

Supplement to Owner's Guide MICOM-2ES/2RS/2TS ALE HF-SSB Transceivers – Version CK

Table of Contents

Scope	1
New Model Information	1
44-Pin Accessories Connector	2
Functional Enhancements	4
ALE Enhancement – Multiple Calls	4
ALE Enhancement – Occupancy Check Intervals	4
Other Enhancements	4
New Options	4
Firmware Upgrade	8
Introduction	8
Preparations for Upgrade – PCs Using Windows 2000/NT/XP	8
Upgrading MICOM-2 Firmware	9

Scope

This Supplement provides information on the new versions (Version CK) of the MICOM-2E/2RS/2TS ALE HF-SSB transceivers. The new versions use enhanced hardware and provide additional ALE capabilities.

Externally, the new versions are similar to the previous MICOM-2E/2RS/2TS ALE versions. However, changes have been made in the wiring of the 44-pin accessories connector located on the rear panel, relative to the 44-pin connector used by the previous versions.

The information appearing in this Supplement is intended for use with the following publications:

- Owner's Guide, MICOM-2E/2RS/2TS ALE HF-SSB Transceivers, Publication 68P02952C60-A
- Supplement 68MB000010 to Owner's Guide, MICOM-2E/2RS/2TS ALE HF-SSB Transceivers.

New Model Information

The new transceiver versions have been assigned new model numbers, as follows:

MICOM-2ES	Model M80AMNOKV5CK
MICOM-2ETS	Model M81AMNOKV5CK
MICOM-2RS	Model M85AMNOKV5CK

44-Pin Accessories Connector

Table 1 lists the current functions of the 44-pin accessories connector, J5.

Asterisks * appear in the **Designation** column next to the pins whose function has changed, relative to previous equipment versions.

- Notes**
1. The information appearing in Table 1 supersedes any previous information provided in the Owner's Guide (Publication 68P02952C60-A) and in the Supplement 68MB000010 to Owner's Guide.
 2. You can continue using the fixed adapter accessory for MICOM-2ES, MICOM-2ETS and MICOM-2RS (part No. 09MB000011). This accessory interfaces between the 44-pin connector and older 25-pin accessories.

Table 1. 44-Pin Accessories Connector, Pin Functions

Pin	Designation	Description
1	SPKR-	Differential output to the external 8Ω, 8W speaker
2	STOP SCAN	Digital control input for stop scan function
3	SPKR+	Differential output to the external 8Ω, 8W speaker
4	EXT RX AUDIO+	Differential received audio output (0 dBm; 600Ω; not controlled by volume, but affected by squelch)
5	EXT RX AUDIO-	
6	EXT TX AUDIO+	Differential transmit audio input (600Ω input impedance, 0 dBm is required for full power)
7	EXT TX AUDIO-	
8	PTT IN VOICE	Transmission command (short to ground) for voice signals
9	PTT IN DATA	Transmission command (short to ground) for data signals
10	PTT IN CW	Transmission command (short to ground) for CW (Morse) signals
11	SW A+	Primary DC voltage current limited output (max 1A)
12	DSI/KW C C	BDM – Data serial in/kW amplifier channel change
13	KW ON/OFF	kW amplifier power on/off output
14	REV CLOSE LOOP *	Close the loop of ALC radio (input)
15	RXA	Receive input (point-to-point protocol to host/HLC)
16	TXA	Transmit output (point-to-point protocol to host/HLC)
17	EX RESET	External RESET input (for BDM)
18	GND	Ground
19	KW PTT	PTT output to kW amplifier
20	EXT ALARM	External alarm output (open collector, pulled to ground when external alarm is activated)

Table 1. 44-Pin Accessories Connector, Pin Functions (Cont'd)

