

TOMAR ELECTRONICS

Strobecom II Emitter Code Module Programming System (ECMPS 3.0)

User's Manual (rev 4)

MAR 2003

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Chapter 1 - Welcome

The Emitter Code Module Programming System (ECMPS 3.0) installed on an IBM compatible PC with a parallel port (for model 2060 and 3060 emitters), or serial port (for model 3065 and 3065-R emitters), is used to program or re-program the vehicle code(s) stored in a Tomar Strobecom emitters. Vehicle code information stored in the emitter is then used to modulate the optical signal transmitted by the emitter to convey the vehicle's identification and priority to traffic control equipment along its travel route.

ECMPS 3.0 requires a special active cable (model 2060-CABLE, 3060-PROGCAB, or 3065-PROGCAB), which connects an IBM compatible computer to a 2060-CODE module, 3060 emitter, or 3065 emitter. The 2060-CABLE supplies all necessary power and signal conditioning for the 2060-CODE module during its programming. Model 3060 and 3065 emitters require vehicle power or an external power source during programming.

ECMPS 3.0 installs a special parallel port driver that is active only while ECMPS 3.0 is being used. In most cases, it is not necessary to remove or reconfigure any printer drivers that may also be configured for the same parallel port. Of course, simultaneous printing to the parallel port while ECMPS 3.0 is in use is not possible.

ECMPS 3.0 provides a graphical user interface that allows the user to change the vehicle code(s), and a 32-character vehicle description stored within the 2060-CODE, 3060, or 3065 emitter. ***For the 2060 and the 3060,*** the number of times the unit has been reprogrammed is also displayed.

It is assumed throughout this manual that the user is familiar with the Windows operating system and common terminology applicable to Windows.

Chapter 2 – Getting Started

Chapter 2 provides the following:

- A list of resources ECMPS 3.0 requires to work properly
- Instructions for installing ECMPS 3.0
- Instructions for removing ECMPS 3.0
- Information about contacting technical support

System Requirements

ECMPS 3.0 requires the following minimum computer configuration:

- An IBM Compatible PC, Pentium or better with 32 MB of RAM, minimum.
- Windows 98, Windows ME, Windows NT4.0 SP3, Windows 2000, or Windows XP. You must be logged in with administrator rights to install or use ECMPS 3.0 on Windows NT, Windows 2000, and Windows XP.
- 10 MB of free hard drive space
- An available parallel port (for 2060 and 3060 programming), or serial port (for 3065 programming). Usually, the port may also be used for printing and have a printer driver installed but only the printer or ECMPS 3.0 may be used at any one time.

Installing ECMPS 3.0

ECMPS 3.0 is supplied on CD-ROM. There are two versions of ECMPS 3.0, one for Windows 95/98/ME and one for Windows NT4/2000/XP. Be sure to install the proper version. To install, follow these steps:

- 1) Insert the ECMPS 3.0 CD-ROM into your CD-ROM drive.
- 2) For windows 95/98/ME expand folder ECMPS 3.0 for w9x and double-click the setup.exe program.
- 3) For windows NT/2000 expand folder ECMPS 3.0 for w2k and double-click the setup.exe program.
- 4) Follow any further instructions given to you by the ECMPS 3.0 software installation routine to complete the installation process. ECMPS 3.0 will notify you if it detects windows components that need updating. You will be given the opportunity to OK these upgrades or to terminate installation.
- 5) **Reboot your PC after ECMPS 3.0 installation.** Failure to reboot may cause the ECMPS 3.0 parallel port driver to fail to start until you reboot.

Removing ECMPS 3.0

Should you wish to remove the ECMPS 3.0 software follow these steps:

- 1) Click the Start button on the Windows desktop and then click Settings? Control Panel.
- 2) Now double-click the Add/Remove Programs icon on the Control Panel.
- 3) Select the Strobecom ECMPS 3.0 software and click Add/Remove.

Getting Help

For help in answering question regarding the ECMPS 3.0, please contact your local Tomar distributor, or your local Tomar territory manager. All Tomar distributors and territory managers are trained in the operation of the Strobecom product line.

