All Keys Lost EEPROM 90s/Early 200s Lexus/Toyota Program Under $25 Writeup

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Immobilizer Hacking for Lost Keys or Swapped ECU

Here's how to reprogram your car's engine immobilizer to program new keys in the event of lost keys or a swapped ECU.

I recently bought a 2001 LX470 from a junkyard with no keys and researched many options. I found the most popular way to virginize the IC900 EEPROM 93C56 chip on the ECU. I ordered the CH341a reader set from Ebay for about $18 and so it started. It did not work at first as many things don't. That was followed by well over 30 hours of research and testing and only finding this method to work.

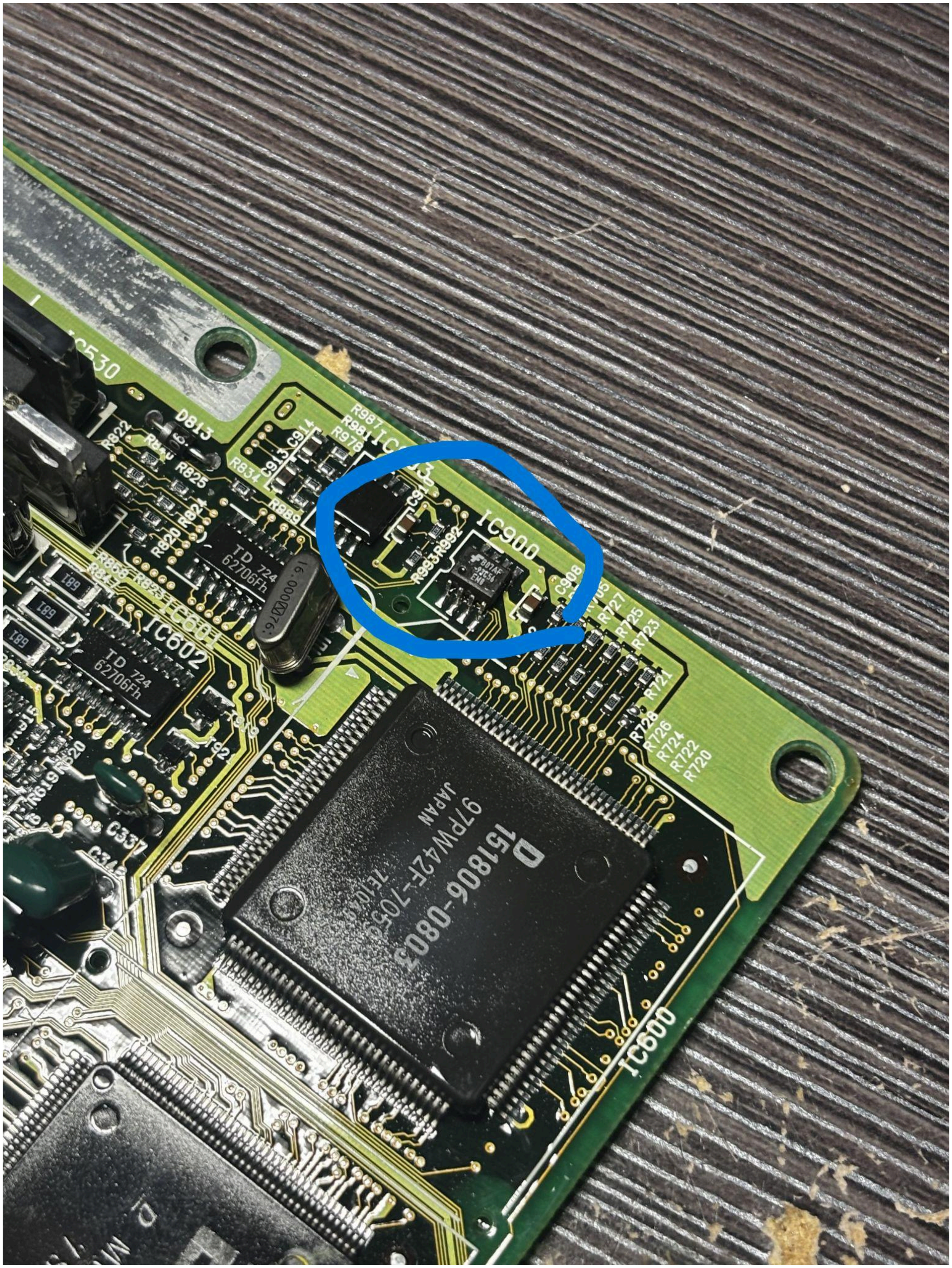
Materials

Windows Computer
ASProgrammer software and drivers - https://www.onetransistor.eu/2018/11/use-ch341a-with-asprogrammer-on-windows.html
CH341a Programmer - https://www.amazon.com/HiLetgo-Programmer-CH341A-Burner-EEPROM/dp/B014VSGH4Y/ref=sr_1_1_sspa?sr=8-1-spons&sp_csd=d2lkZ2V0TmFtZT1zcF9hdGY&psc=1
