SMP-4004C

maxon®

PROGRAMMING MANUAL

SMP-4004 C
PROGRAMMING INSTRUCTIONS

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INTRODUCTION

The SMP-4004 C software enables the parameters of Maxon's synthesized hand-held and mobile radios to be read, modified, programmed and printed.

SUPPORTED RADIOS

The SMP-4004 C software supports the following radio models:

SP-2000
SL-70W
SM-2000
SM-4000
SP-120
SP-130
SP-140

HARDWARE & SOFTWARE REQUIREMENTS

COMPUTER
The SMP-4004 C software requires an IBM® or compatible personal computer.

OPERATING SYSTEM
The program can be installed in a DOS (3.0 or later) or a Windows™ (3.1 or later) environment.

COMMUNICATION PORT
The SMP-4004 C software requires an available Communication Port. COM 1, 2, 3 or 4.

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INSTALLING ONTO A HARD DISK

1. Insert the SMP-4004 C diskette in a floppy disk drive.
2. At the command prompt, type the drive letter, followed by a colon(:) and a backslash(\), and the word INSTALL. For example, your screen might look like this:

[C:\]A:\INSTALL

3. Press ENTER.

RUNNING THE SOFTWARE FROM A FLOPPY DRIVE

1. At the command prompt, type the drive letter, followed by a colon(:) and a backslash(\), and the word SMP4004C. For example, your screen might look like this:

[C:\]A:\SMP4004C

2. Press ENTER.

• NOTE: When the SMP-4004 C software is run from a floppy drive, unless specified, the parameters will be saved on the same floppy from which the program was run. See "Set Path to Data Files" section under the "Getting Started" chapter for more information.

CONNECTING THE PROGRAMMING CABLE TO THE COMPUTER

Connect the 25 pin "D" type connector on the programming cable that has been selected, to the 25 pin serial port on the computer. If the computer has a 9 pin serial port, then a 9 pin to 25 pin adapter should be fitted between the 25 pin "D" type connector and the 9 pin serial port.

CONNECTING THE PROGRAMMING CABLE TO A RADIO

SM-2000

The SM-2000 Series mobile radios require the SMP-2000 programming cable. With the 25 pin "D" type connector installed on the computer, take the other end of the programming cable and insert it in the microphone jack located in the front panel of the radio. See Figure 1.

SM-4000

The SM-4000 Series mobile radios require the SPC-4000 programming cable. With the 25 pin "D" type connector installed on the computer, and the top cover of the radio removed, take the other end of the programming cable and insert it in the "Program Connector". Install the "Red Wire" on Pin 1 of the Auxiliary Option Relay Interface Jack. See Figure 2.

SP-2000 and SL-70W

The SP-2000 and SL-70W Series portable radios require the SMP-4004 programming cable. With the 25 pin "D" type connector installed on the computer, take the other end of the programming cable and insert it in the receptacle located on the top panel of the radio. See Figure 3.

SP-120, SP-130 and SP-140

The SP-120, SP-130 and SP-140 Series portable radios require the QPA-4000 programming cable. With the 25 pin "D" type connector installed on the computer, take the other end of the programming cable and insert it in the receptacle located on the opposite side of the PTT on the radio. See Figure 4.

Programming Cable	Used for Radio Models
SMP-4004	SP-2000 & SL-70W Series
SMP-2000	SM-2000 Series
SPC-4000	SM-4000 Series
QPA-4000	SP-120, SP-130 and SP-140 Series

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SMP-2000
USED FOR SM-2000 SERIES MOBILES

Figure 1

EEPROM SM-4000

6 **1**

Program Connector

Remove
Auxillary Option Relay Interface Board
and install the Red wire on Pin 1.

TOP COVER
REMOVED

Red Wire

SPC-4000
USED FOR SM-4000 SERIES MOBILES

Figure 2

SMP-4004
USED FOR SP-2000 & SL-70W
SERIES PORTABLES

Figure 3

LIFT UP
BLACK RUBBER FLAP

QPA-4000
USED FOR SP-120, SP-130 & SP-140
SERIES PORTABLES
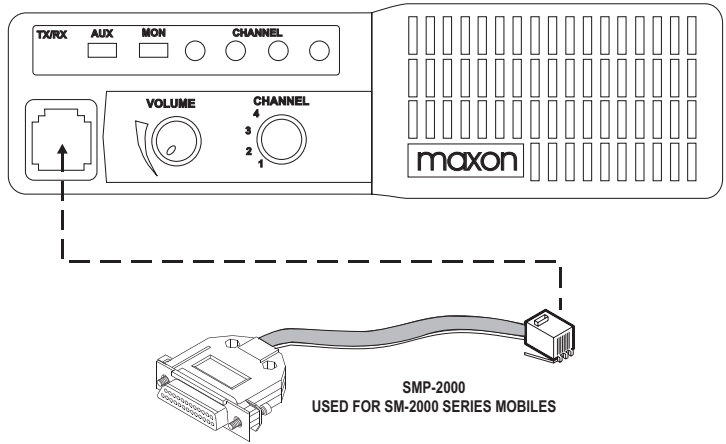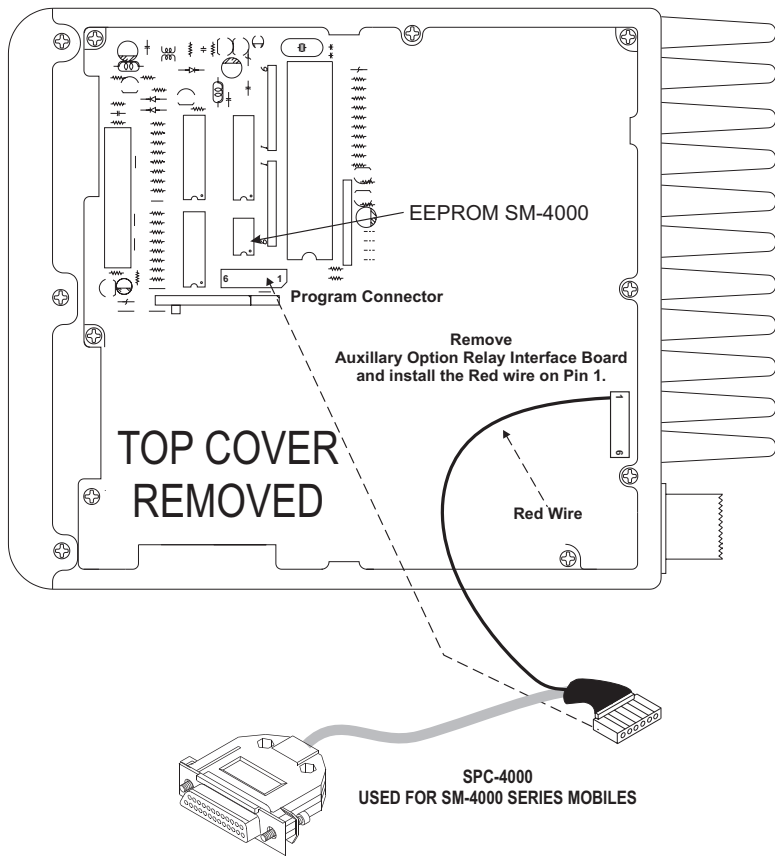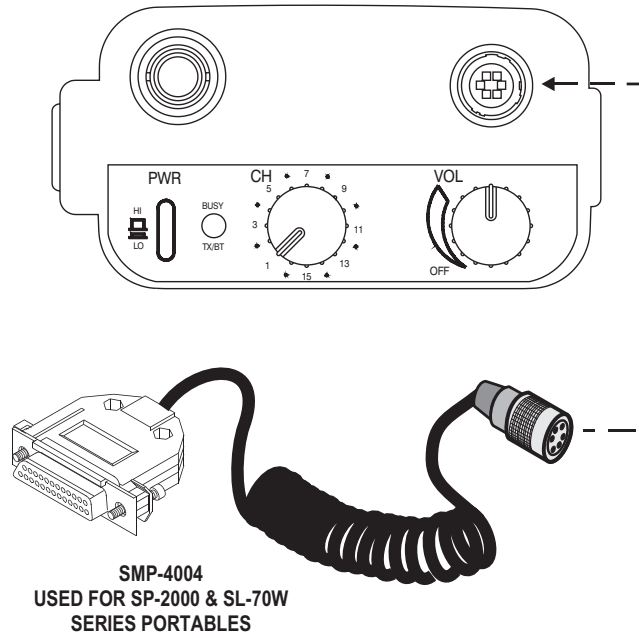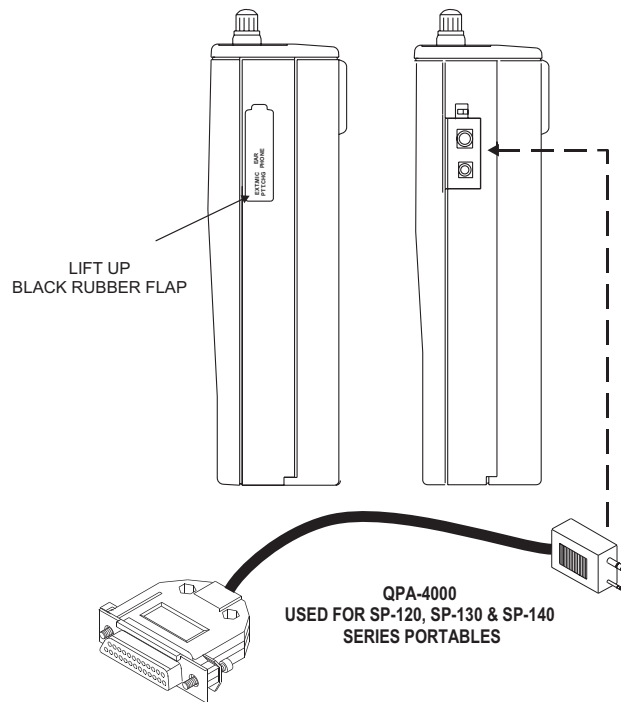
Figure 4

