ERICSSON ≦ | ℰℰ

Mobile Communications

DUAL FORMAT
PCS/MDR/MDX
FLASH
PROGRAMMING

Programming Instructions

TABLE OF CONTENTS

INTRODUCTION

The radio operating system software for the microprocessor resides in a 128 kilobyte Flash Memory device. The Flash Memory allows easy reprogramming of the radio software for additional features and software upgrades without opening the radio or removing standard EPROMs. This manual provides instructions for using the Flash Program to update the system software in the Dual Format PCS, MDR and MDX radios. The operation of the program is the same for all three radios, but the radio setup and system hook-up is unique for each radio.

INSTALLATION

PC REQUIREMENTS

The following hardware and software is required to update the system software through FLASH Programming:

A. IBM PC XT, AT or any true compatible with MS-DOS version 3.0 and having the following minimum configuration.

    1. Two Disk Drives, either dual flexible (floppy) or a single floppy with a fixed (hard) disk drive system. **NOTE:** The destination drive must contain at least 500K bytes of free memory.

    2. 640K Internal RAM.

    3. Serial Port.

B. Serial Programming Interface Module (TQ-3370 only) and RS-232 Cable (part # 19B235027P1).

C. Radio Programming Cable:

        TQ-3336 for PCS
        TQ-3371 for MDR
        TQ-3372 for MDX

MAKING BACKUPS

The Flash Programming Software is provided on a single 5 1/4" diskette or a single 3 1/2" diskette. The diskettes are sensitive and fragile and should be handled with care and stored in a secure area.

Upon receipt of your diskette, copy the original software diskette to another diskette or a fixed disk and store the original in a safe place. This ensures the availability of an accurate program should a copy fail during program execution.

SYSTEM HOOK-UP

Connect all peripheral equipment to your computer prior to configuring the Flash Programming Software. Remember to refer to the operating manuals of each device for correct installation.

If your system is already established, check to see that you have all the equipment necessary to execute the program (see page 3). Isolate all cables connecting computer to devices to prevent tangling, interference and damage.

Locate the serial port on the computer. This port is usually located on the back of the computer. Once located, examine the keyed plug on the RS-232 cable for the correct keyed end and insert it carefully into the appropriate serial port on the computer. If your computer uses a DB-9 connector, you will need to use a DB-9/DB-25 adaptor cable from your local computer dealer. The other end of the RS-232 cable should now be inserted into the computer receptacle on the PC Interface Module (TQ-3370).

PCS Portable

Connect the programming cable (TQ-3336), Dummy Battery (19A705293P4) and a regulated Power Supply as shown in Figure 1. At this point the Power Supply should be off.

NOTE: The Flash Memory requires a precise voltage of 11.5 to 12.5 volts for proper programming. Damage to the Flash Memory as well as other devices will result if the battery voltage exceeds 12.5 volts.

MDR Mobile

Connect the programming cable (TQ-3371), programming module Power Supply (19B800850P2) and a regulated Power Supply for the radio as shown in Figure 2. At this point the radio Power Supply should be off.

MDX Mobile

Connect the programming cable (TQ-3372) and a regulated Power Supply for the radio as shown in Figure 3. At this point the radio Power Supply should be off.

LOADING THE SOFTWARE

1. Insert the Software Update Diskette into the appropriate drive.

2. Change to that drive and from the DOS prompt type:

    xxxupdate <enter> (where xxx is either PCS, MDR or MDX)

3. The Introductory Screen in Figure 4 will appear. This screen verifies the type of radio and the Group number of the System Software included with this update. To begin the Software installation onto your destination drive, type:

