Achieve the impossible

ABPROG Programmer for AVDI
User Manual

Version: 2.4

www.ABRITES.com

List of revisions			
Date	Chapter	Description	Revision
01.10.2015	ALL	Document revised	2.0
13.01.2017	ALL	Document revised	2.1
01.12.2017	ALL	Added keys for renew	2.2
14.06.2018	ALL	Added EWS reading	2.3
14.08.2018	1	Added ZN057 adapter	2.3
07.11.2019	ALL	PSA key renewal added	2.4

1 INTRODUCTION

ZN030-ABPROG and ZN031-M35XXX/SPI/I2C Adapter together with ABPROG Programmer software allows you to erase and write SPI,I2C,Micro Wire EEPROM memory(35xxx,95xxx,24xxx,93xx) with and without incremental registers , read the SSID of the NEC KEY, erase the NEC chip and then program it again.

ZN030-ABPROG and ZN031-M35XXX/SPI/I2C Adapter together should be used with ABRITES software produced by Abrites Ltd.

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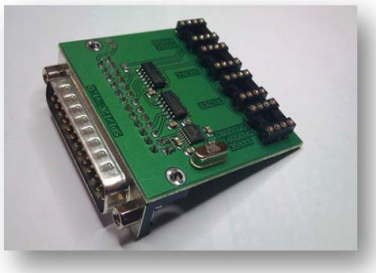
1.1 Scope of the manual

This document describes software and hardware installation of kit for EEPROM and MCU memory programming.

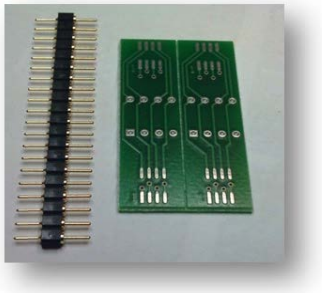
The basic package of kit for EEPROM and MCU memory programming:

- ZN030-ABPROG

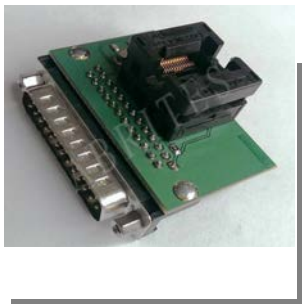
- ZN031- M35XXX/SPI/I2C Adapter



- SO8 –DIP8 Adapter



- ZN032 - Adapter with socket for NEC MCU (optional)



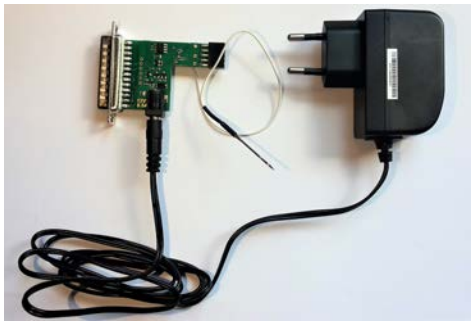
- ZN034 - ABPROG flat cable

- ZN055 - ABPROG EWS3 adapter

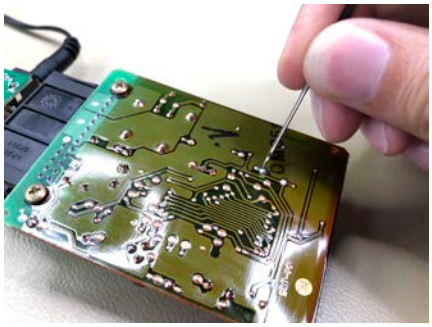
The Abrites ABPROG EWS3 Reader (ZN055 - ABPROG EWS3 adapter) is an assistance tool designed to allow you to read the EWS3 Dump from the EWS3 cars in order to make a key for them, this tool will be very useful when working on the BMW E46/ E53 model cars. The tool attaches to the ABPROG programmer which attaches to the AVDI interface in order to read the EWS3 dump.