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MENUS AND DISPLAYS

The SMP-4004 C software enables the user to set up the parameters and then modify individual variables. This is done through the use of user-friendly menus that appear on the video display. There are three main menu pages;

A. Radio Model Selection Menu

B. Set Up and Select Data Source Menu

C. Programming

Keyboard

On each menu, commands or parameters may be selected. This is done by using the UP/DOWN/RIGHT/ LEFT arrow keys or typing the number associated with the command or parameter. The command or parameter is then selected by pressing the ENTER key. Pressing Escape at the initial menu will stop the programming and return to the computer's operating system. Pressing the Escape key on subsequent pages will result in the previous main menu page appearing or if a parameter value is being edited pressing Escape will restore the original value.

Help Screens

Help screens, where available, can be accessed by pressing the 'F1' Function key.

DOS

Using DOS commands, switch to the drive and directory containing the SMP-4004 C files. On the computer keyboard, type "SMP4004C" and press the ENTER Key.

• *NOTE: The following items are guidelines that should be used when the SMP-4004 C is to be used under Microsoft® Windows™. Refer to the Microsoft® Windows™ manual for more details.*

Microsoft® Windows™

The SMP-4004 C will work properly when run from Microsoft® Windows™ if the '/I' command line switch is used in the command to run the program (e.g.. SMP4004C /I). If the File, Run, command is being used from the Microsoft® Windows™ Program Manager, when prompted for the Command Line: type '[drive:] \ [pathname] \ SMP-4004C /I'.

If an icon is being created to run the SMP-4004 C make sure that the '/I' switch is in the command line by selecting the icon (but not running it) with the mouse, press the ALT+ENTER keys. When the Program Item Properties box is displayed, select the PROGRAM tab. In the Cmd line box, make sure the command line has the '/I' switch added.
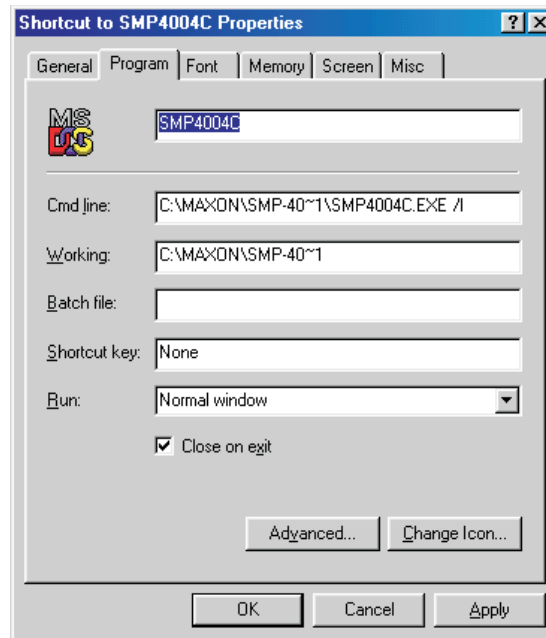
If the icon will be used to run a PIF file, use the Microsoft® Windows™ PIF editor to add the '/I' switch to the 'Optional Parameters:' box. FULL SCREEN option must be selected under DISPLAY USAGE.

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Now that the icon has been setup properly, use the Windows™ pick tool to select the SMP-4004C icon and double click on it. This will launch the programming software.

1. A radio selection menu will appear as the initial menu page. The initial menu page that will appear on the video display will be similar to the diagram shown below. Using the UP/DOWN arrow keys, select the radio model, as shown in the diagram below. Press the ENTER key.

```
---Monday 18th August 1997--------------------------------------------------------
    Maxon Mobile Radio - Personality Programmer SMP4004C    Ver. 2.XX
------------------------------------------------------------------------------------



                              -Radio Model-
                    SP-2550 10 channel  SM-4150
                    SP-2550  4 channel  SM-4150EX
                    SP-2550 16 channel  SM-4450EX
                    SP-2850 10 channel  SP-120V
                    SP-2850  4 channel  SP-120U
                    SP-2850 16 channel  SP-130V
                    SM-2150             SP-130U
                    SM-2450             SP-140V
                    SL-70WVM 16 channel SP-140U
                    SL-70WUC 16 channel




    --------------- Press <ESC> key to exit from MAXON PROGRAMMER ---------------
         Use ↑, ↓, → and ← keys to select radio model,  press <CR> to accept
------------------------------------------------------------------------------------
```

2. The "Setup & Select Data Source" menu will appear after the radio model has been selected. This menu will resemble the diagram shown below.

```
---Wednesday 9th October 1996-----------------------------------------------------
    Maxon Mobile Radio - Personality Programmer SMP4004C    Ver. 2.XX
--------------------------------SP-2850 16 channel---------------------------------



                    = Setup & Select Data Source=
                    1.  Select Communication Port
                    2:  Read Radio
                    3.  Set Path to Data Files
                    4:  Read Existing File
                    5:  Restore last file
                    6:  Create New File
                    7:  Delete A File
                    8:  Exit




    --------------- Press <ESC> key to return to previous menu ---------------
         Use ↑ and ↓ keys to select choice, press <CR> to accept
------------------------------------------------------------------------------------
    SP-2850  400 - 512 MHz, spacing = 25.0 kHz, sw ver C, port = COM1
```

