

## **EMCS Home Programmer Operating Instructions**

The EMCS Home Programmer utility will allow you to upgrade your APR EMCS equipped engine control unit to the latest software version available from APR. The software file for your particular car can be found elsewhere on the website. You will need the EMCS Home Programmer utility along with the EMCS home computer upgrade interface and the appropriate software file for your car in order to update your software. The EMCS Home Programmer utility can be downloaded from our website as can the latest software version for your particular car. Please contact APR for an EMCS home computer upgrade interface.

### **What you need to update/upgrade you APR EMCS ECU:**

IBM PC-compatible running Windows 95 or greater

APR EMCS Home Programmer Utility (download off our website)

EMCS equipped ECU

EMCS Home Programmer Computer Upgrade Interface (available from APR)

Latest EMCS software (APE file) for your particular vehicle (download off our website)

\*Appropriate EMCS license file from APR (only needed if you are adding additional EMCS options)



EMCS Home Programmer Interface

### **How to install the APR EMCS Home Programmer Software:**

The APR EMCS Home Programmer utility is a stand-alone executable file. Simply download the file from our website and copy the file onto a new directory on your laptop.

### **How to download the appropriate '.APE' file for your particular vehicle:**

You can download the latest EMCS software for your particular vehicle from our website. (Some special software programs may not be available for download.) EMCS software can be found under the customer support section of our site. These files contain all the data that is actually used to program the EMCS module and that runs the engine. Each file usually contains multiple programs. For example, one file may contain 4 or more different programs- stock, standard performance mode, 100 Octane race, and valet. You will not need to download multiple files to load multiple programs.

All of our engine software files end in the extension '.APE' and we will refer to them as '.APE' or simply APE files. Simply choose the file that matches the description of your car, your ECU part number, and the level of performance modifications of your vehicle. Save the APE file to your hard-drive.

## **Preparing to Program – EMCS 1 Customers:**

To reprogram your ECU you must first remove the ECU from the car. Instructions for ECU removal can be found on our website.

Plug the serial cable supplied with the EMCS programmer into an open serial port on your computer (note which port you are using as you will need to specify which port this is later.) Plug the other end of the serial cable into the EMCS programmer. Attach the power supply to the EMCS programmer and plug the power supply into a 120VAC power outlet. Attach one end of the ribbon cable to the EMCS programmer box.

The next step is to open the ECU itself. Do so by removing the four torx screws holding the case together. Place the ECU circuit board on a non-metallic table. Locate the appropriate EMCS adaptor (supplied with the programmer interface.) Plug the EMCS adaptor into the other end of the ribbon cable and then plug the appropriate EMCS adaptor into the EMCS module making sure that the adaptor is fully seated in the socket. Please note that there are two different adaptors that could be used depending on the sex of the plug on your particular module. **DO NOT APPLY EXCESSIVE FORCE OF ANY KIND TO THE EMCS MODULE. DOING SO COULD DAMAGE THE TRACES HOLDING THE EMCS MODULE TO THE CIRCUIT BOARD CAUSING POTENTIAL IRREPAIRABLE DAMAGE TO THE ECU BOARD.**

### **Important Static Caution:**

It is imperative to use caution when handling the ECU to avoid damaging the electronics. Static electricity from your body or other objects can damage the ECU. Always handle the ECU by the edges of the circuit board. Use extra caution in humid environments or any areas in which static electricity is known to be a problem. If available, use a grounding strap.

## Preparing to Program – EMCS 2 Customers:

To reprogram your ECU you must first remove the ECU from the car. Instructions for ECU removal can be found on our website.

Plug the serial cable supplied with the EMCS programmer into an open serial port on your computer (note which port you are using as you will need to specify which port this is later.) Plug the other end of the serial cable into the EMCS programmer. Attach the power supply to the EMCS programmer and plug the power supply into a 120VAC power outlet. Attach one end of the ribbon cable to the EMCS programmer box.