Pin	Designation	Description
21	VPP	Flash programming voltage, input to BDM
22	DSC/KW_ALC	BDM – Data serial clock/kW amplifier ALC
23	SQ GATE	Squelch open/closed indication output
24	DSO/FAN ON/OFF	BDM – Data serial out/Fan control
25	FREEZE/KW TU	BDM – Freeze/kW amplifier tune
26	GND	Ground
27	FWD CLOSE LOOP *	ALC radio loop closure input
28	RXC *	Receive input (point-to-point protocol to host/HLC)
29	TXB	RS-232 transmit output to VP-116, PPS, 500W, ASTIC
30	AMP REV *	Maintain constant power at 500W transceiver output
31	RXD *	Receive input (point-to-point protocol to host/HLC)
32	TX AUDIO OUT	Input to baseband TX path
33	RXB	RS-232 protocol receive input to VP-116, PPS, 500W, ASTIC
34	RX AUDIO OUT	Input to baseband RX path
35	RX AUDIO IN	Output from baseband RX path
36	AMP FWD *	Maintain constant power at 500W transceiver output
37	VP PTT *	PTT output (active low)
38	TXD *	Transmit output (point-to-point protocol to host/HLC)
39	TXC *	Transmit output (point-to-point protocol to host/HLC)
40	TX AUDIO IN	Output from baseband TX path
41	EXT RX AUDIO(2)+	Audio out from ISB hybrid
42	EXT TX AUDIO(2)–	Audio out from ISB hybrid
43	EXT RX DATA– *	Baseband output (0 dBm, 600 Ω)
44	EXT RX DATA+ *	Baseband output (0 dBm, 600 Ω)

Functional Enhancements

Figure 1 through Figure 5 present the menus of the new MICOM-2E/2RS/2TS ALE HF-SSB transceiver CK versions. The main enhancements are described below.

ALE Enhancement – Multiple Calls

When using the ALE function, you can select between making an individual call and making calls to multiple (MULT) destinations.

► **To reach the multiple call options:**

1. Press the **MORE** key to display the **MULT** (F1) option.
2. Press **MULT** (F1) to display a screen with the following options:
 - **ALL** (F1) – all-call (broadcast) to all the stations
 - **NET** (F2) – call to all the stations in a selected net.

ALE Enhancement – Occupancy Check Intervals

The new MICOM-2 versions add the option to select the time interval for occupancy checking: the range is 300 to 3000 msec, in 300-msec steps.

Other Enhancements

For your convenience, under **PROG>LANG**, the new MICOM-2 versions always show the language icons in their proper (native) language, irrespective of the currently selected language.

New Options

The VP option is now supported by means of the **G849AB** option, that replaces the previous VP option, G849. The **G849AB** option includes two new items:

- FKN8149A** **Cable, VP to MICOM-2, MICOM-3.** New cable, used for connecting the VP-116 to the MICOM-2 (the cable offered with the G849 option cannot be used with the new MICOM-2 transceivers).
- FKN8148A** **Cable Suitcase with VP, MICOM-2, MICOM-3.**