Selecting Communication Ports

1. Using the UP/DOWN arrow Keys, select "1. Select Communication Port" from the menu and press the ENTER Key. Then select the appropriate communication port from the menu.

```
---Monday 18th November 1996-------------------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C    Ver. 2.XX
------------------------------SP-2850 16 channel-----------------------------

         Available Ports: COM1
         Comms now set on COM1:

                          ┌═Setup & Select Data Source═┐
                          │1.  Select Communication Port│
                          │2:  Read Radio               │
                          │3.  Set Path to Data Files   │
                          │4:  Read Existing File       │
                          │5:  Restore last file        │
                          │6:  Create New File          │
                          │7:  Delete A┌─────────┐      │
                          │8:  Exit    │1:COM1   │      │
                                       │2:COM2   │
                                       │3:COM3   │
                                       │4:COM4   │
                                       └─────────┘

---------------- Press <ESC> key to leave comm port intact  ----------------
            Use ↑ and ↓ keys to select choice, press <CR> to accept
------------------------------------------------------------------------------
   SP-2850  400 - 512 MHz, spacing = 25.0 kHz, sw ver C, port = COM1
```

2. Using the UP/DOWN arrow Keys, select an available Serial Communication Port. Press the ENTER Key.

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Read Radio

Programming parameters may be imported from two different data sources. The first data source is to read from a radio that has already been programmed. The programmer can then change the parameters to fit the radio to be programmed.

Using the UP/DOWN arrow Keys, highlight the "2. Read Radio" option then press ENTER. The following prompt will appear on the page.

For SP-2000, SM-2000, SL-70W, SP-120, SP-130, SP-140 Series

```
---Wednesday 9th October 1996-------------------------------------------------
  Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
--------------------------------SP-2550 16 channel----------------------------



              SWITCH OFF RADIO TO EXIT PROGRAMMING
                        OR   PRESS ANY KEY
                 Please ensure radio is connected
                   to computer and switched off
                             §§§
                 Please hold  down monitor button
                      then switch on radio.
                 The "BUSY" light will then flash.
               Please  release  monitor  button after
                        the FIRST flash.




------------ Turn radio off to escape from programming --------------------


------------------------------------------------------------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1
```

Follow the instructions in the above window, then momentarily push the monitor button on the Synthesized Hand-held.

•NOTE: Remove the top cover of the SM-4000 and locate the EEPROM. The EEPROM will be labeled with: "93C46" for SM-4000 and "93C56" for SM-4000EX. Refer to Figure 2.

For SM-4000 Series

```
---Wednesday 9th October 1996----------------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C    Ver. 2.XX
-------------------------------SM-4150--------------------------------------



                         Ready To READ Radio

                      Verify EEPROM is a 93C46.
                  Verify radio is connected to computer.
                  Please hold down (P)riority button
                          then switch on radio.
                  Radio is ready for data transfer when
                       radio displays "Prog".

                        Press 'Esc' to abort
                      Any other key to continue.




------------- Turn radio off to escape from programming ------------------

---------------------------------------------------------------------------
  SM-4150  136 - 174 MHz, spacing = 25.0 kHz, sw ver B, port = COM1
```

For SM-4000EX Series

```
---Wednesday 9th October 1996----------------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C    Ver. 2.XX
-------------------------------SM-4150EX------------------------------------



                         Ready To READ Radio

                      Verify EEPROM is a 93C56.
                  Verify radio is connected to computer.
                  Please hold down (P)riority button
                          then switch on radio.
                  Radio is ready for data transfer when
                       radio displays "Prog".

                        Press 'Esc' to abort
                      Any other key to continue.




------------- Turn radio off to escape from programming ------------------

---------------------------------------------------------------------------
  SM-4150  136 - 174 MHz, spacing = 25.0 kHz, sw ver B, port = COM1
  SM-4150  136 - 174 MHz, spacing = 25.0 kHz, sw ver B, port = COM1
```

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•NOTE: If the cable is not connected properly or is connected to the wrong port, an error message similar to the following will appear.

```
---Wednesday 9th October 1996--------------------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
---------------------------------SP-2550 16 channel----------------------------




            ┌──────────────────────────────────────────────────┐
            │                                                  │█
            │          Cannot detect programming lead          │█
            │                                                  │█
            │        Please verify connection to COM1          │█
            │          then press any key to continue          │█
            │               or <ESC> to quit                   │█
            │                                                  │█
            │                                                  │█
            │                                                  │█
            │                                                  │█
            │                                                  │█
            └──────────────────────────────────────────────────┘█
              ████████████████████████████████████████████████████


------------- Turn radio off to escape from programming ----------------------

--------------------------------------------------------------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1
```

Set Path to Data Files

If the Data Files are not to be stored in the same directory or on the same disk as the program files, use this choice to specify the path name of the directory in which they will be stored. The path entered using this screen will become the default path for future programming, until it is changed.

```
---Wednesday 9th October 1996--------------------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
---------------------------------SP-2550 16 channel----------------------------




                    ┌═══ Setup & Select Data Source═══┐
                    │1.   Select Communication Port   │█
                    │2:   Read Radio                  │█
           ┌════════════Enter Path to Data Files══════════════┐
           │C:\SMP4004C\                                      │█
           └══════════════════════════════════════════════════┘█
                    │6:   Create New File             │█
                    │7:   Delete A File               │█
                    │8:   Exit                        │█
                    └═════════════════════════════════┘█
           E.g.  a:\  or <CR> to accept  ███████████


----------------- Press <ESC> key to leave data path intact  -----------------

--------------------------------------------------------------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM2
```

•NOTE: The Path Name must be created prior to using this command (by using the DOS command for making a directory).

Read Existing File

This option allows the programmer to recall a file that has been saved in order to program additional radios or modify that file. When selected this option will produce a list of all the files located in the path set in the previous command. If no files are present a screen will briefly display, "Starting New File", and the appropriate parameter menu page will appear on the screen.

```
---Wednesday 9th October 1996----------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
--------------------------------SP-2550 16 channel-------------------

       1. Type a file name
       2. Display files only for Selected Model
       3. Find file for serial number
       MAXON1.CHN   SP-2550 16 ch 10/ 9/1996




----------------- Press <ESC> key to return to previous menu ---------------
          Use ↑ and ↓ keys to select choice, press <CR> to accept
---------------------------------------------------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1
```

1. Type a file name
   Enter file name exactly as it was saved (i.e. myfile.chn)
2. Display files only for *Selected Model*
   Will only display files that are on file for the *Selected Model*
   •Note Selected Model refers to the Model that was selected at the Radio Model Screen.
3. Find file for serial number
   After a radio is programmed, a prompt appears allowing the user to enter the radio's serial number. This is where the file can then be read by typing in the radio's serial number.

   •Note: If the file is not found, then the program may need to be run through DOS instead of Microsoft Windows™

Restore Last File

This option allows the programmer to restore the last file that was worked on.

Create New File

Use the UP/DOWN Arrow keys, select the "6. Create New File" option. Press the ENTER key. The appropriate parameter menu page will appear on the screen.

