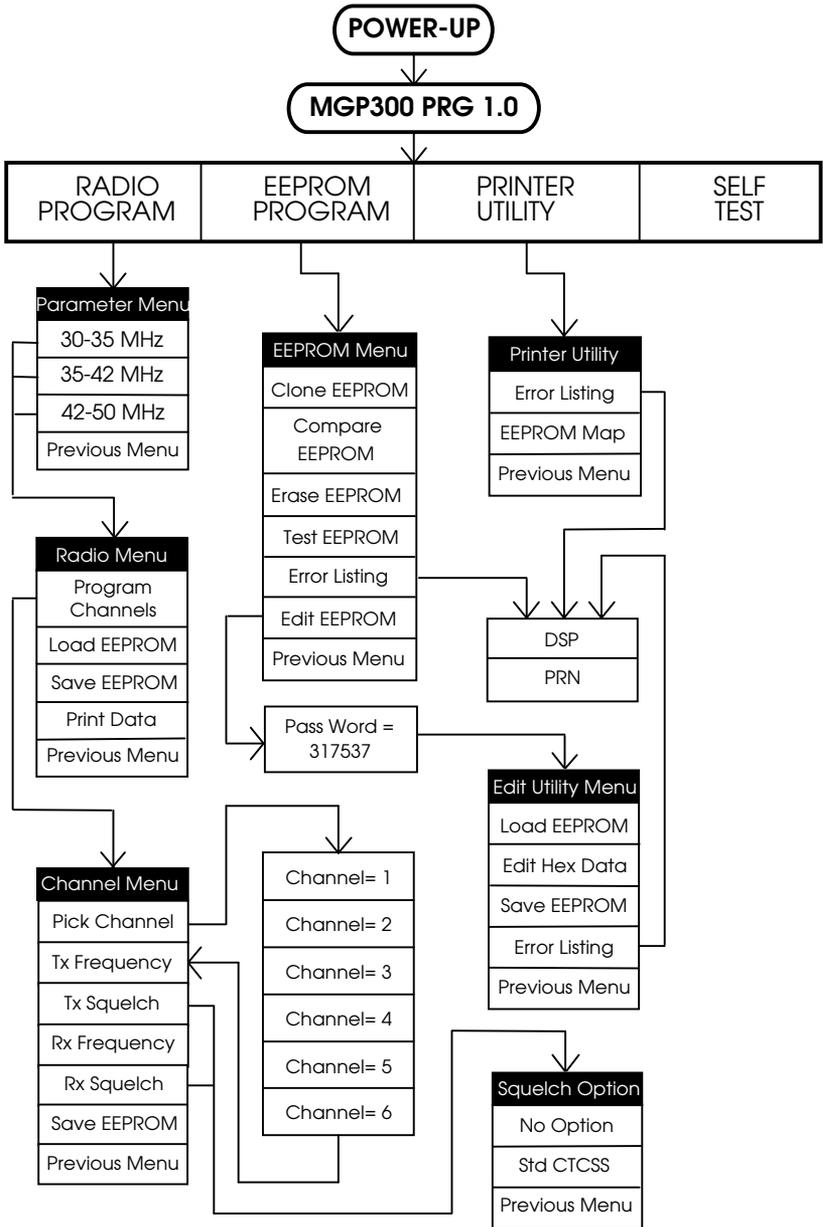


Figure 4 - MGP 300 Program Flowchart

Main Menu	
Radio Program	Sets up radio personality.
EEPROM Program	Provides miscellaneous EEPROM utilities.
Printer Utility	Provides miscellaneous printer utilities.
Self Test	Conducts programmer self-test.

Table 1 - Main Menu

Parameter Menu	
30-35 MHz	Selects the 30-35 MHz band split.
35-42 MHz	Selects the 35-42 MHz band split.
42-50 MHz	Selects the 42-50 MHz band split.
Previous Menu	Recalls the Main Menu.

Table 2 - Parameter Menu

Radio Menu	
Program Channels	Allows channel programming.
Load EEPROM	Uploads all programmed parameters from the radio to the programmer via the EEPROM programming socket.
Save EEPROM	Downloads all programmed parameters from the programmer to the radio via the EEPROM programming socket.
Print Data	Prints all programmed data for selected radio via the DB-25 printer connector in the rear of the MGP 300 .
Previous Menu	Recalls the Parameter Menu.

Table 3 - Radio Menu

Channel Menu	
Pick Channel	Enter the Channel to program.
Tx Frequency	Enter the transmit frequency (see Parameter Menu for frequency band split limits).
Tx Squelch	Select squelch options (see Squelch Options Menu).
Rx Frequency	Enter the receive frequency (see Parameter Menu for frequency band split limits).
Rx Squelch	Select squelch options (see Squelch Options Menu).
Save EEPROM	Programs EEPROM with current programmer parameters.
Previous Menu	Recalls the Radio Menu.

Table 4 - Channel Menu

Squelch Option Menu	
No Option	Normal squelch operation.
Std CTCSS	Standard CTCSS tones (refer to Appendix B for tone selections).
Previous Menu	Recalls the Channel Menu.