Arduino Jumper Wires - https://www.amazon.com/California-JOS-Breadboard-Optional-Multicolored/dp/B0BRTHR2RL/ref=sr_1_5?sr=8-5
Soldering and Heat station - https://www.amazon.com/BAKON-881-Soldering-Correction-Tweezers/dp/B0CG7KT1TY
Tweezers

Procedure

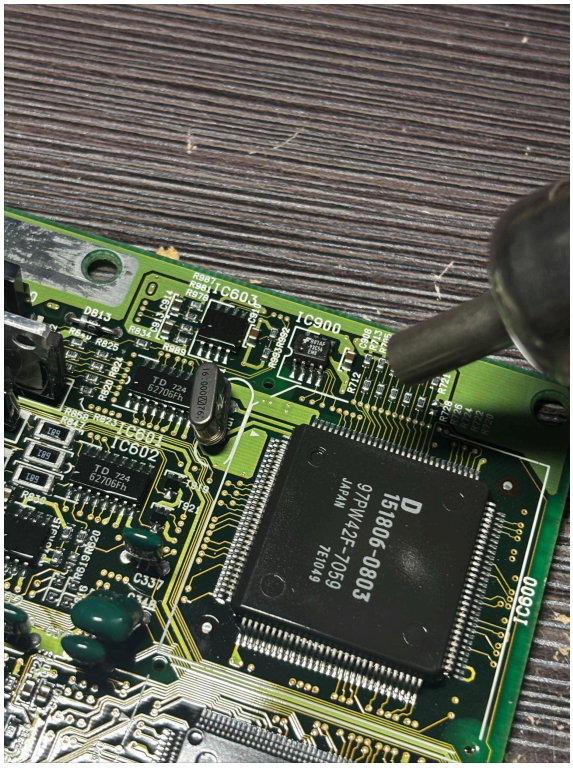
First we need to desolder the chip from the ECU, some people try to use the test clip in circuit, but it can cause issues and 30 seconds with a hot air solder station, steady hands, and tweezers and its off.

The chip we are looking for is the IC900 chip which stores the key information. Take a picture of the orientation when you reinstall it.

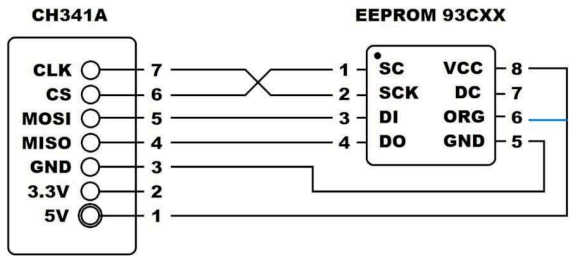


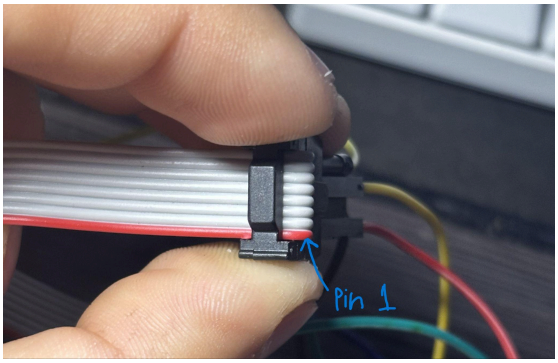
IC530
D813
R825
R834
C913
C914
R987
R981
R978
R989
IC900
R993
R992
C908
IC601
IC602
TD 724
62706Fh
16.000
R727
R725
R723
R721
R728
R726
R724
R722
R720
151806-0803
97PW42F-705
JAPAN
IC600