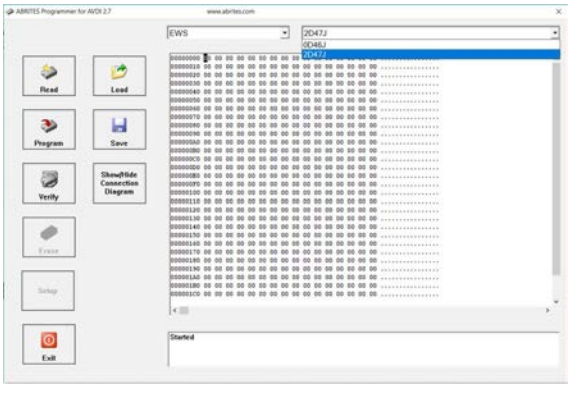
Once you have read the EWS3's dump you will be able to save it on your computer. After you do that you will be able to load this dump in the PROTAG software and program a key using it. With the help of the EWS3 Adapter you will no longer need to use third party EWS3 Programmers to read the EWS dump.

1. ZN055 - ABPROG EWS3 adapter



2. Connection diagram and Boot Pin on EWS

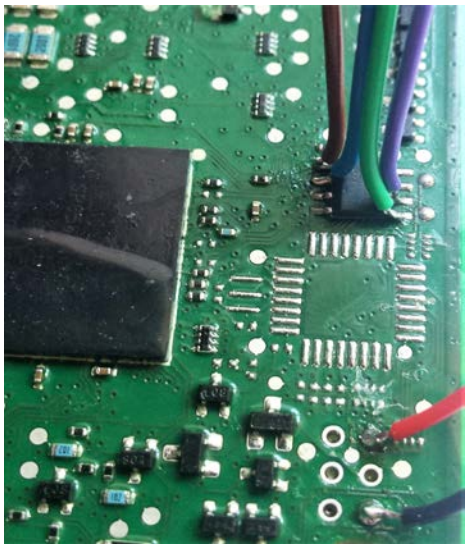


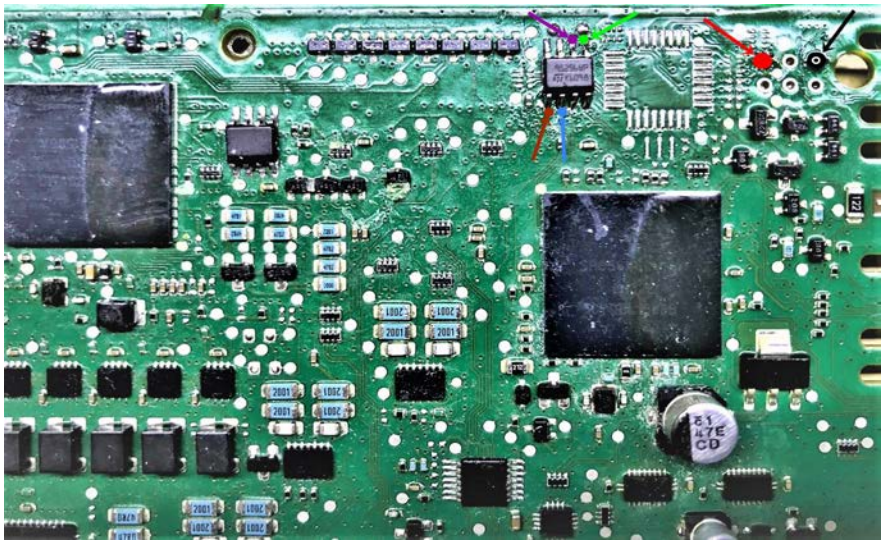


- ZN057 EEPROM Adapter

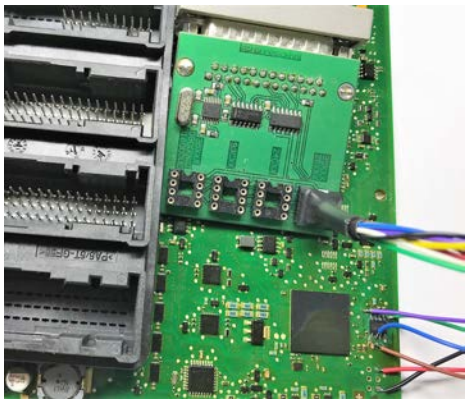
The ZN057 Adapter is designed to make EEPROM reading/writing easier, where the need to desolder/ solder eeprom is skipped while the adapter cables can be directly soldered to any connection point on the PCB or the EEPROM.