    xxxupdate "drive": <enter> (where xxx is either PCS, MDR or MDX and "drive" is the letter of the destination drive).
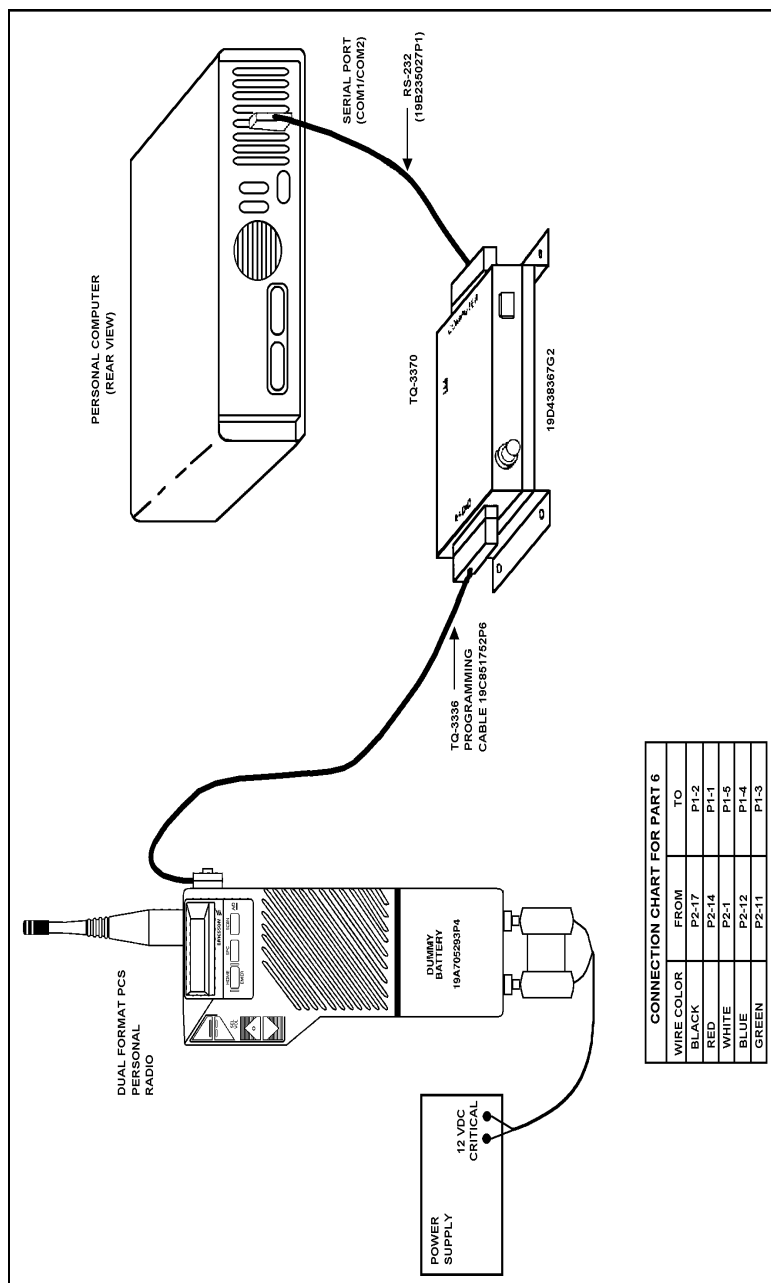
PERSONAL COMPUTER (REAR VIEW)

SERIAL PORT (COM1/COM2)

RS-232 (19B235027P1)

TQ-3370

19D438367G2

TQ-3336 PROGRAMMING CABLE 19C851752P6

DUAL FORMAT PCS PERSONAL RADIO

DUMMY BATTERY 19A705293P4

POWER SUPPLY

12 VDC CRITICAL

CONNECTION CHART FOR PART 6		
WIRE COLOR	FROM	TO
BLACK	P2-17	P1-2
RED	P2-14	P1-1
WHITE	P2-1	P1-5
BLUE	P2-12	P1-4
GREEN	P2-11	P1-3

Figure 1-PCS Flash Programming System Hook-Up

SERIAL PORT (COM1/COM2)

RS-232 (19B235027P1)

PERSONAL COMPUTER (REAR VIEW)