Should you need to contact the factory you may do so via the following methods:

- By Phone at (480) 497-4400. Customer support is available from 8:00am to 4:00pm Monday through Friday, MST.
- By FAX at (480) 497-4416. Be sure to provide as much detail as possible in your FAX. Also, please include your ECMPS version and the municipality or entity that purchased the equipment. FAX requests will be reviewed during regular customer service hours.
- By E-mail via Internet at service@tomar.com. Be sure to provide as much detail as possible in your E-mail. Please include your ECMPS version and the municipality or entity that purchased the equipment. E-mail requests will be reviewed during regular customer service hours.
- By Mail at:
Tomar Electronics, Inc.
ATTN: Technical Support
2100 W. Obispo Avenue
Gilbert, AZ 85233

Be sure to provide as much detail as possible in your mail. Please include your ECMPS version and the municipality or entity that purchased the equipment.

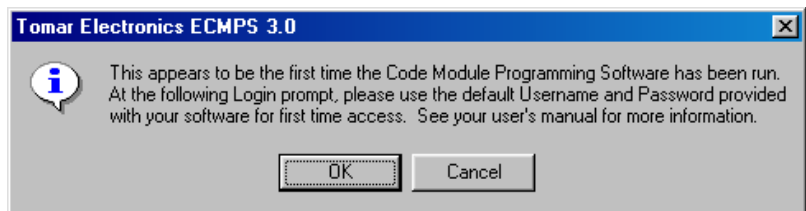
Chapter 3 – Using ECMPS 3.0

Running ECMPS 3.0 for the first time

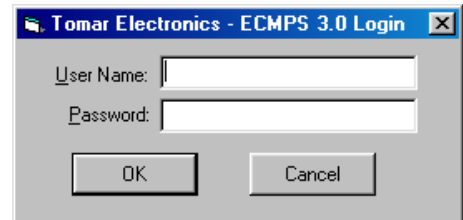
After installing the ECMPS 3.0 software, attaching the 2060-CABLE, 3060-PROGCAB, or 3065-PROGCAB to the desired port, you are ready to run the ECMPS 3.0 software.

The first time you run the software, you will be guided through a process, which sets up the program's administrator security and port drivers. This one-time process will not have to be repeated unless you uninstall and reinstall the ECMPS 3.0 software. Simply follow the steps as outlined below.

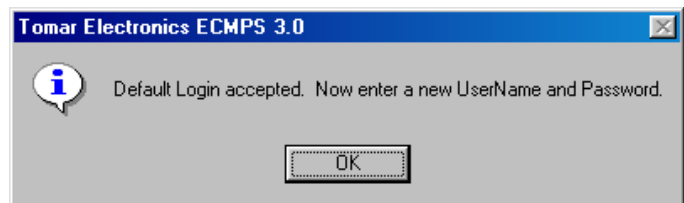
- 1) To begin program execution, click on the Start button on the Windows desktop and then click Programs? Tomar? ECMPS 3.0? ECMPS 3.0. The window shown at the right will appear indicating this is the first access of the software. Read and acknowledge the startup message.



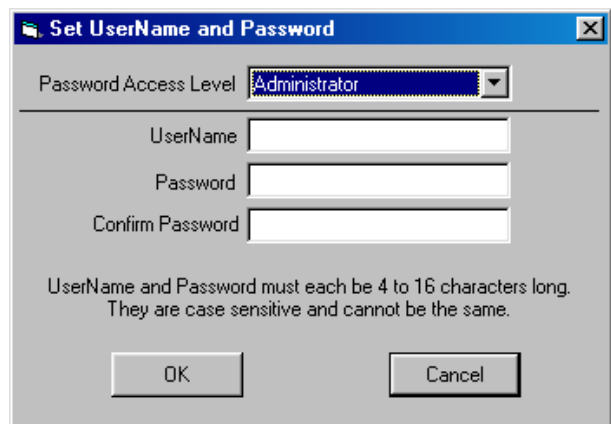
- 2) Please enter the default Username and Password provided with ECMPS 3.0 for first time access. This information is provided on a separate document as should be kept secure if you wish to maintain the ability to restrict software access.



- 3) ECMPS 3.0 will acknowledge the proper entry of the default login information. If you should make mistakes entering the default Username and Password the system will display error messages explaining what you have done wrong and presenting an opportunity to try again. If you click the Cancel button at anytime during the login process the software will terminate and you will need to reenter the default login information again. Click OK to acknowledge the acceptance of the default login and continue.