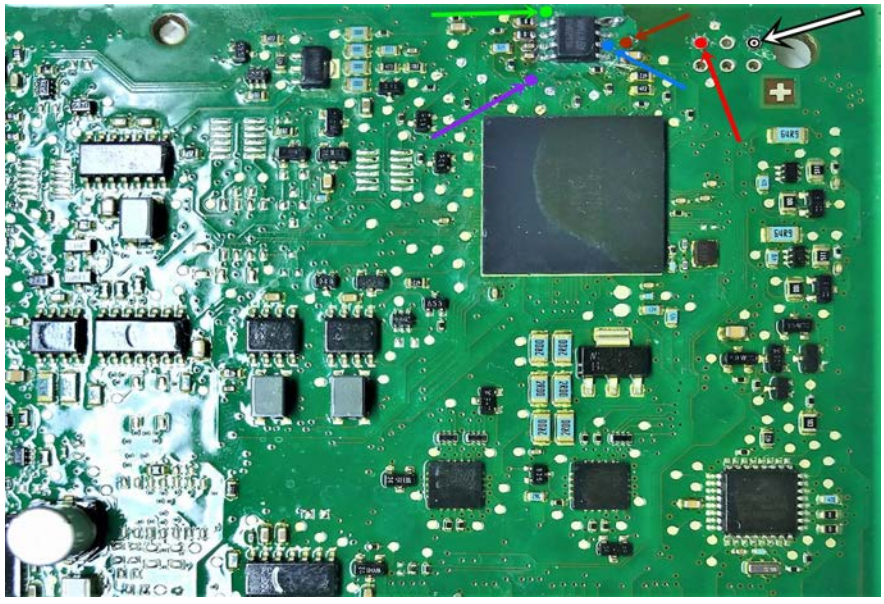
The photo below shows how to connect to a BMW BDC and a FEM unit to read the EEPROM:





FEM EEPROM connection:





2 SYSTEM REQUIREMENTS

Minimum system requirements – Windows 7, Pentium 4 with 512 MB RAM
USB port with supply 100 mA / 5V +/- 5%

3 SUPPORTED DEVICES

-M35080VP M95080
-M35080V6 M95160
-D080D0WQ M95320
-D160D0WQ M95640
-M95010 M95128
-M95020 M95256
-M95040 24C01
-M95080
-M95160
-M95320
-M95640
-M95128
-M95256
-24C01
-24C02
-93C76
-24C04
-93C86
-24C08
-24C16
-24C32
-24C64
- 24C128
- 24C256
- 24C512
- 24C1024
-93C46
-93C56
-93C66
-RENAULT BCM (X95)
-W164,W166,W203,W204,W210,W211,W212,W216,W220,W221
MB EZS Reading hash without password

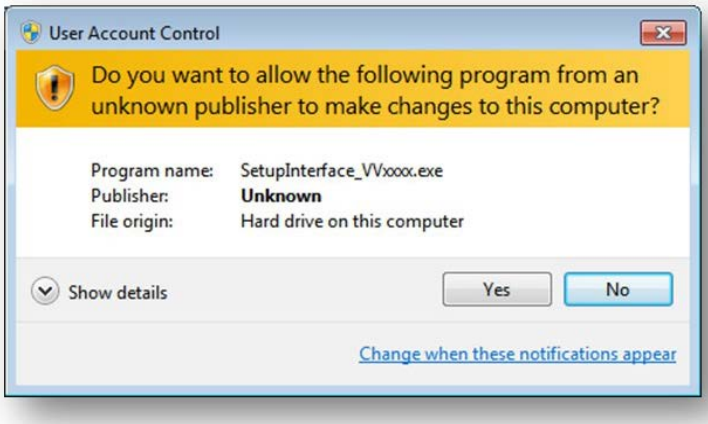
4 GETTING STARTED

We suppose that already your AVDI interface is configured and fully working.
You can receive optional separate installation file for your kit EEPROM and MCU memory programming.