TQ-3370

19D438367G2

POWER SUPPLY 19B800850P2

TQ-3371 PROGRAMMING CABLE 19B801417P9

POWER SUPPLY
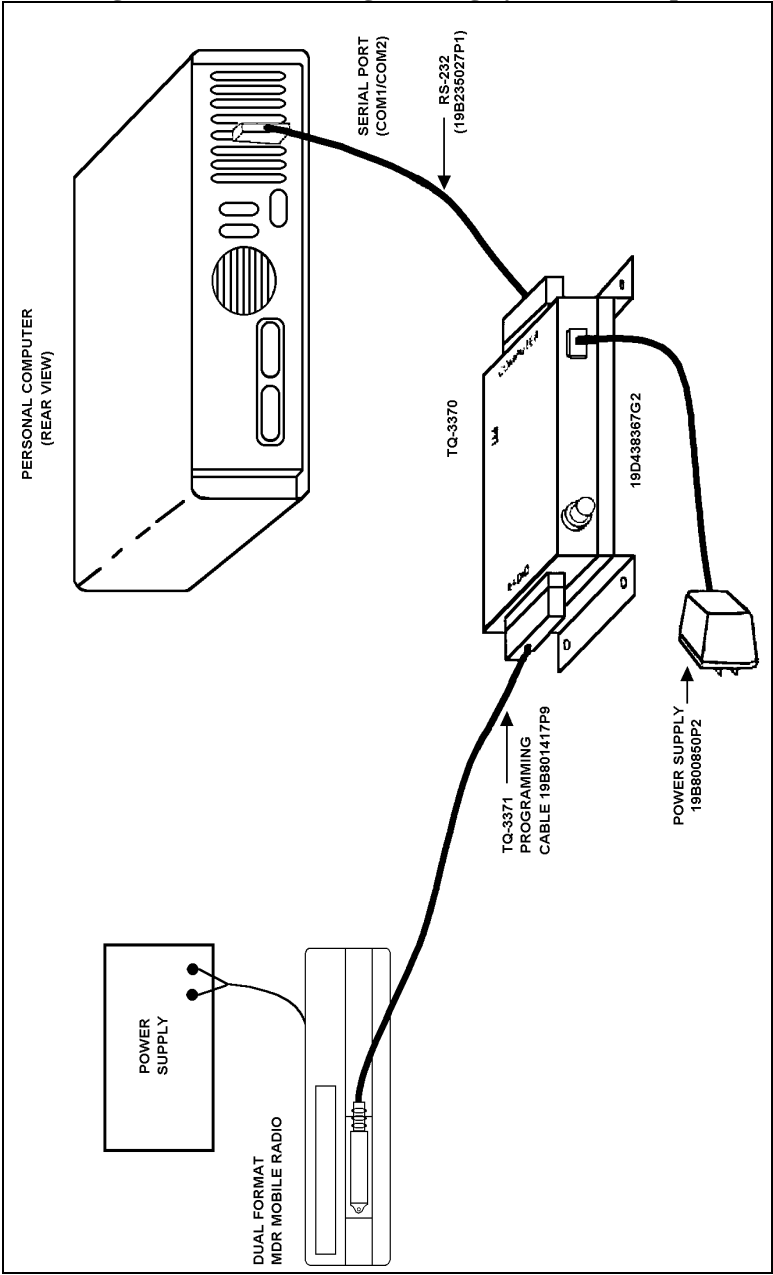
DUAL FORMAT MDR MOBILE RADIO

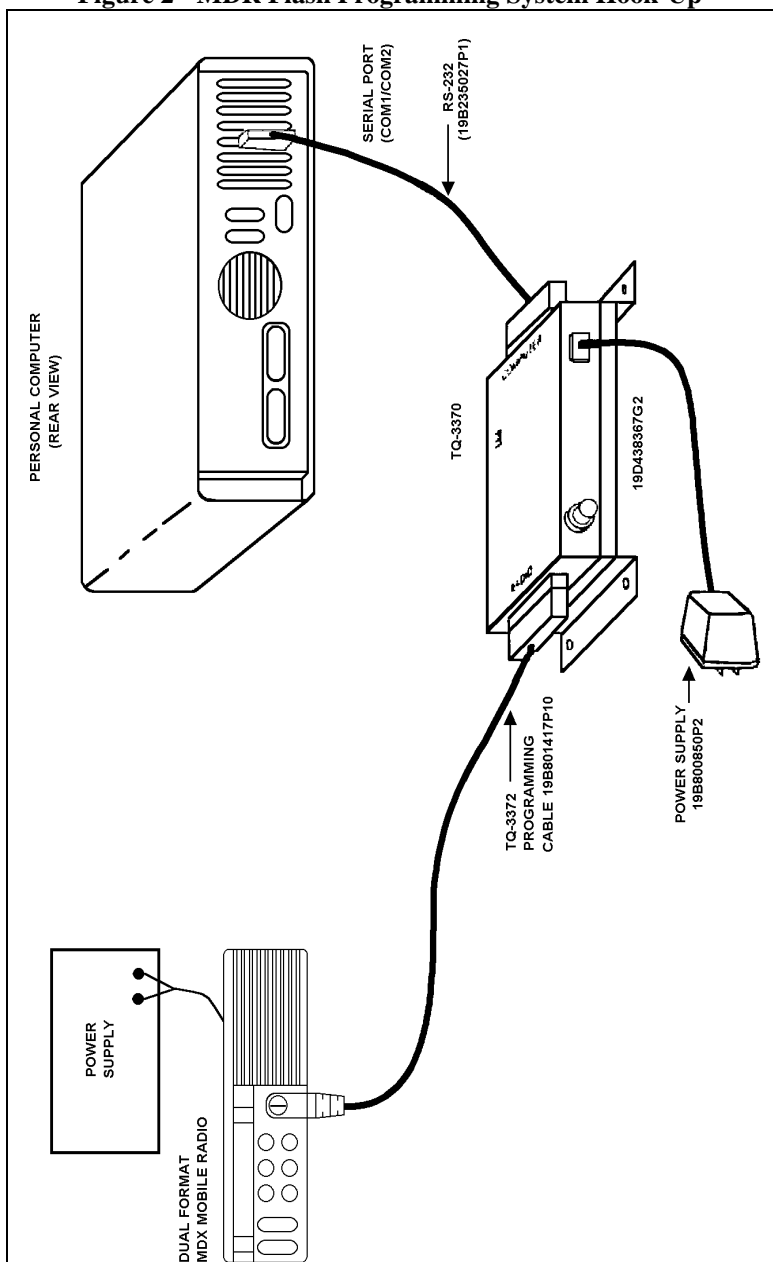# Figure 2 - MDR Flash Programming System Hook-Up