- 4) The ECMPS 3.0 software will now ask you to specify a new Administrator Username and Password. The Administrator password allows complete access to all features of ECMPS 3.0 including the ability to change parallel port configurations and set Access Control levels. Both the Username and Password must be 4 to 16 characters long and cannot be the same. They are case sensitive and may contain punctuation and numbers to provide more security. See Appendix A for more information regarding password selection.

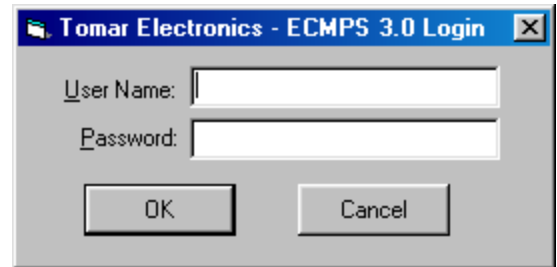


You must enter the Password in the Password location and the Confirm Password location. The new login information will be accepted only if these two entries match.

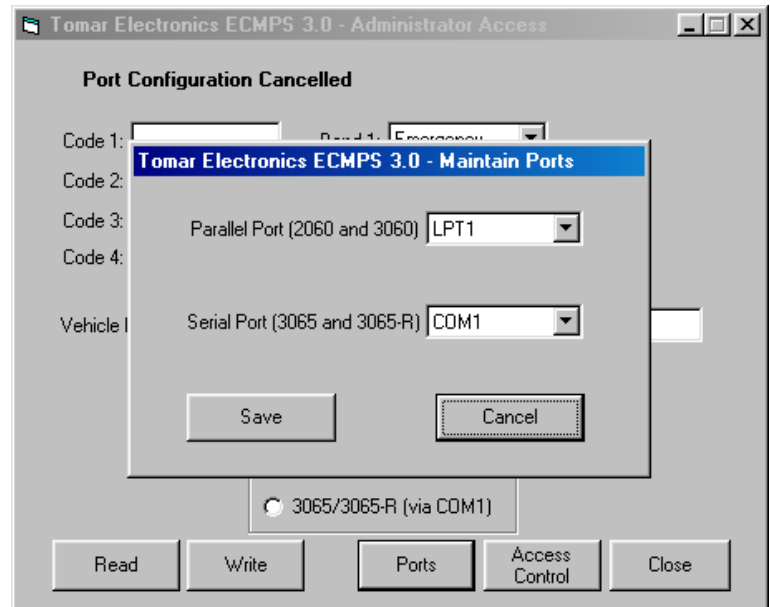
- 5) Once you have entered a properly formatted Administrator UserName and Password, the ECMPS 3.0 software will indicate its acceptance of your new login. If you make mistakes while entering the new information, the software will provide you error messages telling you what's wrong and providing an opportunity to try again. If you should click Cancel at anytime during the entry process, the software will terminate and you will need to restart the process again using the default password. Once your new administrator UserName and Password are accepted, the default login information will no longer work. Click OK to acknowledge the login accepted message and continue.



- 6) You must now login in again using the new administrator UserName and Password you entered in Step 5. Simply enter the information exactly the same way that you specified. If you click Cancel at this point the program will terminate, however, the new UserName and Password setting will be retained and must be used on reentry to the software. If you make mistakes in entering the UserName and Password, the software will provide error messages telling you what's wrong and providing an opportunity to try again.

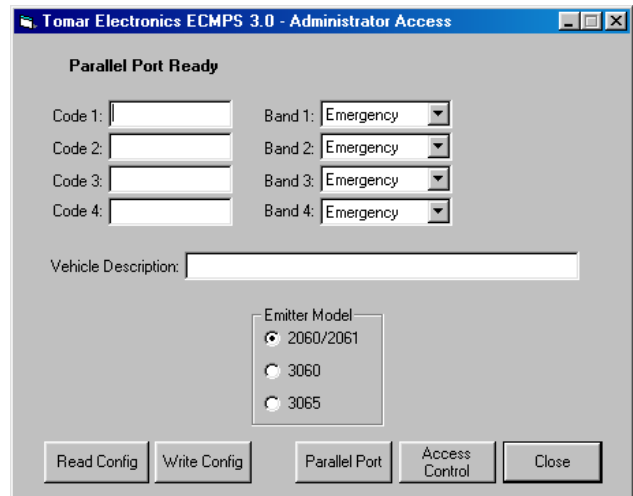


- 7) Upon successful login in step 6, the ECMPS 3.0 software will attempt to start its drivers to interface to the computer's ports. In order to do this the software will request that you select the parallel and serial ports you wish to use. Simply select the proper ports and click Save Config. You must select valid ports or you will not be able to transfer data to or from the ECM or emitter. After selecting the ports, the special first-time configuration of the software is complete. You will be presented with the main ECMPS 3.0 screen as shown below under "Using the ECMPS software to configure Code Modules".