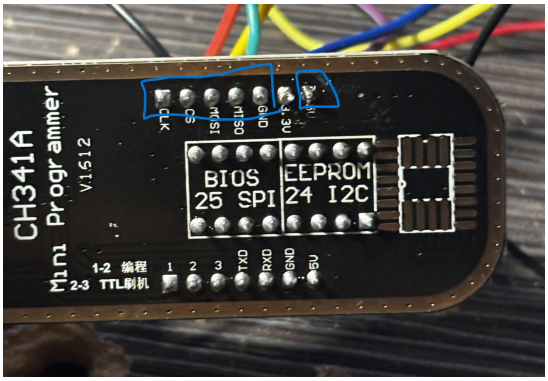
Next set your hot air to 300-380 degrees celsius and hover it around the legs of the chip and use tweezers as it heats up to see if it loosens up. Then carefully remove the chip with the tweezers and set it off to the side.

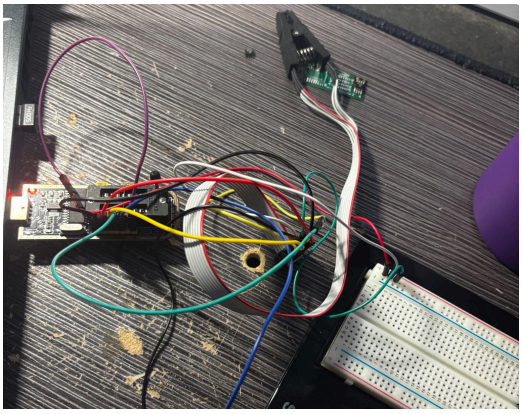


Now we need to get the CH341a set up. You will be utilizing the pins on the board and follow the pinout I will provide. Use the jumper wires to insert them into the female connectors of the test clip that comes with the CH341a.



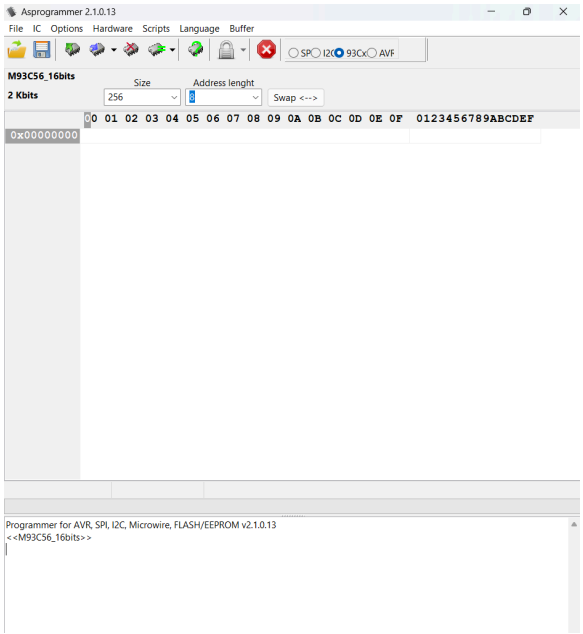


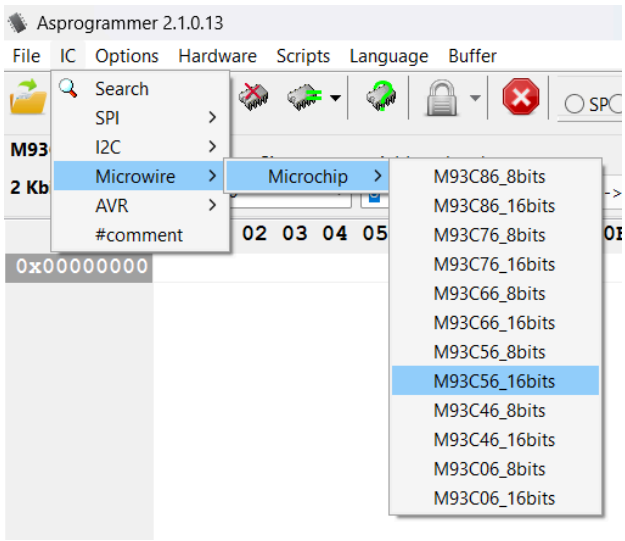




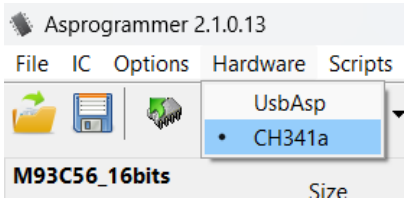
I used a breadboard to connect the ORG pin to VCC but there are other methods to do it. It was very messy but functional.