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Delete A File

This option allows the programmer to delete an existing data file. When selected, this option will produce a list of all of the files located in the path that was previously set. Once a file is selected, a warning screen will display the name of the file to be deleted.

1. Use the UP/DOWN Arrow keys, select the "1. Delete This File" option. Press the ENTER key. The file will then be deleted.

2. Use the UP/DOWN Arrow keys, select the "2. Don't Delete This File" option. Press the ENTER key. The option will then be aborted.

CHANGING PROGRAMMING PARAMETERS

After the programmer has retrieved programming parameters or created a new file, the parameters may be changed. Examples for this purpose can be seen in chapter "Example Channel And Features Entry Screens".

Setting RX or TX Frequencies (Valid for all Models)

An incorrectly entered RX or TX frequency in the following procedure will result in the error message, "Out Of Range Re-enter Frequency". The range of valid frequencies will appear on the bottom line of the display.

1. Using the UP/DOWN arrow Keys, select the channel number desired. Press the ENTER key, a 10 digit default RX frequency will appear, highlighted, in the RX frequency position of the channel number selected.

2. Type the required RX and TX frequencies in MHz. (i.e. If the frequency required is 400.125 MHz type the number as 400.125).

3. ***For SL-70W, SM-2000, SP-130 and SP-140 Series only***:

   Select the channel spacing for the current channel. If the "S"(default) spacing is selected, channel frequencies must be set at least 25 kHz apart, and they must also be divisible by 5 kHz or 6.25 kHz. If the frequency entered is not divisible by 5 kHz or 6.25 kHz, the program will give an alert and display a "Frequency incorrect" error box. The program will then automatically "correct" the frequency to be divisible by 5 kHz or 6.25 kHz. If the "n" spacing is selected, channel frequencies must be set at least 12.5 kHz apart, and they must also be divisible by 6.25 kHz. If the frequency entered is not divisible by 6.25 kHz, the program will give an alert and display a "Frequency incorrect" error box. The program will then automatically "correct" the frequency to be divisible by 6.25 kHz.

4. Press the ENTER Key. The "Select tone option RX or TX" will appear on the menu page.

   •NOTE: Choose "S"(25kHz) channel spacing for the SP-120. "N"(12.5kHz) channel spacing is not available on this radio.

Selecting RX or TX Tone Options (Valid for all Models)

The Tone Options enable CTCSS or standard DCS tone codes to be programmed for each RX and TX channel frequency. When CTCSS is programmed, only calls with the radio's specified code will be heard. During normal RX operation, the speaker will remain quiet until the correct CTCSS code is received and decoded. The status indicator will glow green, the speaker will open and the call will be heard. DCS works in exactly the same way as CTCSS except that a digital code is used instead of an continuous tone. The appropriate values for CTCSS or DCS are shown in table format when the CTCSS option or the DCS option has been selected.
The seven Tone Options are shown on the screen as follows:

```
---Wednesday 9th October 1996-----------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
-----------------------------SP-2550 16 channel-----------------------
       RX Frequency      TX Frequency    Option
1        154.625000       off                        Tx Time Out Off
2                                                      Tx Inhibit Off
3                                                     TX Delay   Off
4                          ----Select tone type----- ckout Off
5                          No change                 e Off
6                          No option                 f
7                          Select CTCSS tone         hannel Off
8                          Non-standard CTCSS tone #1 back Off
9                          Non-standard CTCSS tone #2 ff
10                         Select  DCS  tone
11                         External option           :
12                                                   ME Off
13                                         Rx ON  TIME Off
14                                         DELAY  TIME Off
15                                         Program/Print/Save
16
-------- Press <ESC> key to skip to next field ----------------------
Use ↑ and ↓ keys to select option required, press <CR> to accept

-----------------------------New File---------------------------------
 SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1  F1 = help
```

•NOTE: There are a maximum of two Non-Standard CTCSS Tones. Each can be set to values between 55 Hz and 260.0 Hz.

Select CTCSS Tone or Select DCS (EIA Standard) Tone (Valid for all Models)

•Note: When the Squelch option is selected and CTCSS or DCS is changed, the appropriate CTCSS or DCS screen will be displayed, the selection can then be made from that screen.

1. Using the UP/DOWN arrow Keys, select one of seven Tone Options, then press the ENTER key. If appropriate, the CTCSS or DCS table will appear on the menu page.
2. Use the UP/DOWN/RIGHT/LEFT arrow keys to select the required CTCSS tone or DCS code from the table on the screen.
3. Press the ENTER key.
4. Using the UP/DOWN arrow keys, move to another channel if necessary. If no more channel information is required press the RIGHT ARROW key only. The "Select Features" option box will appear on the parameter menu page.

Non-Standard CTCSS (Valid for all Models)

The radio will be capable of encoding and decoding two Non-Standard CTCSS tones. When programming a channel with CTCSS any frequency from 55 to 260Hz can be selected in .1 Hz increments. Type in the desired frequency and press the ENTER key.

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Selecting High/Low Power Options (Valid for SM-2000, SP-130 and SP-140 Series)

This option allows the use of High or Low power for each of the radio's programmed channels. When the Power column is selected, enter an H if you want that channel to operate using high power, or enter an L if you want the channel to operate using low power.

External Option Detect (Valid for SP-2000 (except 10 channel), SM-2000, SL-70, SP-120, SP-130 and SP-140 Series)

An input to the microprocessor is available, that will indicate (to the microprocessor) that the external option has decoded. This input is connected to the external option plug. The external option is selectable for each channel. If external option is selected while programming a channel, the external option plug is active when the channel is selected during operation of the unit.

   •NOTE: External option not available on SM-4000 Series & SP-2000(10 Channel) Series.

SELECT FEATURES

The radio operating parameters are programmed using the "Select Features" function. This menu is activated using the RIGHT arrow to enter the Select Features Menu. Those parameters that are not common to each radio are identified accordingly. Examples for this purpose can be seen in chapter "Example Channel And Features Entry Screens".

TX Time Out (Valid for all Models)

This parameter, when programmed, selects the maximum time that a transmission may last once the radio's PTT button has been pressed. The range of the TX Timer is from 10 to 990 seconds, in 10 second increments. If a value lower than 10 seconds is typed then "10 secs" will appear next to TX Time out. If the value typed is greater than 990 seconds then "990 secs" will appear next to TX Time out.

   •NOTE: The recommended setting is 180 seconds or less.

1.   Press the ENTER key. The TX Time out parameter will be displayed.

2.   Using the NUMERICAL keys, enter the appropriate value.

3.   Press the ENTER key. The value selected will appear against the TX Time Out parameter.

TX Inhibit (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

When TX Inhibit is used in conjunction with the TX Time Out, the user can not PTT again until the TX Inhibit programmed period time off occurs. After the time has expired an alert tone will be heard and the user may transmit again. The range of the TX Inhibit is from 5 to 60 seconds, in 5 second increments.

   •NOTE: Before the TX Inhibit can be used the TX Time Out must be active.

TX Delay (Valid for all Models)

When a CTCSS frequency is programmed the TX Delay function enables the transmitter to be active for a preset time after cessation of the CTCSS tone. This will help eliminate squelch tails.