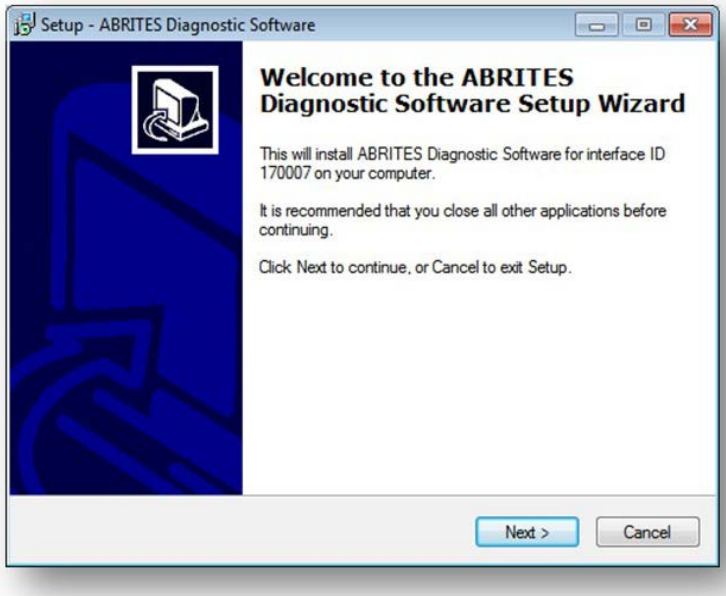
Software is a windows executable file named 'SetupInterface_ABPROG_VVxxxx.exe' where VVxxxx is your interface identification number.

4.1 Software installation steps

Please start the executable file above to initiate installation procedure and follow the onscreen instructions.



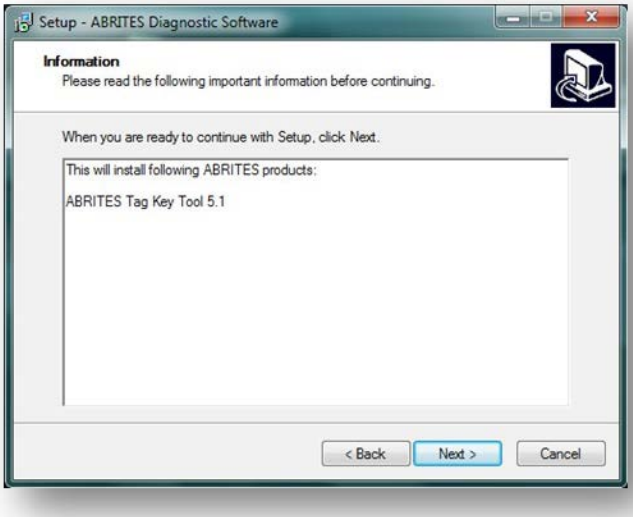
Depending of your operation system and settings you can be asked to confirm starting of installation procedure.



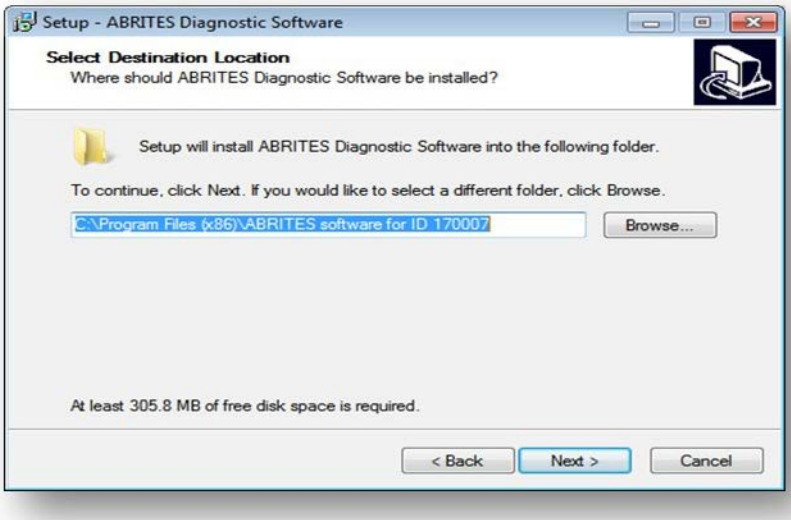
Press “Next” button to proceed with the installation.