Next go onto your computer and install AsProgrammer and the CH341a drivers from the link at the beginning. Your going to need to choose the right chip, in my case a 93C56. (16 Bit for most automotive uses)

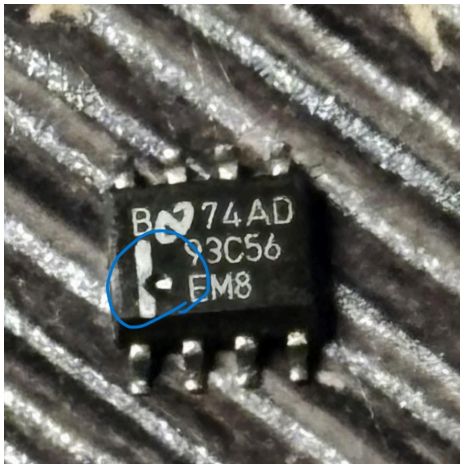


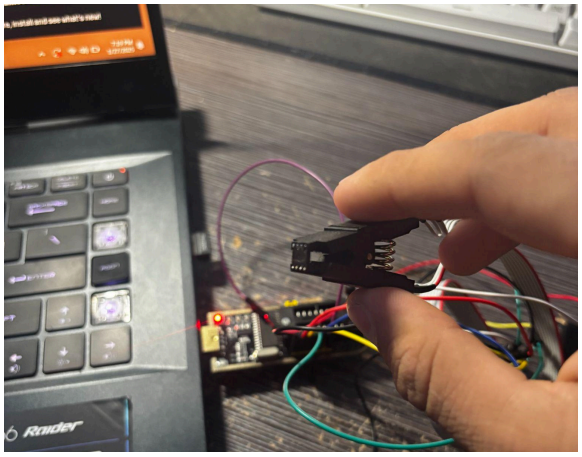


Next plug in your CH341a into a USB port and choose it in AsProgrammer.

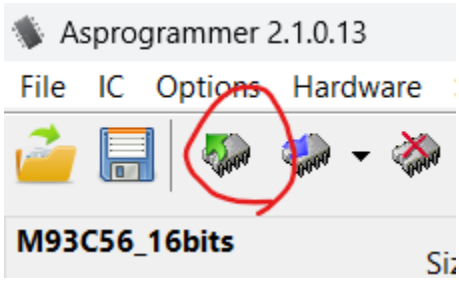


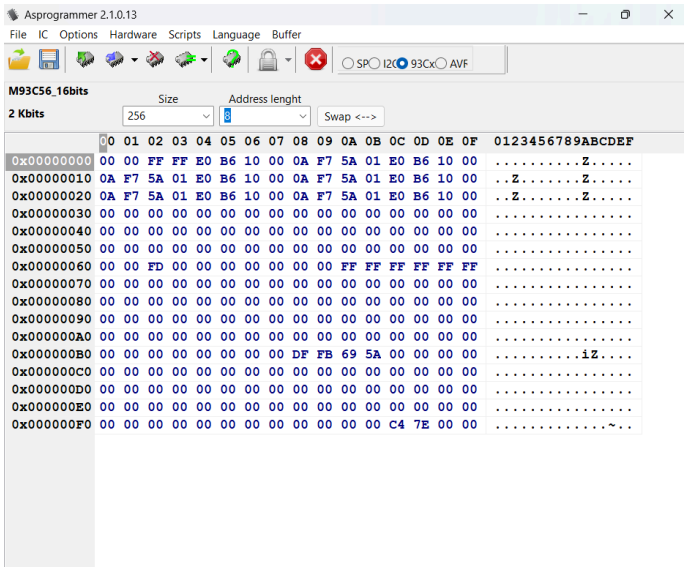
Now hook the test clip onto the chip where the red wire (pin 1) goes to the corner with the dot on the chip.