1.   Using the UP/DOWN arrow keys, select the TX Delay parameter.

2.   Press the ENTER key, the operating state selected will appear against the TX Delay parameter.

Busy Channel Lockout (Valid for all Models)

When the Busy Channel Lockout function is programmed, the transmitter is disabled when an RX signal is being received. If the PTT button is pressed an audible alert will sound (depending on the beep tone setting) and the yellow BUSY, TX/BT will light when the transmitter is disabled. The operating state is Disabled or Enabled.

1. Using the UP/DOWN arrow keys, select the Busy Channel Lockout parameter.

2. Press the ENTER Key, the operating state selected will appear against the Busy Channel Lockout.

Marked Idle (Valid for all models except SM-4000)

Marked idle allows transmission only when receiving the radio's CTCSS Tone or DCS code. This function works in conjunction with Busy Channel Lockout. The operating state is Disabled or Enabled.

•NOTE: Before the Marked Idle can be used the Busy Channel Lockout must be active.

1. Using the UP/DOWN arrow keys, select the Marked Idle parameter.

2. Press the ENTER key, the state selected will appear against the Marked Idle parameter.

Monitor (Valid for all models except SM-4000 Series)

When enabled, the radio squelch circuit is by-passed and the signal on any programmed channel may be monitored whenever the monitor button is pressed. If the user is to be prevented from monitoring conversations then the monitor function should be disabled. The operating state should be Disabled or Enabled.

1. Using the UP/DOWN arrow keys, select the Monitor parameter.

2. Press the ENTER key, the operating state selected will appear against the Monitor parameter.

Priority Channel (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

A priority channel can be selected while programming the radio. Only one channel can be chosen as a priority channel. This channel will be periodically checked or looked back to while on any channel in the Lookback list.
1. Using the UP/DOWN arrow keys, select the Priority Channel

2. Press the ENTER key. The priority channel menu will open and display the current Priority Channel. Use the UP/DOWN arrow Keys to select the Priority Channel.

3. Press the ENTER key. A "P" will appear to the left of the RX frequency indicating the Priority Channel.

Priority Channels (Valid for SM-4000 and SM-4000EX Series)

Two priority channels can be selected. Priority channels will be periodically checked or looked back to while on any other channel. This option is enabled when the PRIORITY SCAN button is pressed.

1. Using the UP/DOWN arrow Keys, select Priority Channel 1 or 2.

2. Press the ENTER Key. The priority channel menu will open and display the current Priority Channel. Use the UP/DOWN arrow Keys to select the Priority Channel.

3. Press the ENTER Key. A "P" will appear to the left of the RX frequency indicating the Priority Channel.

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Priority Channel / Lookback (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

Any channel, whether it is in the scan list or not, can be designated as a Lookback channel. When a channel is designated as a Lookback channel and the channel is selected the radio will periodically Lookback at the priority channel during reception on the selected channel. The radio does not have to have a scan list to have this function. The radio must have a priority channel selected for the function to work.

1. After the Priority Channel has been selected, a Lookback Time (1-15 Sec) must be given. (Recommended setting is 5-15 Sec.)
2. Press the ENTER key. The Lookback list menu bar will open. The UP/DOWN arrow keys will move the highlight bar. Use the Space key to select Lookback Channels.
3. Press the ENTER key. An "L" will appear to the left of the RX frequency indicating Lookback Channel.
4. When the programmer has completed adding channels to the Lookback list, Press the ENTER key to finish the selection.

   •NOTE: More than one channel must be programmed with RX frequencies for the Lookback list menu bar to open. If the ESC key is pressed at any time, before the final ENTER key is pressed, the original Lookback List will be restored and all changed data will be lost.

Lookback Time (Valid for SM-4000 and SM-4000EX Series)

When the radio is in the Priority Scan mode, the priority channel(s) will be checked for carrier every "Lookback Time" seconds. The Lookback Time can be set from 0.25 to 4.0 seconds and may be selected in 0.25 second increments.

1. After defining at least one priority channel, use the UP/DOWN arrow keys to highlight the Lookback Time.
2. Press the ENTER key to cycle through the available time settings.
3. When the desired time is displayed, use the arrow keys to select another feature or press the ESC key. Pressing the ESC key will will leave the lookback time that was last displayed in the lookback time field and return you to the channel editing screen.

Scan Mode (Valid for SP-2000 (except 10 channel), SM-2000,SL-70W, SP-120 Series, SP-130 and SP-140)

When the Scanning Option has been set to "On", the following screen will appear:

```
---Thursday 10th October 1996---------------------------------------------
     Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
--------------------------------SP-2550 16 channel-------------------------
       RX Frequency  Option  TX Frequency   Optio╔═══ Select Features ═══╗
 1      150.000000    off     150.000000     off ║1. Tx Time Out Off      ║
 2                                                ║   Tx Inhibit Off       ║
 3                                                ║2. TX Delay   Off       ║
 4                                                ║3. Busy ch lockout Off  ║
 5                                                ║   Marked Idle Off       ║
 6                                                ╟──────Scanning Features──╢
 7                                                ║1. Scan Channel = Off   ║
 8                                                ║2. Scan List            ║
 9                                                ║3. Scan Delay Off       ║
10                                                ║4. Scan Speed Off       ║
11                                                ║5. Carrier + tone On    ║
12                                                ║6. Scan: Normal Scan Tx ║
13                                                ║7. LED indicator On     ║
14                                                ║                        ║
15                                                ║9. Program/Print/Save   ║
16                                                ╚════════════════════════╝
--------- Press <ESC> key to return to Select Features ----
       Use ↑ and ↓ keys to select Scanning option, press <CR> to enter values

--------------------------MAXON5.CHN:  SAMPLE----------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, F1 =help, port = COM1
```

Scan Channel (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

Any receive channel can be selected as the "Scan Channel". When the radio is switched to the scan channel it will be put in the scan mode. Only one channel can be used as the scan channel.

1. Using the UP/DOWN Arrow keys, select the scan channel on the menu.

2. Press the ENTER key. The Scan Channel window will open and display the current Scan Channel. Using the UP/DOWN Arrow keys, select the desired scan channel.

3. Press the ENTER key. A "C" will appear to the left of the RX frequency indicating the Scan Channel.

Scan List (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

A 'Scan List' is built during the programming process by selecting the channels to be scanned. When the channel selector knob of the radio is switched to the scan channel (set during the programming process), all the channels in the scan list are periodically checked for calls.

1. A channel is added to the Scan List by selecting the "2. Scan List" option and Pressing the ENTER key.

2. This will open the menu used to mark the channels as a Scan List Channel. Use the Space Bar or letter "S" to tag or untag the channels desired and press the ENTER key.

SMP-4004 C

PROGRAMMING INSTRUCTIONS

Scan List (Valid for SM-4000 and SM4000EX Series)

A "Scan List" is built by selecting the channels to be periodically checked for carrier when the radios scan button is used to enable scan.

1. A channel is added to the Scan List by selecting the "6. Scan List" option and Pressing the ENTER key.

2. This will open the menu used to mark the channels as a Scan List Channel. Use the Space Bar or letter "S" to tag or untag the channels desired and press the ENTER key.

Scan Delay Time (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

The Scan Delay time is the time that the unit remains on a scanned channel after receiving or transmitting on that channel. The time is programmable from 1 to 10 seconds in increments of 1. (Recommended setting is at least 4 seconds).
The Scan Delay time will be reset each time the radio receives a transmission or the PTT is pressed. As long as conversation continues on a channel and the Scan Delay time does not expire, the unit will not resume scanning.