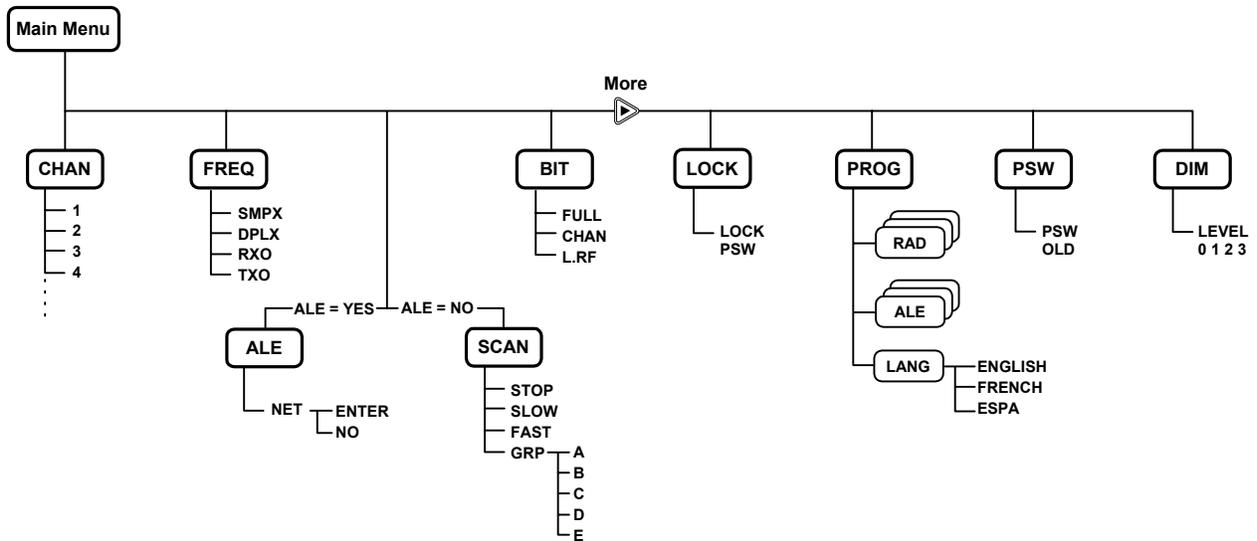


Figure 1. Main Menu

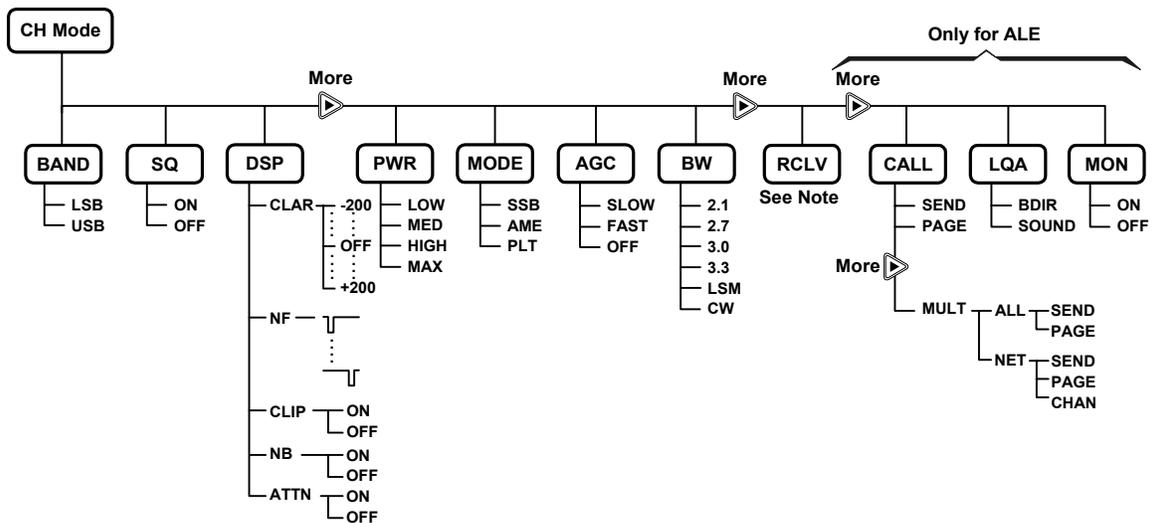


Figure 2. Channel (CH) Menu

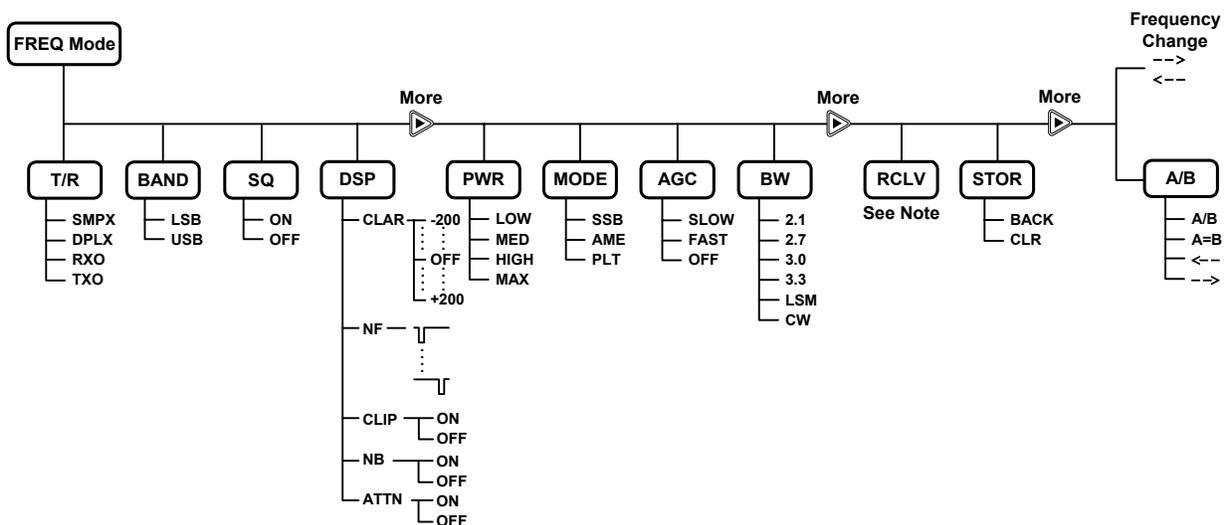


Figure 3. Frequency (FREQ) Menu

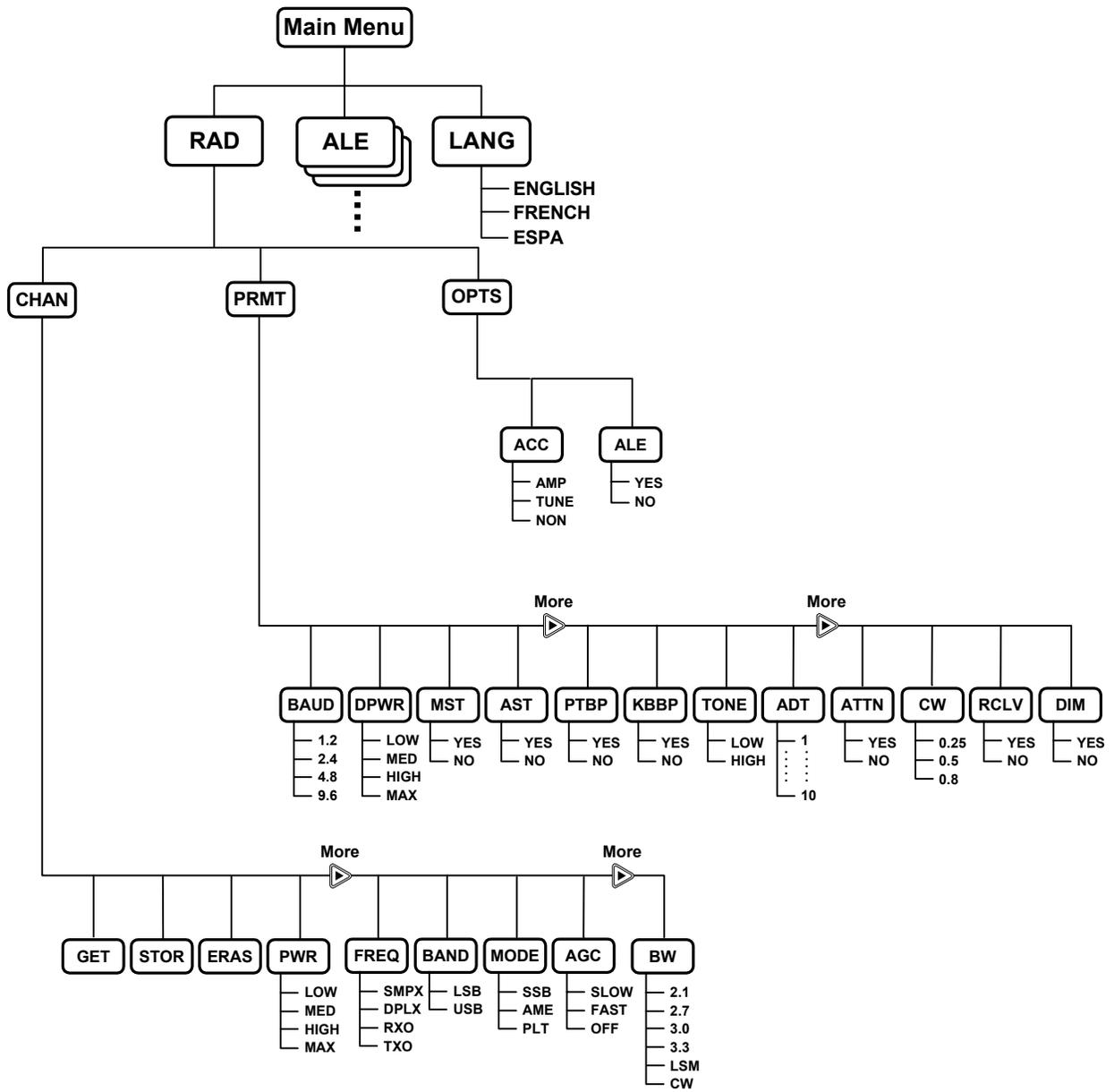


Figure 4. PROG Menu – Radio Parameters Programming

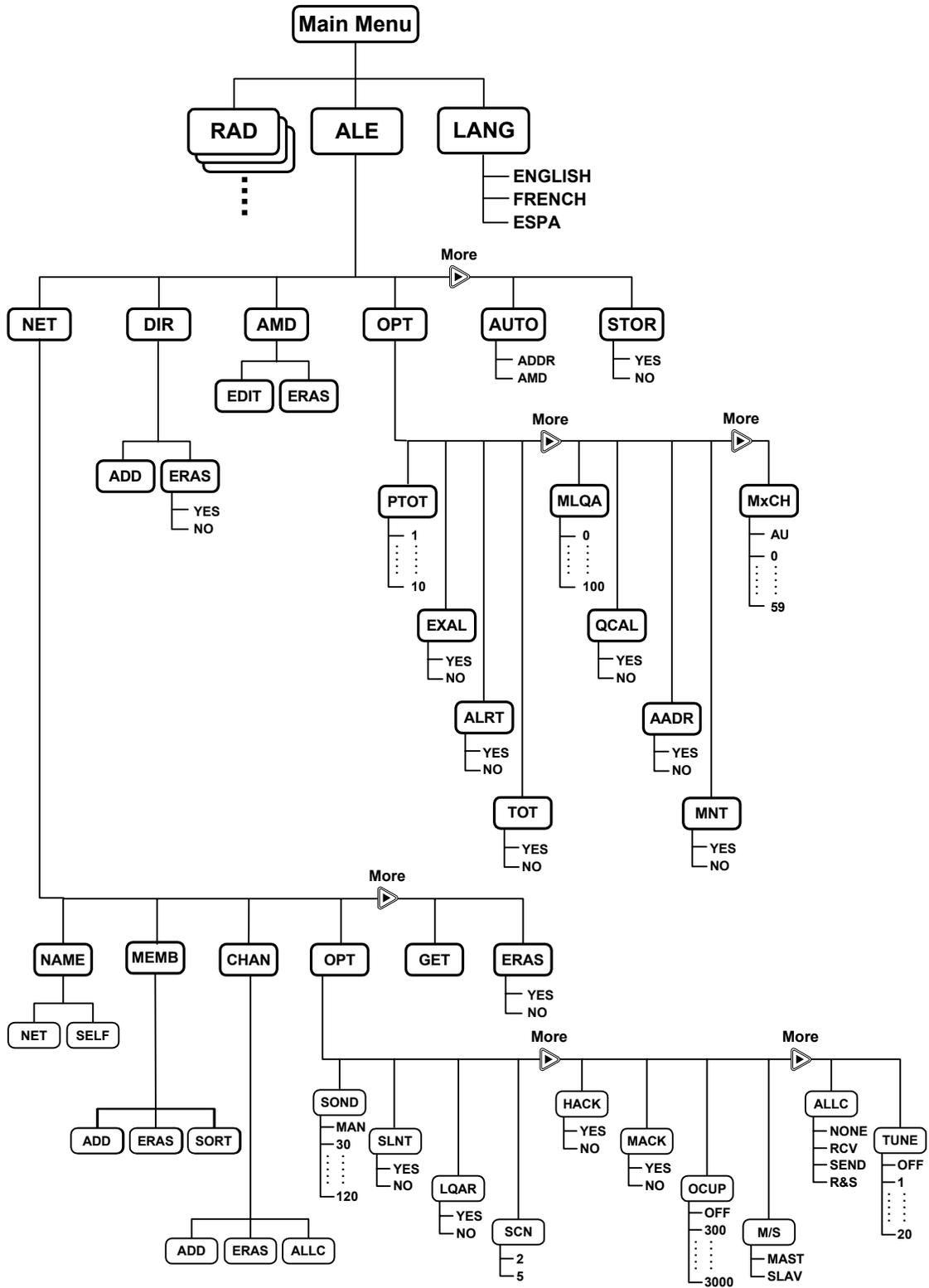


Figure 5. PROG Menu – ALE Parameters Programming

Firmware Upgrade

Introduction

This section provides instructions for updating the firmware of the new MICOM-2 versions when a new release of firmware is announced.

Note *Firmware upgrade must be implemented by an authorized technician.*

The software on your MICOM-2 radio can be upgraded by connecting the radio to a computer with a Windows 95/98/2000/NT/XP operating system, and downloading the upgrade from the supplied diskette.