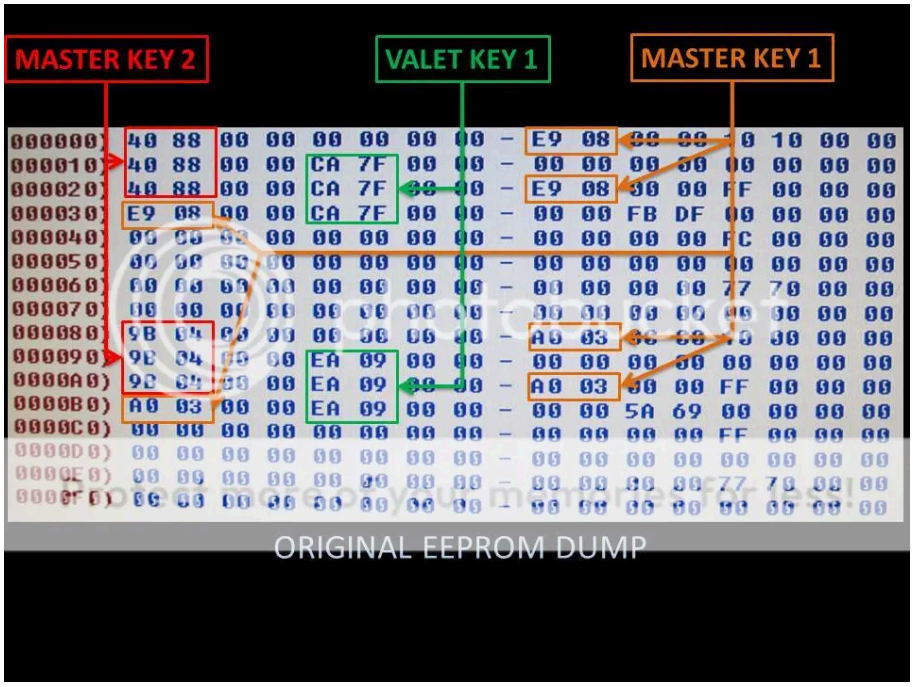


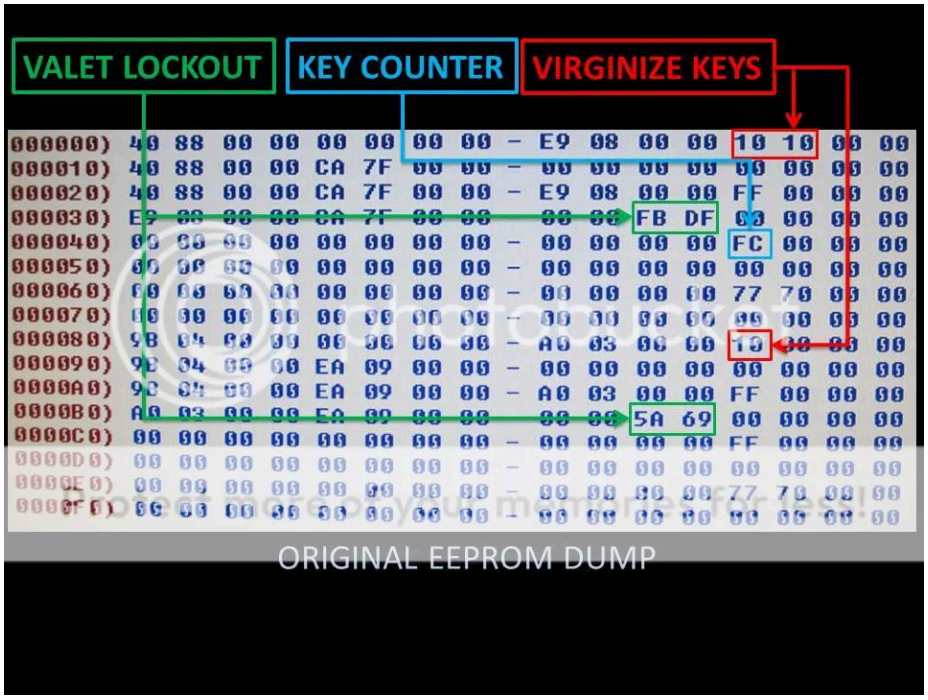
Now click the read IC option in AsProgrammer.