Configuring ECMPS 3.0 Access Control Passwords

- 1) Start the ECMPS 3.0 software (click Start on the Windows desktop and then click Programs? Tomar? ECMPS 3.0? ECMPS 3.0). After providing the correct Administrator UserName and Password to gain access, you will be presented with the ECMPS main screen. (You will also reach this point after you have completed the steps above in the section "Running the ECMPS software for the first time.)



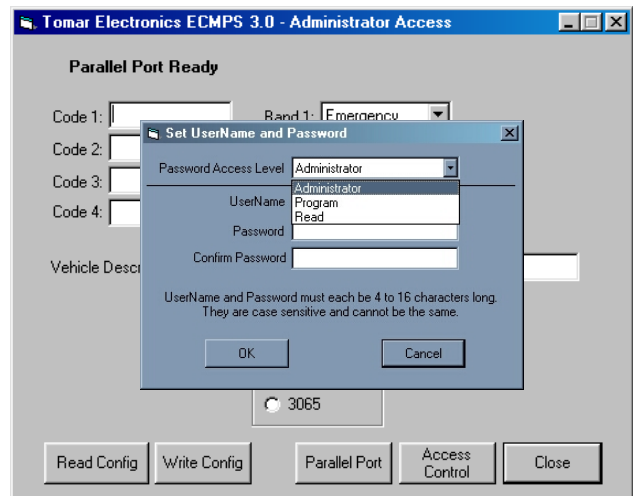
- 2) Click the Access Control Button. Three levels of security are available for configuration.

Administrator level allows the user complete access to all ECMPS 3.0 features including Access Control configuration and Parallel port settings.

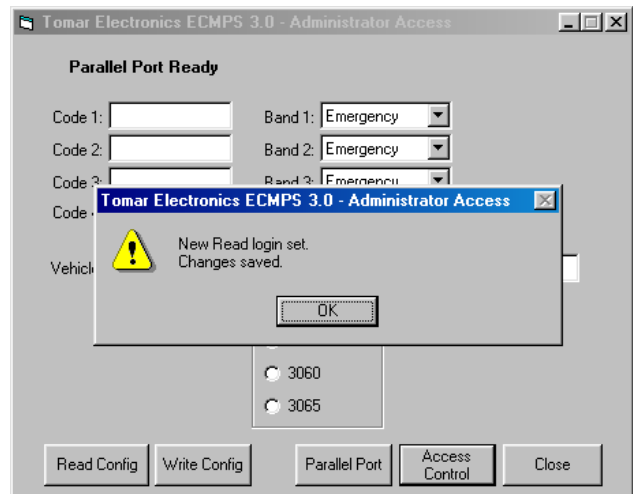
Program level allows the user to program and read emitter code information. No access is granted to Access Control or Parallel Port settings.

Read level allows the user only to read an emitters code information. The user cannot program emitters or change administrative functions.

Use the drop-down list to select the Access Control level you wish to configure. You do not need to configure access levels that you do not wish to use.



- 3) After selecting the Access Control level to set, enter a UserName and Password. You must enter the password in both the password box and the Confirm Password box. Both the UserName and Password must be 4 to 16 characters long and cannot be the same. They are case sensitive and may contain punctuation and numbers for greater security.
- 4) Click the OK button to save the newly specified login information. ECMPS 3.0 will indicate that the new Login has been accepted.
- 5) Click the Cancel button when you are finished configuring Access Control settings.



Using ECMPS 3.0 to configure Emitters

- 1) Start the ECMPS 3.0 software (click Start on the Windows desktop and then click Programs? Tomar? ECMPS 3.0? ECMPS 3.0). After providing the correct UserName and Password to gain access, you will be presented with the ECMPS 3.0 main screen. (You will also reach this point after you have completed the steps above in the section “Running the ECMPS software for the first time.)