Table 5 - Squelch Option Menu

EEPROM Menu	
Clone EEPROM	Copies the contents of a master EEPROM to a slave EEPROM.
Compare EEPROM	Compares the contents of a master EEPROM to the contents of a slave EEPROM. All differences are flagged as errors.
Erase EEPROM	Erases all data from an EEPROM and verifies that it is blank.
Test EEPROM	Erases EEPROM and then writes test data. All conflicting recalled addresses are tagged as errors.
Error Listing	Toggles between display and printer output.
Edit EEPROM	Allows editing of EEPROM contents (see Edit Utility Menu).
Previous Menu	Recalls Main Menu.

Table 6 - EEPROM Menu

Edit Utility

Note: To enter this menu you must key in the Pass Word - 317537.

Load EEPROM	Uploads all programmed parameters from the radio to the programmer via the EEPROM programming socket.
Edit Hex Data	Allows editing of individual address 00 to 3F (hexadecimal).
Save EEPROM	Saves contents of hex data to EEPROM.
Error Listing	Toggles between display and printer output.
Previous Menu	Recalls EEPROM Menu.

Table 7 - Edit Utility Menu

Printer Utility Menu

Error Listing	Toggles between display and printer output.
EEPROM Map	Displays current contents of programmed EEPROM.
Previous Menu	Recalls Main Menu.

Table 8 - Printer Utility Menu

Help Function

The "HELP" function can be invoked any time clarification is needed regarding an input request.

1. Press the "FUNC" key until the "F" appears on the left side of the screen.
2. Press the "•" key to display the help message for the current input request.
3. Use the "L-Arrow" and "R-Arrow" keys to scroll the Help message across the display for full viewing.
4. Press the "RETN" key to exit the Help function.

Data Entry

Depending upon the input mode, the function of the keys may change when the program is requesting data. As mentioned previously, the left-most digit on the display is a status indicator of the present mode. Table 9 provides a guide to the function of the keys with respect to the input mode when the programmer is requesting data.

KEY	INPUT MODE	FUNCTION
RETN	Normal, FUNC, CONT & SHFT	Accepts the data entered.
CLS	Normal & SHFT	Inactive.
CLS	FUNC	Aborts data entry.
CLS	CONT	Activates the Left Arrow for movement across the data field.
1-6(A-F)	Normal	Enters the numbers 1-6.
1-6(A-F)	FUNC & CONT	Inactive.
1-6(A-F)	SHFT	Enters letters A-F in fields that accept alpha characters.
7	Normal	Enters the number 7.
7	FUNC & SHFT	Inactive.
7	CONT	Activates the delete key.
8	Normal	Enters the number 8.
8	FUNC, CONT & SHFT	Inactive
9	Normal, FUNC, CONT & SHFT	Enters the number 9.
0	Normal	Enters the number 0.
0	FUNC, CONT & SHFT	Inactive.
.	Normal	Enters a decimal point.
.	FUNC	Displays help for the current input request. Continue pushing the "." and the help message will scroll across the screen.

Table 9 - Data Entry Keyboard Description

APPENDIX A - ERROR MESSAGES

The following is an error message reference listing. It illustrates the types of errors that you may encounter when using the Programmer to program an MGP 300 radio. Remember to use the "•" (HELP) key to gain more information about the "current" function of the programmer.

Tx/Rx Frequency Input Errors	
FREQUENCY ERR	<i>Unable to convert characters in string to integer value, conversion value overflow or underflow.</i>
FREQ<MIN ERROR	<i>Frequency must be greater than or equal to the minimum radio frequency band limit.</i>
FREQ>MAX ERROR	<i>Frequency must be less than or equal to the maximum radio frequency band limit.</i>

Load EEPROM Errors	
PARITY ERROR	<i>Parity bit in EEPROM frequency data does not match that calculated by the programmer.</i>
FREQUENCY ERR	<i>Unable to convert EEPROM frequency data to integer value, conversion value overflow or underflow.</i>
CHECKSUM ERROR	<i>Checksum in EEPROM frequency data does not match that calculated by the programmer.</i>

General EEPROM Errors	
(aa)-dddd ERR	<i>The data (dddd) in the EEPROM at the address (aa) does not match with what is expected. Press the (DOWN ARROW) or (RETN) keys to increment to the next erroneous location. Press the (CLS) key to exit error listing function.</i>
(xx)-ERRORS	<i>The total number of EEPROM errors found is displayed in the (xx) field.</i>
ZIF SOCKET ERROR	<i>Failure to READ or WRITE to the EEPROM. Check to see that the EEPROM is placed in the socket properly and that the handle is in the "Locked" position.</i>

General Printer Errors	
PRINTER BUSY	<i>The printer is not responding to the programmer. Check to see that the printer is on line and that power is turned on . Check the printer cable. To abort the printing attempt, press the (CLS) key and return to the menu selection.</i>

APPENDIX B - CHANNEL GUARD TONES SUPPORTED

Channel Guard Tones (Hz)				
67.0	71.9	74.4	77.0	79.7
82.5	85.4	88.5	91.5	94.8
97.4	100.0	103.5	107.2	110.9
114.8	118.8	123.0	127.3	131.8
136.5	141.3	146.2	151.4	156.7
162.2	167.9	173.8	179.9	186.2
192.8	203.5	210.7	218.1	225.7
233.6	241.8	250.3		



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