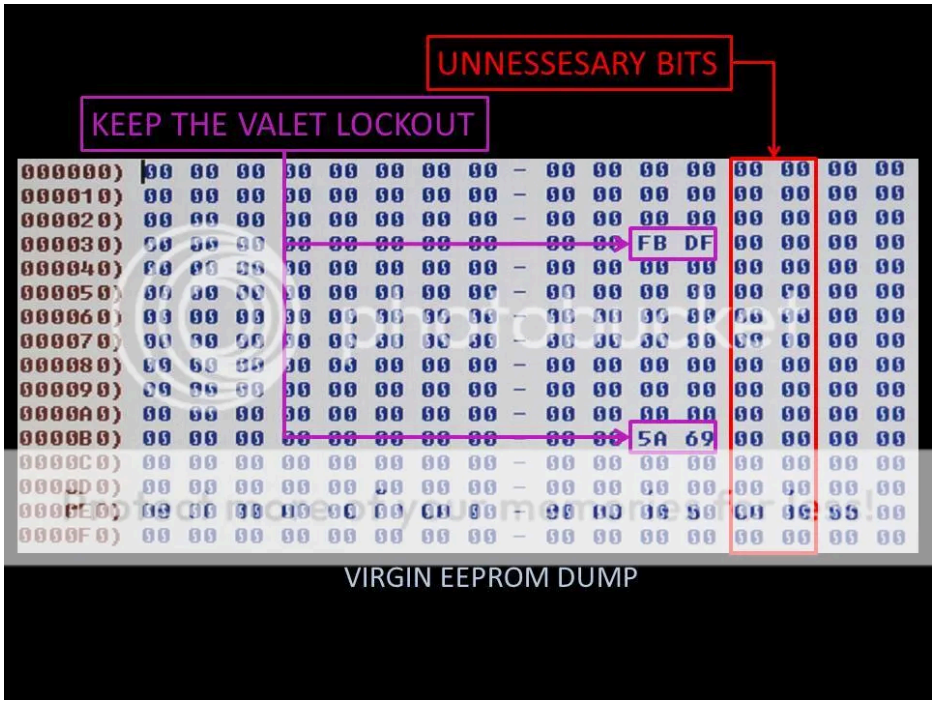




It will look something like this. This is the original key information that is now useless. Now you want to either open a virginized hex file for your car or follow directions to virginize using these pics.