ECMPS 3.0 will present the appropriate command buttons for the access level of the login used. The pictures to the right show the main screen shown for each access level.

The screenshot shows the 'Administrator Access' window. It features a title bar with the text 'Tomar Electronics ECMPS 3.0 - Administrator Access'. The main area is titled 'Parallel Port Ready'. It contains four input fields labeled 'Code 1' through 'Code 4', each paired with a dropdown menu labeled 'Band 1' through 'Band 4', all currently set to 'Emergency'. Below these is a 'Vehicle Description' text box. A group box labeled 'Emitter Model' contains three radio buttons: '2060/2061' (selected), '3060', and '3065'. At the bottom, there are five buttons: 'Read Config', 'Write Config', 'Parallel Port', 'Access Control', and 'Close'.

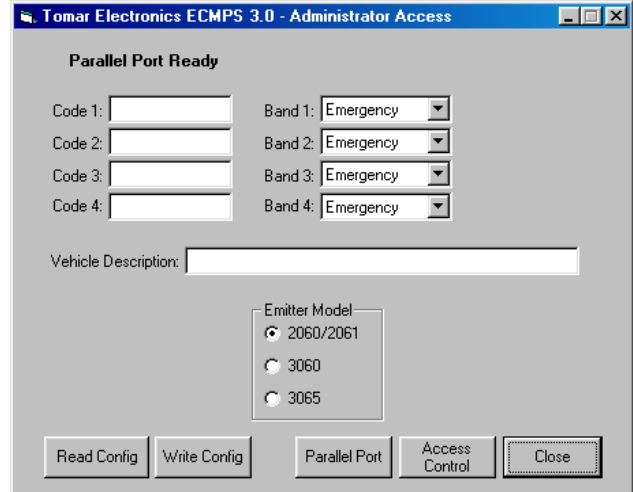
The screenshot shows the 'Program Access' window. It features a title bar with the text 'Tomar Electronics ECMPS 3.0 - Program Access'. The main area is titled 'Parallel Port Ready'. It contains four input fields labeled 'Code 1' through 'Code 4', each paired with a dropdown menu labeled 'Band 1' through 'Band 4', all currently set to 'Emergency'. Below these is a 'Vehicle Description' text box. A group box labeled 'Emitter Model' contains three radio buttons: '2060/2061' (selected), '3060', and '3065'. At the bottom, there are three buttons: 'Read Config', 'Write Config', and 'Close'.

The screenshot shows the 'Read Access' window. It features a title bar with the text 'Tomar Electronics ECMPS 3.0 - Read Access'. The main area is titled 'Parallel Port Ready'. It contains four input fields labeled 'Code 1' through 'Code 4', each paired with a dropdown menu labeled 'Band 1' through 'Band 4', all currently set to 'Emergency'. Below these is a 'Vehicle Description' text box. A group box labeled 'Emitter Model' contains three radio buttons: '2060/2061' (selected), '3060', and '3065'. At the bottom, there are two buttons: 'Read Config' and 'Close'.

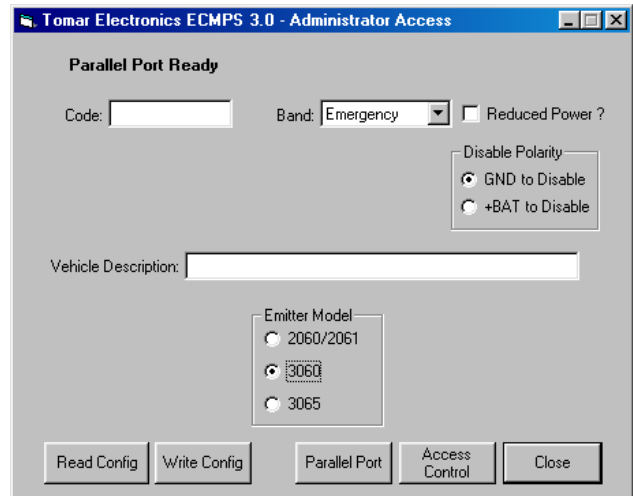
- 2) In order for ECMP3 3.0 to properly communicate with the emitter or code module you wish to configure, you must click the radio button that matches the emitter model you want to program.

The pictures at the right show the screens displayed for each emitter type when logged in with Administrator Access.