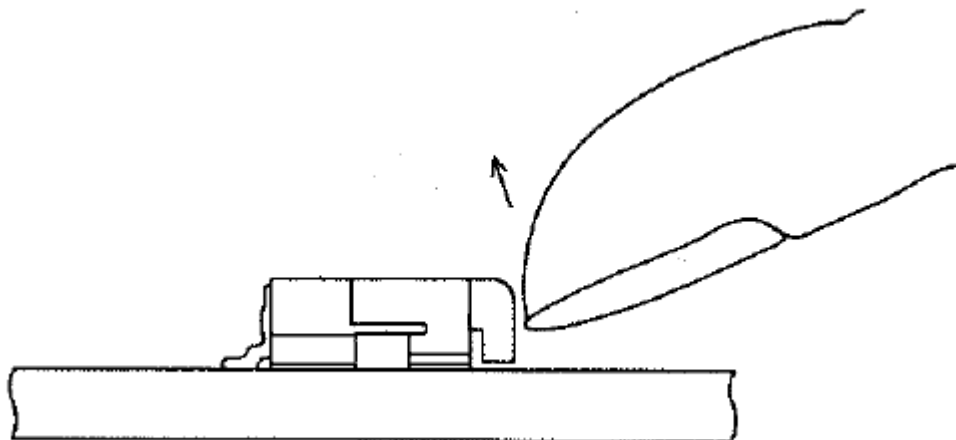
The next step is to open the ECU itself. Do so by removing the four torx screws holding the case together. Place the ECU circuit board on a non-metallic table. Locate the EMCS 2 adaptor (supplied with the programmer interface.) Connect the EMCS 2 adaptor as shown in the steps below. DO NOT APPLY EXCESSIVE FORCE OF ANY KIND TO THE EMCS MODULE. DOING SO COULD DAMAGE THE TRACES HOLDING THE EMCS MODULE TO THE CIRCUIT BOARD CAUSING POTENTIAL IRREPAIRABLE DAMAGE TO THE ECU BOARD.

### Important Static Caution:

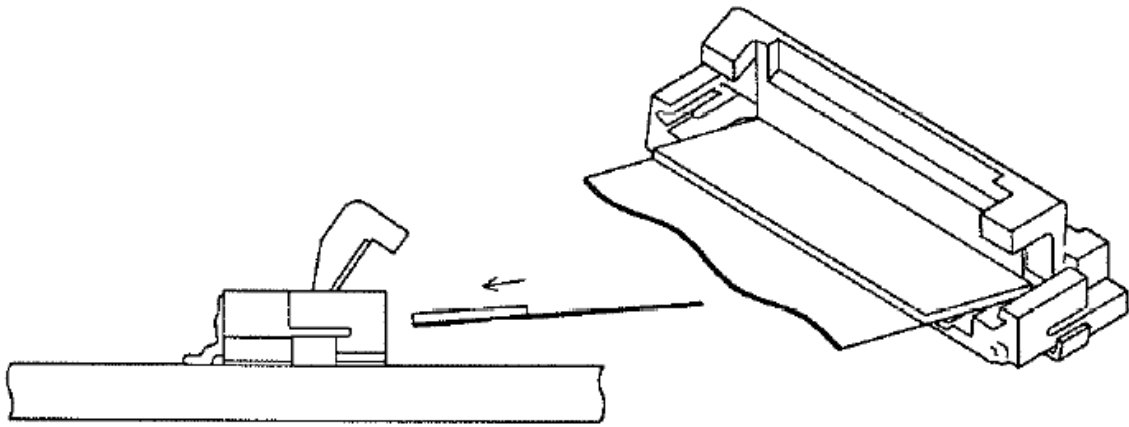
It is imperative to use caution when handling the ECU to avoid damaging the electronics. Static electricity from your body or other objects can damage the ECU. Always handle the ECU by the edges of the circuit board. Use extra caution in humid environments or any areas in which static electricity is known to be a problem. If available, use a grounding strap.