1. Using the UP/DOWN Arrow keys, select the Scan Delay Time on the menu.

2. Press the ENTER key. Enter the Scan Delay Time from 1 to 10 seconds in increments of 1.

3. Press the ENTER key. The Scan Delay Time will be shown on the Scan menu screen.

Scan Delay Time (Valid for SM-4000 and SM4000EX Series)

The Scan Delay time is the time that the unit remains on a scanned channel after receiving or transmitting on that channel. The time is programmable from 0.5 to four seconds in 0.5 second increments (Recommended setting is at least 4 Sec.). To change the Scan Delay Time:

1. Using the UP/DOWN Arrow keys, select "Scan Delay".

2. Press the ENTER key to cycle through the available time settings.

3. When the desired time is displayed, use the Arrow keys to select another feature or press the ESC key.

Scan Speed (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

The amount of time the radio takes during scan to examine each channel in the 'scan list' for a call. The range is between 50ms to 2 sec. in 10 ms increments. The default value is 100 ms.

1. Using the UP/DOWN Arrow keys, select the Scan Speed on the menu.

2. Press the ENTER key. Enter the Scan Speed from 50 ms to 2 seconds in increments of 10 ms.

3. Press the ENTER key. The Scan Speed will be shown on the Scan menu screen.

Scan Wait (Valid for SM-4000 and SM4000EX Series)

If carrier is detected on a channel that has been selected as a scan channel, as described in "Scan List (Valid for SM-4000 and SM4000EX Series)" on the previous page, the radio will pause on that channel. The amount of time programmed as "Scan Wait" seconds will pass before the radio will begin scanning again. This will give the radio time to check for a valid tone. If a tone is detected, scanning will not resume until the carrier is no longer detected. Times from 0 (disabled) to 4.0 seconds may be selected in 0.25 second increments.

1. Using the UP/DOWN Arrow keys, select the Scan Wait.

2. Press the ENTER key to cycle through the available settings.

3. When the desired time is displayed, use the Arrow keys to select another feature or press the ESC key.

Carrier + Tone (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

If Carrier + Tone is turned ON, the radio stops scanning and unmutes only on 'scan list' channels that have a carrier and valid tone present. If Carrier + Tone is turned OFF, the radio scanning will stop on 'scan list' channels that have a carrier present, regardless of tone.

1. Using the UP/DOWN Arrow keys, select the Carrier + Tone option on the menu.

2. Press the ENTER key. The Carrier + Tone operating state will be shown on the Scan menu screen.

    •Note: If DCS Tone Option is selected, turn carrier + tone option ON.

Scan TX Parameters (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W,SP-120, SP-130 and SP-140 Series)

If the PTT is pressed while on the scan channel during scan operation the radio will transmit according to the programming of the following options:

1. Normal Scan TX

2. Priority Scan TX

3. Priority Only TX

4. RX Only No TX

When option "6. Scan" is selected the status of this option can be changed by using the ENTER key. Each time the ENTER key is pressed the operating state will advance to the next selection of the four options. The four choices are as follows:

SMP-4004 C
PROGRAMMING INSTRUCTIONS

1. Normal Scan TX

This option allows transmission when receiving a call when in scan mode. If the PTT is pressed without a call you will get two beeps and the red LED will flash. If the beeps tone is programmed off you will have the LED as a indicator. The radio will not transmit and there will be no priority scan.

2. Priority Scan TX

Allows transmission when you received a call depending on scan delay time. If you are in scan mode it will allow transmission on the priority channel. The priority scan will be on and work with the look back time.

3. Priority Only TX

Allows for transmission on the priority channel only. Priority scan will be on and work with the look back time.

4. Rx Only-No TX

This will not allow you to transmit while on the scan channel. If a transmission is attempted you will get two beeps and the LED will flash. Priority scan and look back will be disabled.

LED ON/OFF (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

The LED on the top of the radio can flash at the programmed scan speed while scanning. If the LED is programmed to ON, the LED will flash. If it is programmed to OFF, the LED will not flash.

Beep Tone ON/OFF (Valid for SP-2000 (except 10 channel), SM-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

When this function is set to ON, all tones and warning beeps will be heard through the speaker of the radio. When this function is OFF, no beeps or tones will be heard through the speaker. When Beep Tone is OFF, warnings will only be visible by LED on top of radio.

Power-save (Valid for SP-2000, SL-70W, SP-120, SP-130 and SP-140 Series)

The values are Disable, RX "off" time. RX "on" time and delay time.

RX "Off Time"

RX "Off Time" is setup for 0.10 to 3.2 seconds in increments of 0.05 seconds.   This is the time the unit is off and not looking for a carrier to be received. The default is 0.40 seconds.

RX "On Time"

RX "On Time" is setup for 0.05 to 0.2 seconds in increments of 0.01 seconds. This is the time the radio is looking for a carrier to be received. The default is 0.15 seconds.

Delay Time

"Delay Time" is the time the unit is on standby after you receive a call or you transmit a call. This can be setup for 1 to 8 seconds in increments of 1 second. The default is 5 seconds.

1. Using the UP/DOWN Arrow keys, select the power-save parameter.

2. Press the ENTER key to select the RX off time.

3. Type the required value on the keyboard.

4. Press the ENTER key. The value selected will appear against the RX off time, and the entry line will appear on the menu.

The RX on time and delay time are entered in the same manner as step 3 and 4.

Hanger Function (Valid for SM-2000 Series)

With the hanger function ON, if the microphone is ON-HOOK in the hanger, the radio will unmute and receive a call only when a carrier and valid tone are present. If the microphone is OFF-HOOK, the radio will unmute any time a carrier is present. With the hanger function ON, the user will also not be allowed to PTT while the microphone is ON-HOOK.

With the hanger function OFF, the radio will require the presence of a carrier and valid tone in order to unmute and receive a call. The user is also allowed to PTT while the microphone is ON-HOOK

Call Waiting (Valid for SM-2000 Series)

With call waiting ON, if the radio receives a valid call and the user does not respond by pressing the PTT within approximately one minute, then the TX/RX LED will flash to indicate that a call was received. When the user presses the PTT after a CALL WAITING indication, the LED will stop flashing. CALL WAITING OFF disables this feature.

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PROGRAMMING INSTRUCTIONS
Program / Print / Save

When all the required channel and radio operating parameters have been entered or changed the information may be saved to a file, programmed into the radio, or printed.
Follow the instructions on the screen for each option selected.

```
---Wednesday 9th October 1996-------------------------------------------------
   Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
-----------------------------SP-2550 16 channel------------------------------
      RX Frequency  Option  TX Frequency   Optio╔═══ Select Features ═══╗
1      154.625000    off     154.625000     off ║1. Tx Time Out Off      ║
2                                               ║   Tx Inhibit Off       ║
3                                               ║2. TX Delay    Off      ║
4                                               ║3. Busy ch lockout Off  ║
5                                               ║   Marked Idle Off      ║
6                                               ║4. Monitor Off          ║
7                                               ║5. Priority Channel Off ║
8                                               ║   Pr Lookback Off      ║
9                                               ║6. Scanning Off         ║
10                                              ║7. Beep On              ║
11                                              ║8. ╔═Program/Print/Save═╗║
12                                              ║   ║1. Program Radio     ║║
13                                              ║   ║2. Program & Verify  ║║
14                                              ║   ║3. Print data        ║║
15                                              ║9. ║4. Save data to disk ║║
16                                              ║   ║5. Change data       ║║
-------- Press <ESC> key to return to Select Features═══════════════════╝
         Use ↑ and ↓ keys to select feature, press <CR> to enter values

--------------------------------New File------------------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz,          , port = COM1
```

Program Radio
The programming prompt will appear on the screen. Follow the instructions on the prompt.