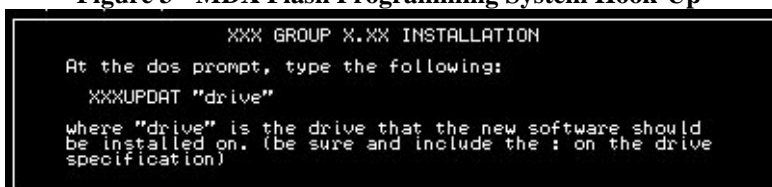**Figure 3 - MDX Flash Programming System Hook-Up**

Figure 4 - Introductory Screen

4. The Installation Screen will appear as the software is loaded. Figure 5 provides an example of a PCS Update installation. A directory is created and named XXXGXVXX (where XXX is the name of the radio, GX is the Group number of the software and VXX is the version number of the software). The Software is de-compressed and loaded into this directory.

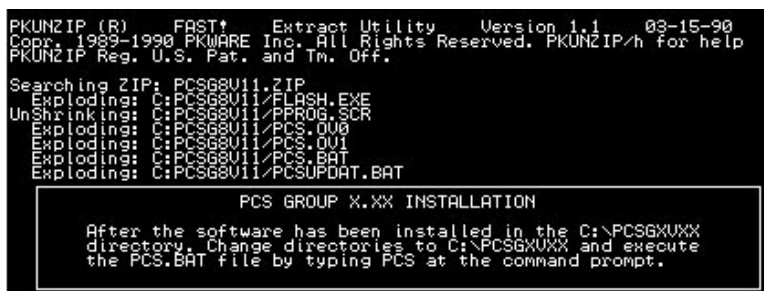
Figure 5 - Installation Screen

5. Change to the destination drive and directory created and shown in the Installation Screen (see Figure 5). Following the screen prompts, execute the batch file by typing:

   xxx <enter> (where xxx is the type of radio)

6. The Port Screen in Figure 6 will appear and prompt you for the COMM port (1, 2, 3 or 4) that the convertor box is connected to.

Type: **xxx "port" <enter>** (where xxx is the radio type and "port" is the number of the COMM port)
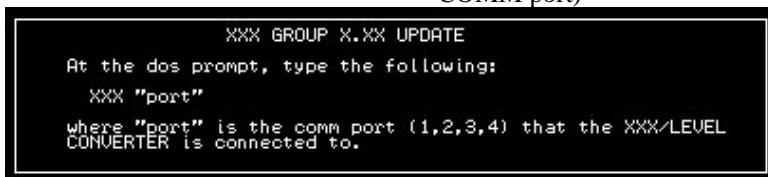
```
                  XXX GROUP X.XX UPDATE
  At the dos prompt, type the following:

     XXX "port"

  where "port" is the comm port (1,2,3,4) that the XXX/LEVEL
  CONVERTER is connected to.
```