### EMCS 2 Ribbon Insertion Method

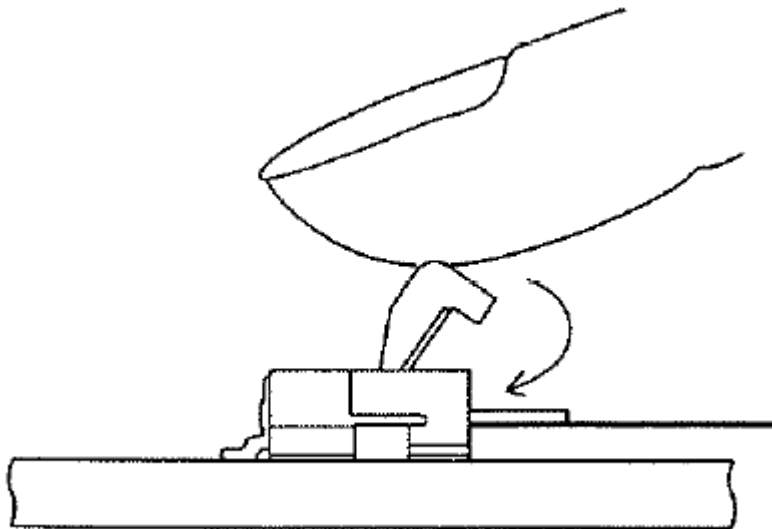
1. Lift up the lock lever. The lever can be operated easily by flipping it up with the nail of the thumb or index finger.

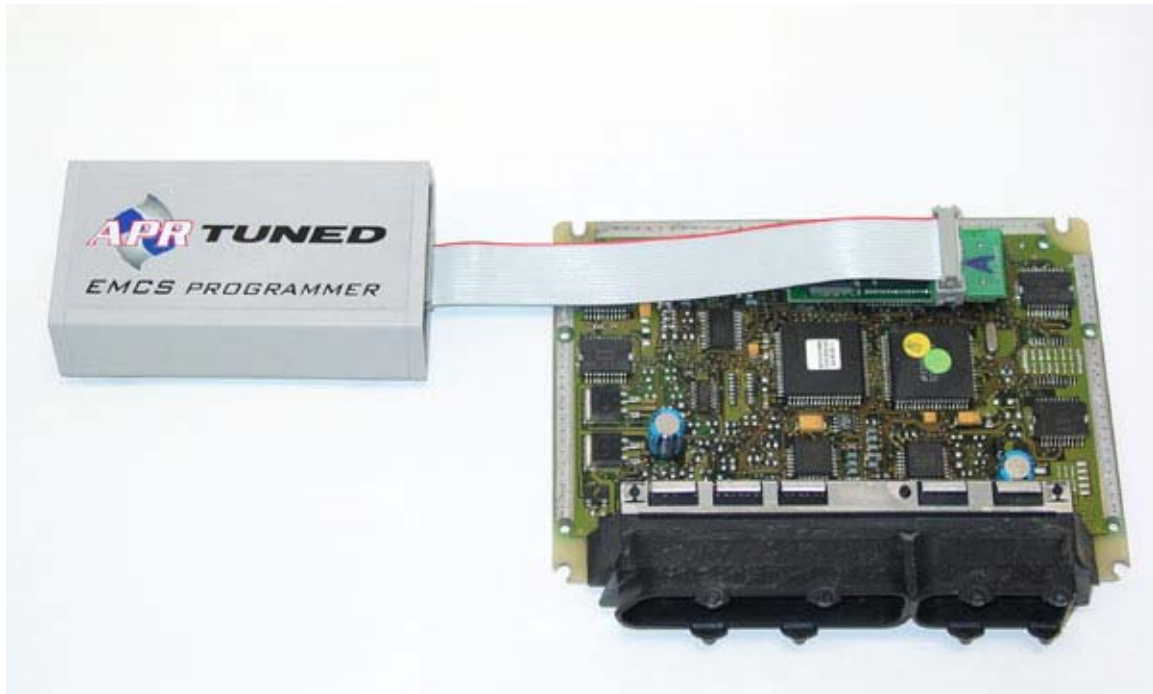


2. Insert with the conducting surface of the ribbon facing downward. Insert so that the ribbon is perpendicular to the connector.