   •Note: If the instructions disappear on the screen, you may be running under Windows™ and may not have the program running full screen. If so, press Alt-Enter and this should make the program run full screen and correct the problem.

After the radio has been programmed, a prompt will appear asking you to enter a serial number. This is where a serial number can be entered for the serial recall feature See "Read Existing File" on page 13.

Program & Verify
Operates just like the Program option, but goes through a verification of the program that was stored in the radio.

Print Data
Print the current program to the printer that is attached to LPT1.

   •Note: If you are printing through a network in a Windows™ Operating system, the printer port will have to be redirected to your network printer. See your Windows™ documentation for further information.

Save Data to Disk
Allows the current program to be saved to the disk.

Example of SP-2000 Series

```
---Wednesday 9th October 1996-----------------------------------------
     Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
---------------------------SP-2550 16 channel-------------------------
        RX Frequency  Option  TX Frequency  Option
1        154.625000   127.3'  155.225000    123.7"   Tx Time Out Off
2        152.480000   731     158.100000    261          Tx Inhibit Off
3        157.740000   off     152.840000    off      TX Delay   Off
4       ██████████████████████████████████████       Busy ch lockout Off
5                                                     Marked Idle Off
6                                                     Monitor Off
7                                                     Priority Channel Off
8                                                         Pr Lookback Off
9                                                     Scanning Off
10                                                    Beep On
11                                                    Power Save:
12                                                     Rx OFF TIME Off
13                                                     Rx ON  TIME Off
14                                                     DELAY  TIME Off
15                                                    Program/Print/Save
16
-------- Press <ESC> key to return to previous menu --------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
   <INS> to copy previous line, → to select Features,   <F2> to Printscreen
----------------------------------New File----------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1  F1 = help
```

Example of SP-2000 10 Channel

```
---Friday 25th October 1996------------------------------------------
     Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
---------------------------SP-2550 10 channel-------------------------
        RX Frequency  Option  TX Frequency  Option
1        154.625000   off     154.625000    off      Tx Time Out Off
2        153.575000   67.0    158.250000    67.0     TX Delay   Off
3        155.000000   off     155.000000    off      Busy ch lockout Off
4                                                     Marked Idle Off
5                                                     Monitor On
6                                                     Power Save:
7                                                      Rx OFF TIME Off
8                                                      Rx ON  TIME Off
9                                                      DELAY  TIME Off
10                                                    Program/Print/Save
11
12
13
14
15
16
-------- Press <ESC> key to return to previous menu --------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
   <INS> to copy previous line, → to select Features,   <F2> to Printscreen
----------------------------------New File----------------------------
  SP-2550  136 - 174 MHz, spacing = 25.0 kHz, sw ver B, port = COM1  F1 = help
```

SMP-4004 C
PROGRAMMING INSTRUCTIONS
Example of SL-70W Series

```
---Wednesday 9th October 1996------------------------------------------------
    Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
----------------------------SL-70WVM 16 channel------------------------------
       RX Freq Width Option  TX Frequency   Option
1      148.0250 S    off      148.0250       off    Tx Time Out = 180 Secs
2      162.0250 S    off      162.0250       off       Tx Inhibit = 5 Secs
3      173.9250 S    off      173.9250       off    TX Delay    On
4      148.0250 S    off      148.0250       off    Busy ch lockout On
5      162.0250 S    off      162.0250       off    Marked Idle Off
6      173.9250 S    off      173.9250       off    Monitor Off
7      159.5000 S     67.0    159.5000        67.0  Priority Channel Off
8      159.5000 S    100.0    159.5000       100.0     Pr Lookback Off
9      159.5000 S    250.3    159.5000       250.3  Scanning Off
10     159.5000 S    047      159.5000       047    Beep On
11     159.5000 S    116      159.5000       116    Power Save:
12     159.5000 S    100.0    159.5000       100.0   Rx OFF TIME Off
13     160.5500 S    047      160.5500       047    Rx ON   TIME Off
14     165.5500 S    off      165.5500       off     DELAY   TIME Off
15     165.5500 S    100.0    165.5500       100.0  Program/Print/Save
16     165.5500 S    off      165.5500       off
-------- Press <ESC> key to return to previous menu ------------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
   <INS> to copy previous line, → to select Features,   <F2> to Printscreen
----------------------------MAXON2.CHN:  SAMPLE------------------------------
  SL-70 V  136 - 174 MHz, Wideband Portable , sw ver C, port = COM1  F1 = help
```

Example of SP-120 Series

```
---Thursday 10th October 1996------------------------------------------------
    Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
----------------------------------SP-120V------------------------------------
       RX Freq Width Option  TX Frequency   Option
1      150.0000 S    off      150.0000       off    Tx Time Out Off
2      160.0000 S    off      160.0000       off       Tx Inhibit Off
3      152.4800 S    off      152.4800       off    TX Delay    Off
4      167.7500 S    off      167.7500       off    Busy ch lockout Off
                                                    Marked Idle Off
                                                    Monitor Off
                                                    Priority Channel Off
                                                       Pr Lookback Off
                                                    Scanning Off
                                                    Beep On
                                                    Power Save:
                                                     Rx OFF TIME Off
                                                     Rx ON   TIME Off
                                                     DELAY   TIME Off
                                                    Program/Print/Save

-------- Press <ESC> key to return to previous menu ------------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
   <INS> to copy previous line, → to select Features,   <F2> to Printscreen
----------------------------------New File----------------------------------
  SP-120 V  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1  F1 = help
```

Example of SM-2000 Series

```
---Wednesday 9th October 1996----------------------------------------------
      Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
----------------------------------SM-2450----------------------------------
          RX Freq Width Option  TX Freq Power  Option
1  SP     461.9750 S     047     461.9750 L      047    Tx Time Out = 180 Secs
2  SL     463.2500 S     754     463.2500 L      754       Tx Inhibit = 5 Secs
3  L      465.8250 S     023     465.8250 L      023    TX Delay   On
4  LC     468.5500 S     754     468.5500 L      754    Busy ch lockout On
                                                        Marked Idle Off
                                                        Monitor On
                                                        Priority Channel =  1
                                                           Pr Lookback =  4 Secs
                                                        Scanning On
                                                        Beep On
                                                        Hanger Function On
                                                        Call Waiting On
                                                        Program/Print/Save


-------- Press <ESC> key to return to previous menu ----------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
    <INS> to copy previous line, → to select Features,   <F2> to Printscreen
-------------------------------New File-----------------------------------
   SM-2450  400 - 512 MHz,  Wideband Mobile  , sw ver C, port = COM1  F1 = help
```

Example of SM-4000 Series

```
---Wednesday 9th October 1996----------------------------------------------
      Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
---------------------------------SM-4150EX---------------------------------
          RX Frequency  Option   TX Frequency    Option
1  SP     136.000000     off      136.000000      off    Tx Time Out = 180 Secs
2  SP     136.525000     off      136.525000      off    TX Delay   On
3  SL     136.225000     047      136.225000      047    Busy ch lockout On
4  SL     140.000000     91.5     140.000000      91.5   Marked Idle Off
5  S      155.000000     67.0     155.000000      67.0   Priority Channel 1 =  2
6                                                        Priority Channel 2 =  1
7                                                        Lookback Time = 0.50 Secs
8                                                        Scan List: 1,2,3,4,5,
9                                                        Scan Wait  = 0.50
10                                                       Scan Delay = 1.0
11                                                       Program/Print/Save
12
13
14
15
16
-------- Press <ESC> key to return to previous menu ----------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
    <INS> to copy previous line, → to select Features,   <F2> to Printscreen
-------------------------------New File-----------------------------------
   SM-4150  136 - 174 MHz, spacing = 25.0 kHz, sw ver B, port = COM1  F1 = help
```