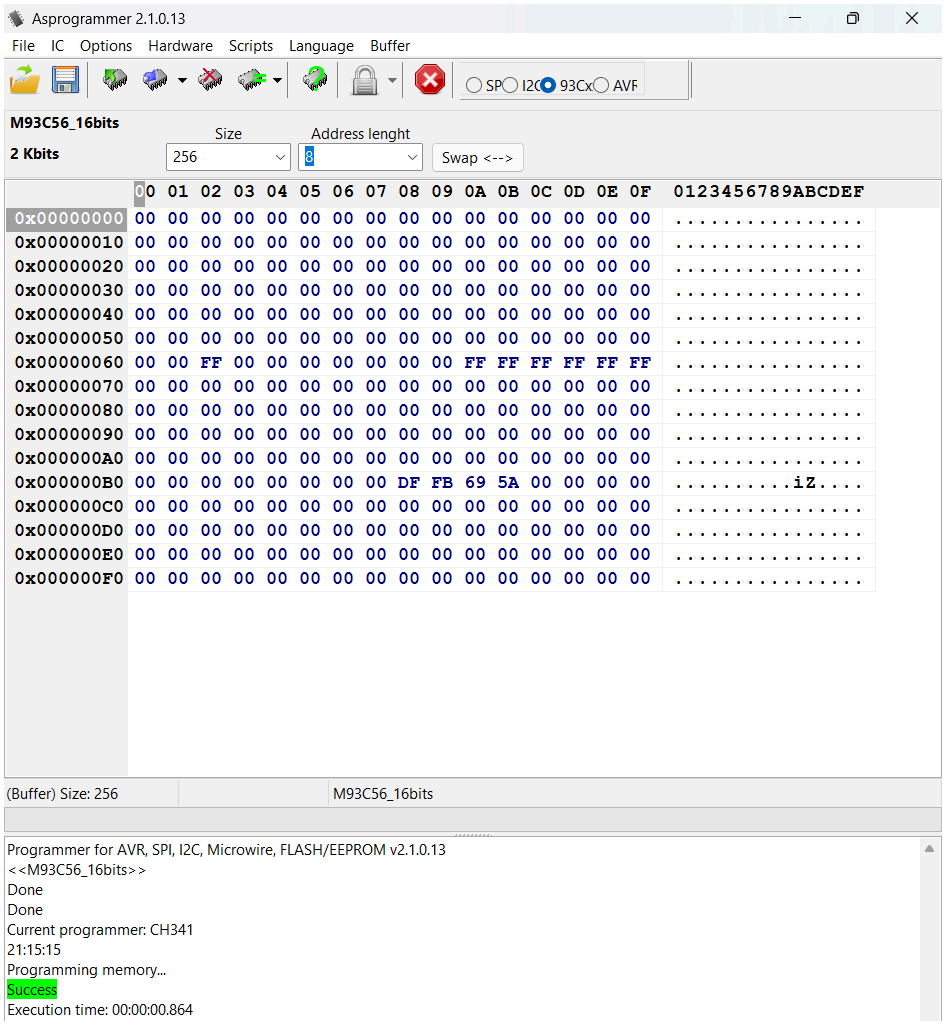

MASTER KEY 2
VALET KEY 1
MASTER KEY 1
ORIGINAL EEPROM DUMP


VALET LOCKOUT
KEY COUNTER
VIRGINIZE KEYS
ORIGINAL EEPROM DUMP



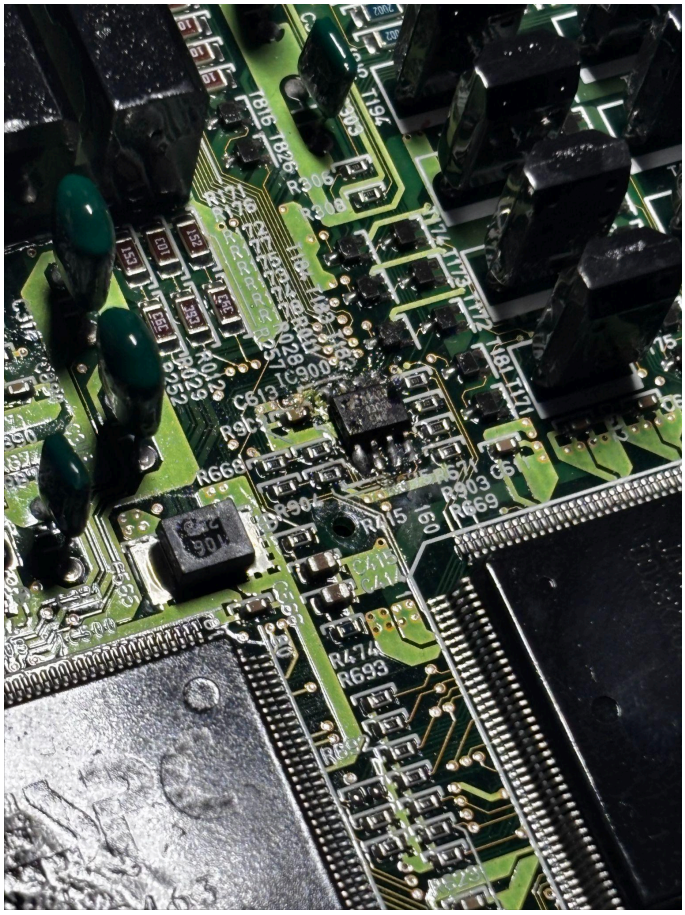
VIRGIN EEPROM DUMP

Now once loaded, you write the dump.



Ok done with software stuff, now unplug the programmer and remove the chip from the clip.

Now solder the chip back on in the same way it came off.



For good measure, if it works, you can try using the test clip to read the chip in circuit to make sure it still reads the virgin dump file.

Now button up the ECU, reinstall it in the car and follow these steps:
When reconnected to the car, the ECU will be in auto-programming mode and will accept new keys as per the procedure below:

1. Briefly insert any key into ignition lock cylinder and remove immediately. The security light should illuminate and remain on.

2. Insert the first transponder key into ignition lock cylinder for registration DO NOT TURN ON. The Security light may blink indicating it has accepted the key. After 3-5 seconds remove the first key from the ignition. Security light should remain on indicating you're still in programming mode.

3. Insert the second transponder key into ignition lock cylinder for registration DO NOT TURN ON. The Security light may blink indicating it has accepted the key. After 3-5

seconds remove the second key from ignition. Security light should remain on indicating you're still in programming mode.

4. Insert third transponder key into ignition lock cylinder for registration DO NOT TURN ON. After security light goes off remove third key from ignition. The security light should extinguish and then commence to blink regularly.

5. Wait 30 seconds for the programming cycle and programming mode to close.
The first two keys are internally (inside the ECU) designated as MASTER keys and the 3rd key inserted will be internally designated as the VALET key.

As a test, when you insert a MASTER key, the security light should stop blinking right away. If you insert a VALET key, the security light will remain solid for 2 seconds and then go out. If the security light does not stop blinking, that key is not programmed to the car.

Good luck!!