3. Press down the lock lever. When the ribbon is half inserted or the insertion is quite off, the lock lever will catch and the ribbon will be raised upward. Should this occur, remove the ribbon using the extraction method and perform the insertion operation again.





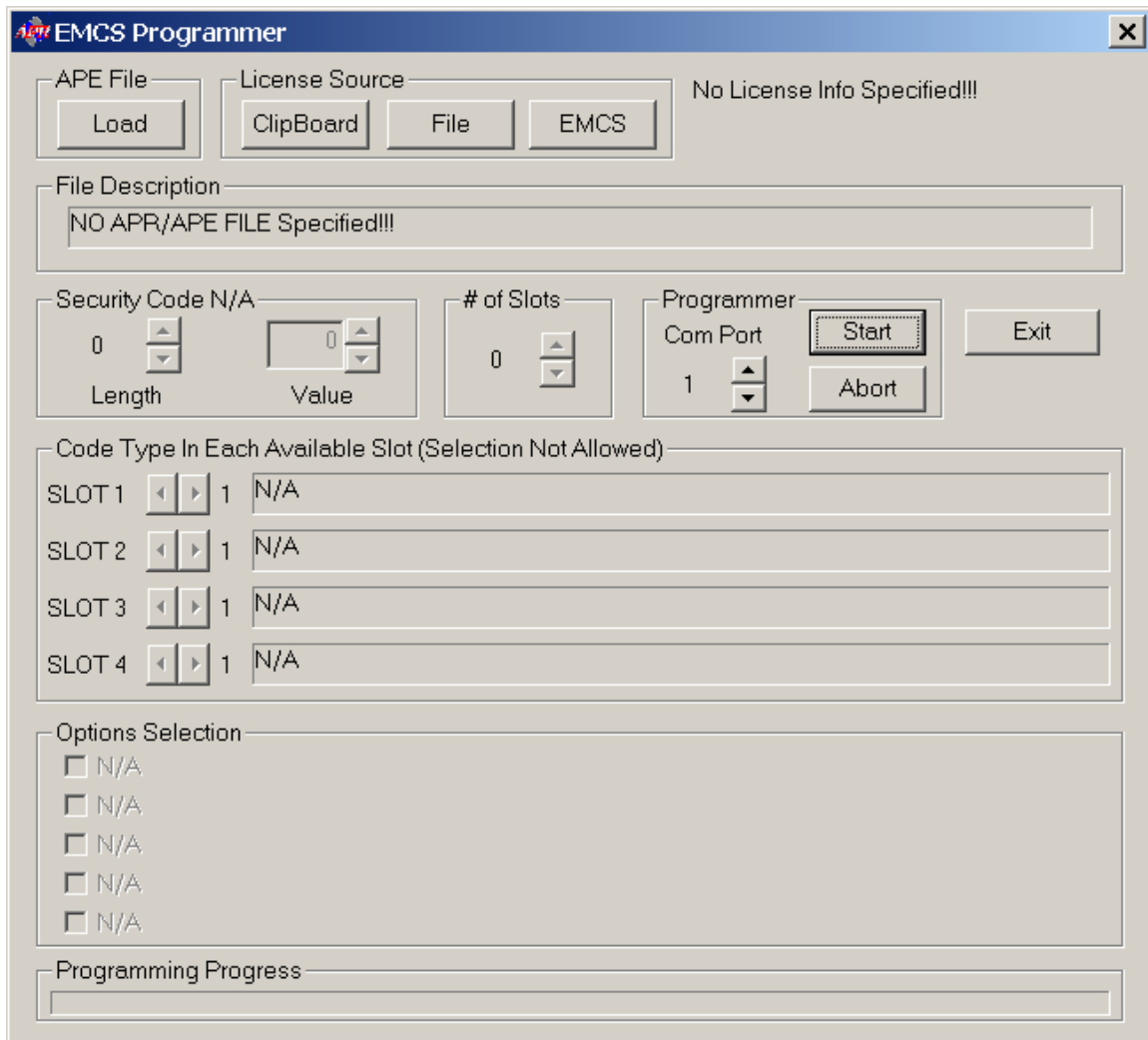
EMCS Programmer Connected to EMCS 1 Module