The software version is upgraded without affecting the radio's database of addresses, frequencies, channels and other user-specific data.

To perform the upgrade, you must have the new Firmware Upgrade Kit FLN2497B, which replaces Firmware Upgrade Kit FLN2497A (no longer usable with the new MICOM-2 versions). FLN2497B is also suitable for use with the MICOM-3 family of HF-SSB transceivers.

Firmware Upgrade Kit FLN2497B includes:

- Interface Cable (part no. FKN4681B).
- CD with required software (part no. FVN5222A). This CD includes the BDM application software, as well as the software needed to install **UserPort** on PCs running Windows 2000, NT or XP.
- Flash software, provided on one 3½ inch diskette.

Preparations for Upgrade – PCs Using Windows 2000/NT/XP

If you have Windows 2000, NT or XP, you need to install **UserPort** before starting the upgrade.

Installing UserPort

1. Insert the provided CD, and identify the location of the **UserPort.exe** and **UserPort.sys** files.

Note *If necessary, these files may also be downloaded from <http://www.embeddedtronics.com/design&ideas.html>*

2. Choose a disk drive on your system to keep the **UserPort** files, for example, on **C:**.
3. Unzip **userport.zip** to C: with the **Use Folder Names** option turned ON. This will create the directory **C:\UserPort** (and some additional directories that are not used).
4. Open a command window to set the default to the newly created directory:
 - From the Start Menu, choose **Run**, type the command **cmd** and then press **<Enter>**.

- When the command window appears, type the following commands:

```
c:<Enter> (or the drive you chose in Step2)
cd UserPort<Enter>
```

5. Now type this command:

```
Copy UserPort.SYS %WINDIR%\SYSTEM32\DRIVERS<Enter>
```

6. Run **UserPort.exe** using this command:

```
UserPort>Enter<
```

7. On the screen displayed by this command, click one after the other on all the entries in both the left pane and the right pane, and then click the corresponding **Remove** button until the screen is clear.
8. Now, in the left pane, add the interval for the LPT port you want to use. You need to click the **Add** button once for each LPT port you want to enable for **WriteLog**. For example, to add support for LPT1 at the default address only, which is 0x378, **WriteLog** uses addresses from the (**base address**) up to the (**base address +3**). In this example, the range is 0x378 to 0x37B.
9. Now click **Update**, **Start**, and then **Exit**.