The model 2060/2061 emitter code module can store up to four codes of either emergency or transit band plus a 32 character description.

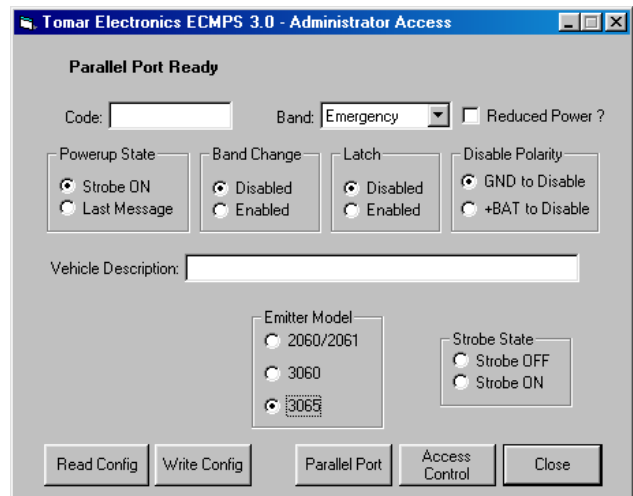


The model 3060 emitter stores one code of either emergency or transit band plus a 32 character description. The 3060 has a reduced power mode available. Selecting the reduced power mode will extend lamp life and reduce power demands for applications that do not require maximum range. Also, the polarity of the 3060 disable input can be set using ECMP3 3.0.



The model 3065 emitter has all of the configuration parameters of the 3060, plus the following:

- Latch Mode Enable/Disable
If enabled, return to strobing following a 'disable' event requires that emitter power be cycled.
- Band Change Enable/Disable
If disabled, no message received during normal operation is allowed to change the band setting.
- Powerup State
If 'Last Message' is selected, the emitter's operational state at powerup returns to the last requested setting; else, the strobe is turned on.
- Strobe State
Allows the strobe to be turned on/off for testing.



If you attempt to configure an emitter with the wrong type selected, you will not hurt the emitter. However, the data programmed into the emitter may be corrupted, requiring reprogramming. If this should happen, simply cycle the power to the emitter being configured, select the proper emitter model radio button, and try again.

Reading Code Information

To read the data stored in a 2060-CODE or a 3060 or 3065 emitter, simply connect the unit to the 2060-CABLE, 3060-PROGCAB, or 3065-PROGCAB cable and click the Read Config button. ECMPS 3.0 will then query the unit for the contents of its non-volatile memory and display it.

The bold status line near the top of the ECMPS window will show the progress of the communications with the attached emitter.

The screenshot shows the 'Tomar Electronics ECMPS 3.0 - Administrator Access' window. The title bar is blue with the application name and standard window controls. The main area is titled 'Parallel Port Ready'. It features a 'Code' input field with '110', a 'Band' dropdown menu set to 'Emergency', and a 'Reduced Power?' checkbox which is unchecked. Below these is a 'Disable Polarity' section with two radio buttons: 'GND to Disable' (unchecked) and '+BAT to Disable' (checked). A 'Vehicle Description' field contains 'Demonstration 3060'. An 'Emitter Model' section has three radio buttons: '2060/2061' (unchecked), '3060' (checked), and '3065' (unchecked). At the bottom, there are five buttons: 'Read Config', 'Write Config', 'Parallel Port', 'Access Control', and 'Close'.

Writing Code Information

To write new data into an emitter simply select the desired Code and Band for each entry you wish to use, enter a vehicle description and click the Write Config button. ECMPS 3.0 will write the new data into the non-volatile memory of the emitter and then read it back to verify that it was stored properly. ***For the 2060 and the 3060,*** the number of times the emitter has been programmed is also indicated. There is no practical limit to the number of times you can program an emitter, but the internal program counter will roll over after 255 times.

Most Strobecom II systems are set up to utilize only Code 1 of an emitter. However, for the 2060, more sophisticated systems may use up to four codes to indicate different modes of vehicle operation. These codes are then selected by switches or sensors within the vehicle. It is best to fully plan the system before the assignment of codes to vehicles.