EMCS Programmer Connected to EMCS 2 Module

## Programming the module:

The next step after having completed all of the hardware connections and the downloading of the software is to program the EMCS module. Open the EMCS Home Programmer Utility by double clicking on the respective file that you saved to your hard-drive. You should see the dialog window shown below appear on your screen:



The screenshot shows the 'EMCS Programmer' dialog box. At the top, there are buttons for 'APE File' (Load), 'License Source' (Clipboard, File, EMCS), and a status message 'No License Info Specified!!!'. Below this is a 'File Description' field containing 'NO APR/APE FILE Specified!!!'. The 'Security Code N/A' section has 'Length' and 'Value' spinners, both set to 0. The '# of Slots' spinner is also set to 0. The 'Programmer' section has a 'Com Port' spinner set to 1, and 'Start' and 'Abort' buttons. An 'Exit' button is also present. The 'Code Type In Each Available Slot (Selection Not Allowed)' section lists four slots, each with a spinner set to 1 and a text field containing 'N/A'. The 'Options Selection' section has five unchecked checkboxes, each labeled 'N/A'. At the bottom is a 'Programming Progress' bar.

EMCS Home Programmer Dialog Window

Once you are at this window, follow these steps to program the module:

### Step 1: Select the COM port

Using the toggle buttons, select the COM port corresponding to the port that the programmer is attached to.

## **Step 2: Select an APE file**

Hit the 'Load' button. Select the appropriate APE file by navigating to the file that you saved. Be sure to use the correct APE file for your car.

## **Step 3: Select a License Source**

For step 3, follow one of the following chooses that applies most directly:

### **Updating to a later software version-**

If you are updating software to the latest version and will not be adding any additional EMCS features, then simply select 'EMCS' under license source. It will take a moment for the licensing information to be downloaded from the EMCS module. After the licensing data is successfully in memory, you should see the text in the upper right-hand corner of the window change from 'No License Info Specified!!!!' to a read-out of the licensing information for the ECU. After the licensing information has been read in you can proceed to step 4.

Note for Early EMCS Customers- EMCS modules that were purchased from APR prior to mid-December 2000 will not have the necessary licensing information on the EMCS module and will require a license file from APR. Once this license file is obtained and the module is reprogrammed, subsequent burns will not require a license file unless features are added or to add access to special programs. There is no difference between the EMCS hardware on these earlier units from later EMCS1 boards.

### **Adding additional EMCS features-**

If you will be adding additional EMCS features (such as additional program slots), then you will need to obtain a license file from APR. To generate your license file, APR will need your module's serial number. This number can often be retrieved directly from APR's database but in some circumstances but in sometimes it may be required that you retrieve the EMCS module's serial number and provide APR with this number. The serial number can be retrieved by following the procedure above and selecting 'EMCS' as a license source.

Assuming you have a valid license file, the next step is to specify the license file as the license source. To do so, select the 'File' button under 'License Source'. Next, simply navigate to the location of the license file and select the file. You should now see the licensing information displayed on your screen in the upper right-hand corner of the dialog window.

Note that the next time you program your EMCS module you will not need to select this file for your license source as the new licensing information will be



appended to your EMCS module's internal memory. Simply use 'EMCS' as the license source in these cases.

### **Special Software Versions-**

Some special software programs require special license codes for activation (such as the stage 3 software for the 1.8T cars.) To install this software you must have the appropriate license file for the program and your particular EMCS module serial number. To select the license file as the license source, follow the instructions above under 'Adding additional EMCS features.'

## **Step 4: Select the Program File and Configure Programming Options**

The next step is to specify the engine program or APE file. To do so simply click on the 'Load' button under 'APE File'. Navigate to the appropriate location on your computer and select the APE file that you downloaded.