Read carefully license agreement and select “I accept the agreement” if you accepting all. Then press “Next” button.
If you not agree press cancel to interrupt installation procedure.

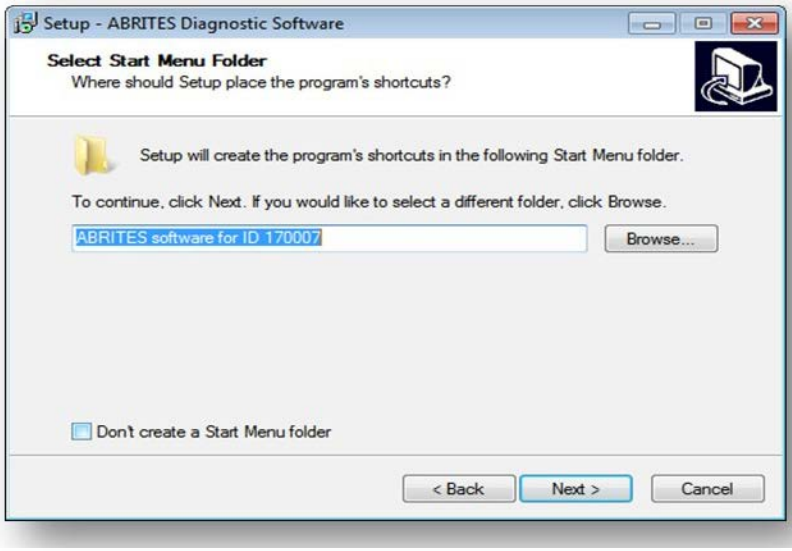
Press “Next” button to proceed with the installation.



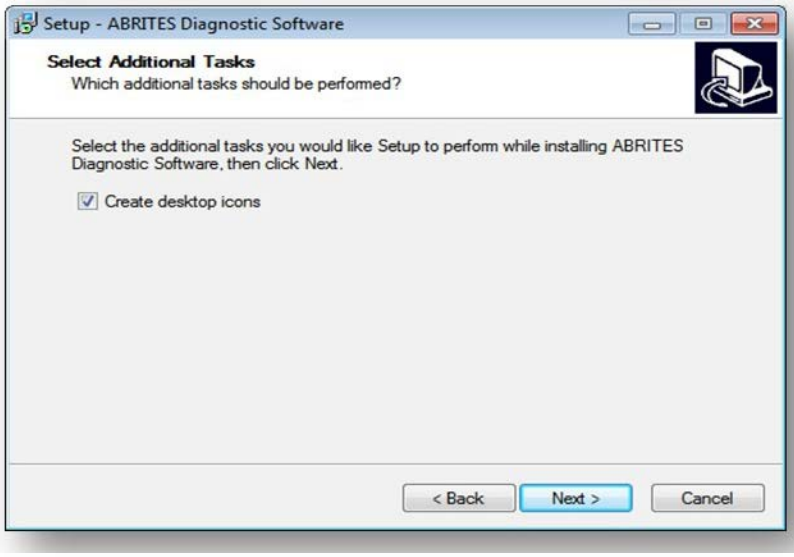
Press “Next” button to proceed with the installation.



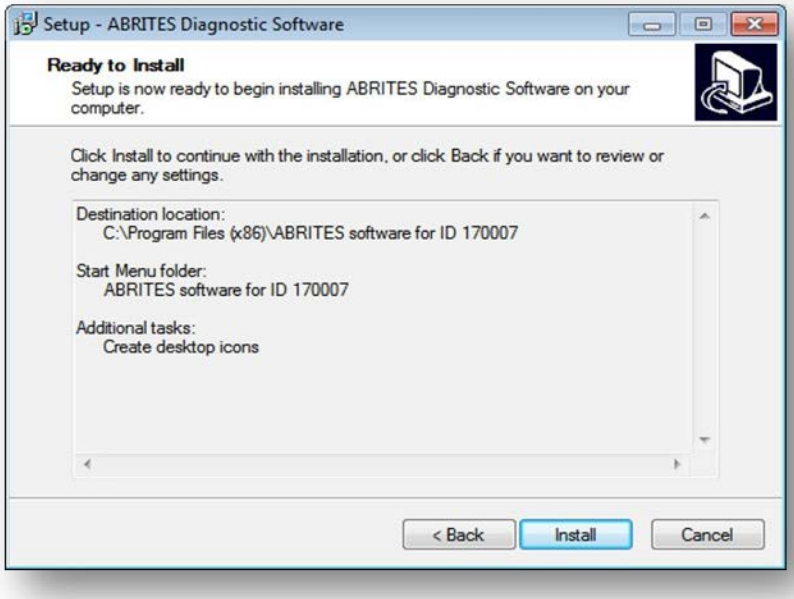
Press “Next” button to proceed.