The screenshot shows the 'Tomar Electronics ECMPS 3.0 - Administrator Access' window. The title bar is blue with the application name and standard window controls. The main area is titled 'Parallel Port Ready'. It features a 'Code' input field with '225', a 'Band' dropdown menu set to 'Transit', and a 'Reduced Power?' checkbox which is checked. Below these is a 'Disable Polarity' section with two radio buttons: 'GND to Disable' (unchecked) and '+BAT to Disable' (checked). A 'Vehicle Description' field contains 'Demonstration 3060 Reprogrammed'. An 'Emitter Model' section has three radio buttons: '2060/2061' (unchecked), '3060' (checked), and '3065' (unchecked). At the bottom, there are five buttons: 'Read Config', 'Write Config', 'Parallel Port', 'Access Control', and 'Close'.

It is important to remember that if you assign a code value outside the valid code range set in the Strobecom II Optical Signal Processors, the code will be accepted into the ECM but rejected by the OSP's. Careful coordination between the ECM codes and the OSP valid code range is required for proper system operation. In any event, each code must be between 0 and 65000.

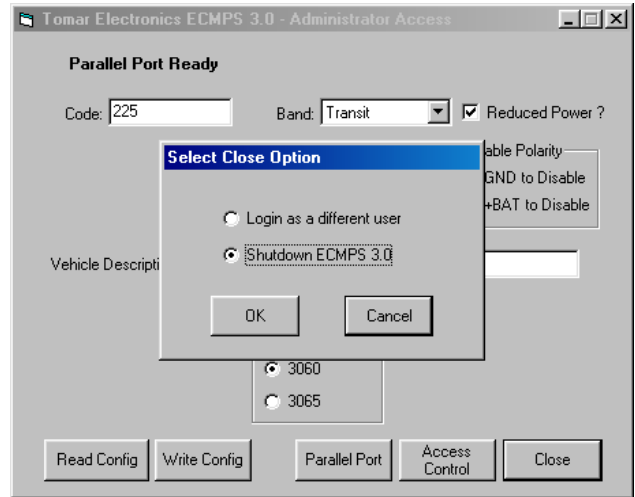
Changing the ECMP3 3.0 ports

If it becomes necessary to change the parallel port base address for any reason simply click on the Parallel Port button to bring up the same port assignment window used during initial setup.

Terminating the software

To stop using ECMP3 3.0, click the Close button. A close option window will pop up. Choose whether to shutdown ECMP3 3.0 or to Login as a different user.

Click OK to carryout you choice or click Cancel to go back to ECMP3 3.0.



Appendix A – A Word on Passwords

Sound password selection is probably the single most important item in preventing unauthorized ECMPS software access. Unless the password is chosen properly, nothing else matters. No software security system is foolproof, but following these simple guidelines should help prevent unauthorized access to your ECMPS software.

Default Passwords

One of the most common password problems is the built-in or default password. This password must be supplied in order to allow the authorized user to install and setup the ECMPS software. However, because the user often forgets to delete or change the default password, Tomar Electronics has designed to ECMPS software to force the user to change the default password in order to complete ECMPS setup. You simply cannot run the software until you login with a new UserName and Password.

Dumb Passwords

In general, users of software consider passwords as annoyances that get in their way. Therefore, passwords are usually chosen to be easy to remember and quick to type in. This often leads to the choice of a “dumb password”. A dumb password is easy for the user to remember, but also easy for most hackers to figure out. Studies reveal that most user-defined passwords are derivations of their own name. The top three hacks to any system are:

- The user’s name (e.g. “scott”)
- The user’s name backwards (e.g. “ttocs”)
- The two together (e.g. “scottttocs”)

Password Summary

The primary objective of choosing a password is to make it hard to guess. If an unauthorized user cannot guess a password quickly, he will generally move on. Here are some guidelines for choosing passwords.

Never allow passwords composed of:

- UserNames in any form
- Personal names, license plate numbers, telephone numbers, etc.
- All numbers
- Common words contained in dictionaries
- Less than six characters
- Names of famous people (e.g. “Bill Gates”)

A pass phrase is a good way to secure your system. A pass phrase is a group of words, for example, “Oh happy day”. A pass phrase is quite hard to guess but easy to remember. Remember to limit the length of the phrase to 16 characters.

The best password is a combination of the pass phrase and a punctuation character, for example, “Algebra\$Pasture”. Note that using two words from the same context is almost as bad as a dumb password. For example “sports*car” is not a good password because the two words are often found together.