Now you will need to set up your programming options:

### **Security Code-**

If you have license permits for a security code, you may activate the security option by selecting the length of the security code (1-4 digits) and specifying the security code desired.

NOTE: You will need your security code to access any EMCS functions on your module. If you lose your security code, you may retrieve it again by plugging the EMCS module into the programmer and selecting 'EMCS' under 'License Source'. The security code will be displayed on the screen. You may change your security code by reprogramming your EMCS module and selecting a different security code.

### **Set up your Programming Slots-**

Depending on how your ECU is optioned, you may select up to four different programs to be loaded onto your EMCS module at one time. You can swap between those programs by using the EMCS FlipSwitch feature. The program in each slot can be specified and you are not required to select the programs in any particular order. If you do not have the FlipSwitch feature, you will simply select the program that you would like to run in the 'Slot 1' box.

First toggle the '# of Programs' button until you have selected the number desired. Then toggle the button next to each slot used until the appropriate programs are selected for each slot. On DBW (drive-by-wire) vehicles, slot 1 will correspond to the program selected when the dash light blinks once per second, slot 2 corresponds to two per second, and so on. On non-DBW

vehicles, slot 1 corresponds to a single button push, slot 2 corresponds to a double push, etc.

**CAUTION:** Take careful note of the programs selected and the order of the programs. Certain programs require special fuels or hardware and can cause serious damage if run with improper fuel or hardware. Always be attentive when first using your reprogrammed ECU in your vehicle; listen carefully for predetonation or other unwanted engine sounds. APR cannot be held responsible for any damage resulting from reprogramming errors.

### Other Programming Options-

Check the checkbox next to any available options that you wish to enable (you must have licensing privileges to use optional features.)

The screenshot shows the EMCS Programmer utility window. The title bar reads "EMCS Programmer". The interface includes several sections:

- APE File:** A "Load" button.
- License Source:** Buttons for "Clipboard", "File", and "EMCS".
- Settings From License File:** Displays "Serial #1432; 2 Slots; SC OFF" and "Options: 1 0 0 0 0; FileID= 0000".
- File Description:** A text box containing "TITLE Audi A4/Passat NA MY1997-1999.5 1.8T 5spd. 8D0907557P D07 Stage 1/2 V3.0".
- Security Code N/A:** Includes a "Length" spinner set to 0 and a "Value" spinner set to 0.
- # of Slots:** A spinner set to 2.
- Programmer:** Includes a "Com Port" spinner set to 1, and "Start", "Abort", and "Exit" buttons.
- Code Type Selection For Each Available Slot:** A table with 4 slots:

| Slot   | Count | Type          |
|--------|-------|---------------|
| SLOT 1 | 1     | Stock         |
| SLOT 2 | 2     | 91+ Oct. V3.0 |
| SLOT 3 | 3     | N/A           |
| SLOT 4 | 3     | N/A           |
- Options Selection:** A list of checkboxes:
  - ☒ ENABLE TB ALIGN / DTC ERASE
  - ☐ N/A
  - ☐ N/A
  - ☐ N/A
  - ☐ N/A
- Programming Progress:** A progress bar at the bottom.

EMCS Programmer Utility Ready for Programming

## **Step 5: Programming the EMCS Module**

Once you have established your licensing privileges, selected an APE file and you have selected the appropriate COM port, you can begin programming the module. Do so by pressing the 'Start' button. It will take approximately five minutes for the module to program.

## **Reinstall the ECU in the vehicle**

After successfully programming the module, unplug the ECU from the programmer and screw the case back together. Reinstall the ECU in the vehicle.

## **Version Information**

V3.0 – Adds support for larger EMCS2 files (Audi A4 2002, VW Golf 2003, etc.)

V2.0 and earlier – Older versions, no additional version information available.

## **Troubleshooting**

Most problems are self-prompting (the program will tell you what things need to be checked.) If you encounter a problem that cannot be resolved, contact our customer support via phone or e-mail.

Customer Support:

Ph.    1-800-680-7921  
       1-334-502-5181

Technical Support e-mail address:

[tech@goapr.com](mailto:tech@goapr.com)