Figure 6 - Port Screen

7. After entering the port number, the Update/Cancel Screen, shown in in Figure 7, will appear. This is the last opportunity to cancel the update process. To terminate the batch file, press the **CTRL** key and then the **C** key simultaneously. Pressing any other key will start the update process. Before starting the update process, please see the special instructions below that are unique to each radio.

```
                  PCS GROUP X.XX UPDATE
   The PCS operational software is about to be updated to
   GROUP X.XX. Ensure that the radio is connected up to the level
   converter (TQ3370).  Further, ensure that the PCS has 12V
   connected to it. Once all this is completed press any key
   to continue or CNTRL-C to exit this program.

Press any key to continue . . .
```
PCS

```
                  XXX SOFTWARE VERSION X.XX
   The XXX operational software is about to be flashed into
   the radio. Ensure that the radio is connected to the TQ-3370
   level converter. Once all this is completed press any key to
   continue or CNTRL-C to exit this program.

Press any key to continue . . .
```
MDR/MDX

Figure 7 - Update/Cancel Screen

PCS:

1. Turn the Power Supply on. The radio display should be blank. If the normal display comes up, the radio is not entering the Flash Programming Mode. This is probably due to the Power Supply

not reaching the 12 volt level within the time period the radio must sense 12 volts. To eliminate this problem, leave the Power Supply on, disconnect the Dummy Battery and then reconnect the Dummy Battery.

2. With the radio display blank, press any key to start the update process.

MDR:

1. Turn radio Power Supply on. **NOTE:** Do not attempt to turn the radio on. The Flash Programmer turns the radio on automatically.

2. Be sure the Convertor Box Power Supply is connected.

3. Press any key to start the update process.

MDX:

1. Turn radio Power Supply on. Radio display should be blank while in the Flash Programming mode.

2. Press any key to start the update process.

PROGRAM EXECUTION

Each step of the Flash Programmming is displayed on the computer screen as it is executed. Figure 8 provides an example of the information that will scroll across the computer screen during a successful Flash.

Remember:

1. The Flash Update is not complete until the following message is displayed: `"Radio X:  programmed."`

2. Once the Flash Programming is complete, *remove power to the radio* before removing programming cable.

```
PCS/MDR/MDX Flash Programmer, v2.3; Tue Mar  2 12:37:46 1993
(C) Copyright 1992 Ericsson-GE Inc.
FLSH>ID
Transmit Slot: #11              Radio #1 ID: CACF0C000000
Total number of radios properly identified: 1
FLSH>BAUD 19200

*STATUS FOR ID: CACF0C000000
Last Command Received was:
  set 19200 Baud rate
Command Status is:
  Wait state machine ready
  Erase successful
  Program successful
FLSH>ERASE ALL

*STATUS FOR ID: CACF0C000000
Last Command Received was:
  Erase all
Command Status is:
  Wait state machine ready
  Erase successful
  Program successful

FLSH>LOAD XXX.OV0
Processing record for address DB00

  Wait state machine ready
  Erase successful
  Program successful
FLSH>LOAD XXX.OV0
done, 65536 bytes input.
FLSH>PROGRAM 0 0

*STATUS FOR ID: CACF0C000000
Last Command Received was:
  Confirm Program
Command Status is:
  Wait state machine ready
  Erase successful
  Program successful

FLSH>LOAD XXX.OV1
Processing record for address 24E0

*STATUS FOR ID: CACF0C000000
Last Command Received was:
  Confirm Program
Command Status is:
  Wait state machine ready
  Erase successful
  Program successful
FLSH>LOAD XXX.OV1
done, 65536 bytes input.
FLSH>PROGRAM 10000 0

*STATUS FOR ID: CACF0C000000
Last Command Received was:
  Confirm Program
Command Status is:
  Wait state machine ready
  Erase successful
  Program successful
FLSH>EXIT
Radio 1:  programmed.

Thank you for using the PCS/MDR/MDX Flash Programmer.
```

Figure 8 - Flash Programming

ERROR MESSAGES

If the Programmer fails to successfully update the Flash Memory, the following error message will be displayed:

```
ERROR:  Invalid response from radio 1 (1001)
           Radio X Not Programmed
```

If this message is encountered:

1. Review the System Hook-Up and Installation sections again.

2. Check all cables to be sure they are properly seated in the connector.

NOTES

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