Note *If the **UserPort** is not working after a reboot, or **WriteLog** crashes with a **Privileged Instruction** violation, run **UserPort.exe**, click **Stop**, **Update**, **Start**, and **Exit** after every reboot.*

Removing UserPort

If you decide to no longer use **UserPort**, here is what you have to do to remove it from your system:

1. Run **Userport.exe**. Click the **Stop** button, then **Exit**. Note that it is important to click the **Stop** button before you delete **userport.exe**. Otherwise, Windows will attempt to reload the driver on every reboot.
2. Delete the **Userport.sys** file:

```
del %WINDIR%\SYSTEM32\DRIVERS\userport.sys
```

3. Remove these registry entries:

```
My Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\UserPort
```

4. Reboot.

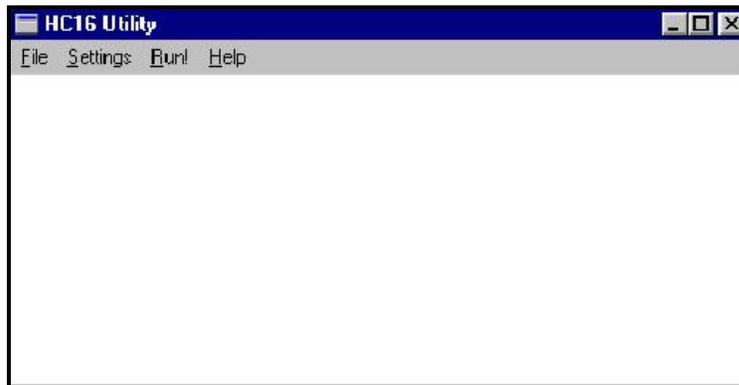
Upgrading MICOM-2 Firmware

► To upgrade the 2-MICOM firmware:

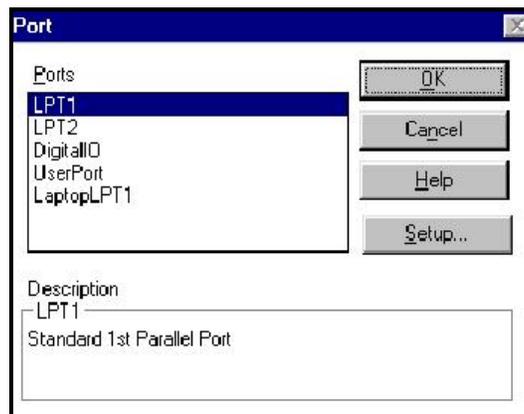
1. Turn the radio and the computer off.
2. Disconnect the coaxial cable of the radio from its antenna connector.
3. Connect the Radio side of the programming cable to the accessories connector on the rear panel of the radio.
4. Connect the **Computer** side of the programming cable to the parallel port of the computer.

5. Turn on the radio and the computer.
6. Copy the flash software (**genesis.hex**) from the upgrade distribution diskette to the computer's hard drive.
7. Insert the BDM application software diskette into drive A of the computer.
8. From the File Manager, select drive A and double-click **bdmload.exe**.

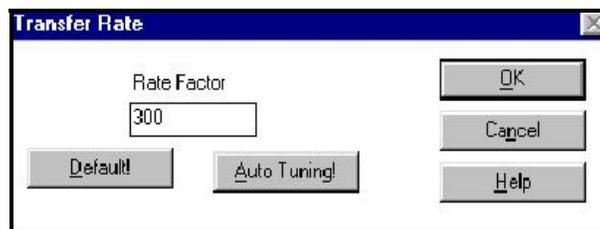
The HC16 Utility window is displayed.



9. In the HC16 Utility window, select **Settings > Communication**.
The **Port** dialog box is displayed.



10. Select the required port and then press the **OK** button.
The Port dialog box closes, and the HC16 Utility window is displayed again.
11. In the HC16 Utility window, select **Settings > Tune Rate**.
The **Transfer Rate** dialog box is displayed.



12. Set the **Rate Factor** to **300**, and then press the **OK** button.

The **Transfer Rate** dialog box closes, and the HC16 Utility window is displayed again.