SMP-4004 C
PROGRAMMING INSTRUCTIONS
Example of SP-130 Series

```
---Monday 18th August 1997----------------------------------------------
     Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
--------------------------------SP-130V---------------------------------
        RX Freq Width Option  TX Freq Power  Option
1        150.0000 S    off    150.0000 H      off    Tx Time Out Off
2        160.0000 S    off    160.0000 H      off        Tx Inhibit Off
3        152.4800 S    off    152.4800 L      off    TX Delay   Off
4        167.7500 S    off    167.7500 L      off    Busy ch lockout Off
                                                     Marked Idle Off
                                                     Monitor Off
                                                     Priority Channel Off
                                                        Pr Lookback Off
                                                     Scanning Off
                                                     Beep On
                                                     Power Save:
                                                      Rx OFF TIME Off
                                                      Rx ON  TIME Off
                                                      DELAY  TIME Off
                                                     Program/Print/Save

-------- Press <ESC> key to return to previous menu --------------------
Use ↑ and ↓ keys to select channel, <CR> to enter values, <Del> to delete line
   <INS> to copy previous line, → to select Features,   <F2> to Printscreen
---------------------------------New File-------------------------------
  SP-130 V  136 - 174 MHz, spacing = 25.0 kHz, sw ver C, port = COM1  F1 = help
```

Example of SP-140 Series

```
---Monday 18th August 1997----------------------------------------------
     Maxon Mobile Radio - Personality Programmer SMP4004C   Ver. 2.XX
--------------------------------SP-140V---------------------------------
         RX Freq Width Option  TX Freq Power  Optio╔═══ Select Features ═══
1         148.0250 S    off    148.0250 H      off ║1. Tx Time Out = 100 Secs
2         162.0250 S    off    162.0250 L      off ║   Tx Inhibit =   5 Secs
3         173.9250 S    off    173.9250 H      off ║2. TX Delay   On
4         148.0125 S    off    148.0125 L      off ║3. Busy ch lockout On
5         162.0250 S    off    162.0250 H      off ║   Marked Idle Off
6         173.9250 S    off    173.9250 H      off ║4. Monitor Off
7         159.5000 S    67.0   159.5000 L     67. ║5. Priority Channel Off
8         159.5000 S   100.0   159.5000 L    100. ║   Pr Lookback Off
9         159.5000 S   250.3   159.5000 H    250. ║6. Scanning Off
10        159.5000 S   047     159.5000 H    047  ║7. Beep On
11        159.5000 S   116     159.5000 L    116  ║8. Power Save:
12        159.5000 S   100.0   159.5000 L    100. ║   Rx OFF TIME Off
13        160.5500 S   047     160.5500 H    047  ║   Rx ON  TIME Off
14        165.5500 S    off    165.5500 L      off ║   DELAY  TIME Off
15        165.5500 S   100.0   165.5500 H    100. ║9. Program/Print/Save
16        165.5500 S    off    165.5500 L      off ║
-------- Use <ESC> or ← to go to channel data entry    lue ─────────────
Use ↑ and ↓ keys to select feature, press <CR> to enter values

---------------------------------New File-------------------------------
  SP-140 V  136 - 174 MHz, spacing = 25.0 kHz, F1 =help, port = COM1
```

TROUBLESHOOTING GUIDE

PROBLEMS	SOLUTIONS

FOR RADIO MODELS:
SP-2000/SP-2000C/SL-70W/SM-2000/SP-120
SP-130/SP-140
ERROR MESSAGE DISPLAYED IS:
<div align=center>Radio attempted data transfer
in wrong direction!
Check that your radio is a
##-####
Make sure you are releasing the monitor
button after the proper LED flash</div>
	*Verify that the correct radio is selected.
	*<u>When reading the radio</u>: Release the monitor
	  button after the *First* flash.
	  >The light should be *Red*.
	*<u>When writing to the radio</u>: Release the monitor
	  button after the *Second* flash.
	  >The light should be *Green.*
	*Restart the program using:
	  SMP4004C /I

FOR RADIO MODELS: SP-2000/SP-2000C/SL-70W/SM-2000/SP-120 SP-130/SP-140 ERROR MESSAGE DISPLAYED IS: <div align=center>SWITCH OFF RADIO TO EXIT PROGRAMMING OR PRESS ANY KEY Please switch the radio off</div>	*Verify the radio is turned off. *Verify the DB-25 connector is securely plugged into the computer.

FOR RADIO MODELS:
SP-2000/SP-2000C/SL-70W/SM-2000/SP-120
SP-130/SP-140
ERROR MESSAGE DISPLAYED IS:
<div align=center>Cannot detect programming lead</div>
	*Verify the correct cable is attached to the
	  computer.
	*Verify the cable is plugged into the appropriate
	  COM port.

FOR RADIO MODELS:
SM-4150/SM-4450
 	
ERROR MESSAGE DISPLAYED IS:
 	
<div align=center>!! WARNING !!</div>
- the radio is not properly connected
  to the computer OR
- the radio is properly connected, but
  is not in "Prog" mode OR
- the target EEPROM is blank.
	*Verify the **SPC-4000** cable is attached to the
	  computer.
	*Verify the cable is securely plugged into the
	  digital PCB.
	*Verify the EEPROM is a **93C46** if you have
	  selected **SM-4150**.
	*Verify the EEPROM is a **93C56** if you have
	  selected **SM-4150EX**.

FOR RADIO MODELS: SM-4150/SM-4450 ERROR MESSAGE DISPLAYED IS: <div align=center>SM-4150 radio was not turned ON and in 'Prog' mode.</div>	*Verify the cable is a **SPC-4000**. *Verify the radio is in PROG mode.

SMP-4004 C
PROGRAMMING INSTRUCTIONS

PROBLEMS	SOLUTIONS

FOR RADIO MODELS:
SM-4150/SM-4450
 	
ERROR MESSAGE DISPLAYED IS:
 	
SM-4150 programming lead was not
found attached to COM1
	*Verify the **SPC-4000** cable is attached to the
	  computer?
	*Verify the cable is plugged into the appropriate
	  COM port?
	*Verify the **CA-1610** Power supply is plugged into
	  the cable.
	  (For **SPC-4000** cable with **CA-1610** power
	  supply only.)
	*Verify the Red lead is attached to pin 1 of the
	  Auxiliary Option Interface and that the radio is
	on and in Prog mode.
	  (For **SPC-4000** cable with red wire attaching to
	  the relay interface only.)

FOR WINDOWS USERS: Screen goes blank when program is reading or writing to radio.	*Program must be run in full screen mode.

FOR WINDOWS USERS:
Problems programming radio
	*Command line should use:
	  SMP4004C /I
	  to start the program.

OTHER PROBLEMS : Not ready reading drive a:	*Verify the diskette is in the drive you are trying to read.
Error reading drive a:	*Verify that the correct drive is selected. *Disk is bad, contact Maxon Electronics Inc's Customer Support for a replacement disk.