If you use the UserPort for Windows 2000, NT or XP, **TuneRate** should be set to **2000**. If you get a communication error, change this parameter in steps of 100 up or down, until it will function properly.

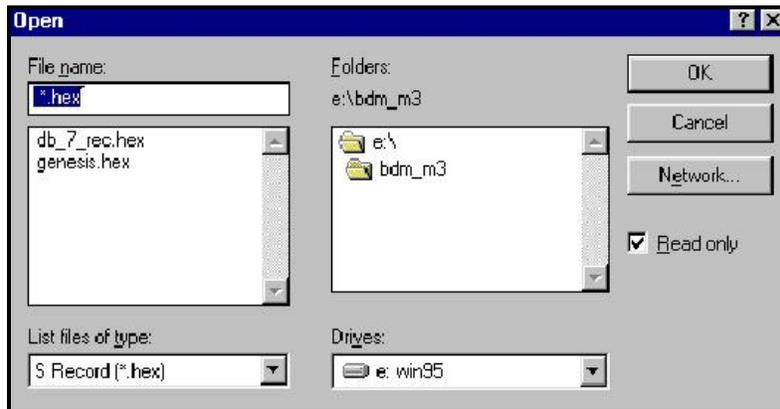
13. In the HC16 Utility window, select **Run** to start programming the radio with the flash software.

Note *If the communication with the radio fails, the following message is displayed:*

BDM communication problems. Please check the power supply, the computer connection, and the defined transfer rate, and try again.

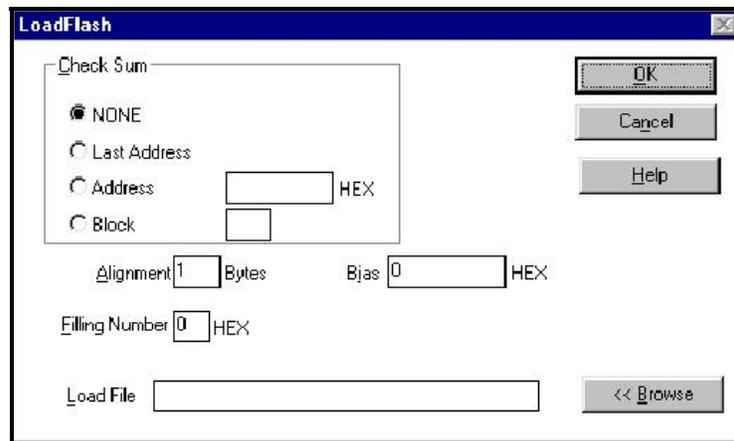
*If the message is displayed again, try setting the transfer rate to **400**, and run again.*

14. The flash memory in the radio is erased, and the **Open** dialog box is displayed.



15. In the **Open** dialog box, use the **Browse** button to select the flash software file you saved to your hard disk (**genesis.hex**).
16. Press the **OK** button to confirm the selection.

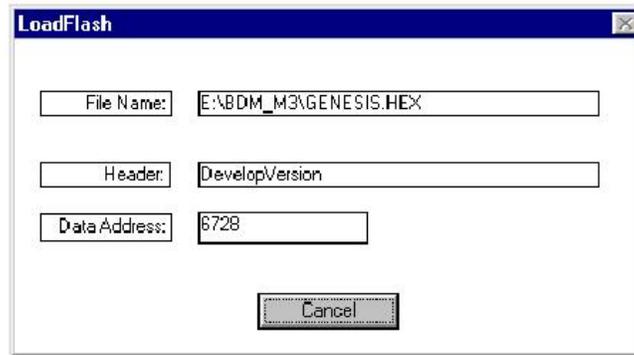
The **LoadFlash** dialog box is displayed.



17. In the **LoadFlash** dialog box, press the **OK** button to download the software version to the radio flash memory.

Note *This programming procedure takes about 15 seconds.*

The **LoadFlash** window now displays the current software version.



18. Wait for the download to be completed. When completed, you will see a box with the message **Radio has been programmed successfully! Thank you.**
19. In the message box, press the **OK** button.
20. Turn the radio off, and then back on to activate the new software version.