If you don’t want desktop icons uncheck the checkbox about creation of icons.
Press “Next” button to proceed.

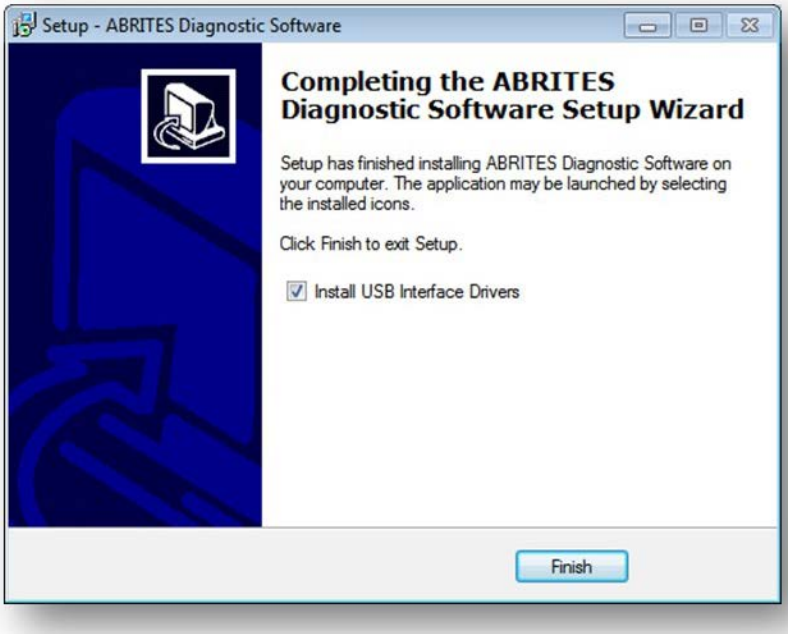


Press “Install” and wait until installation complete.



Be sure that checkbox about installation of interface's USB drivers is set especially if you installing for first time Abrites Diagnostic Software.

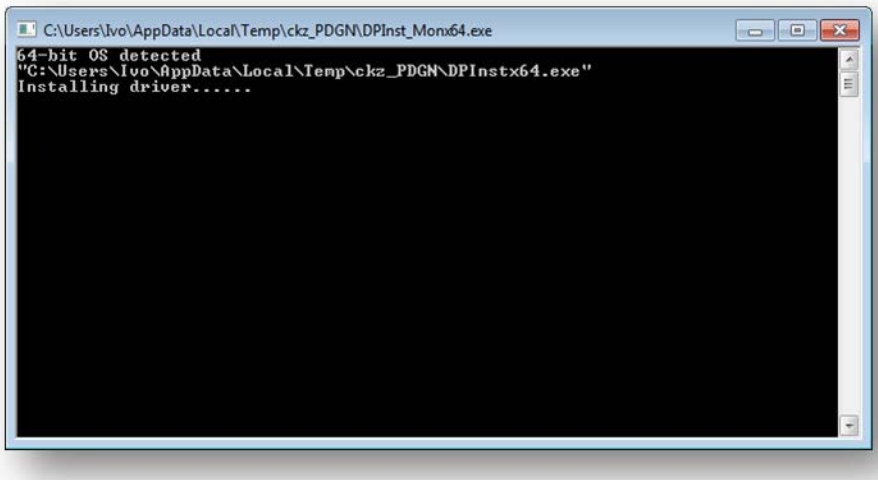
Press "Finish".



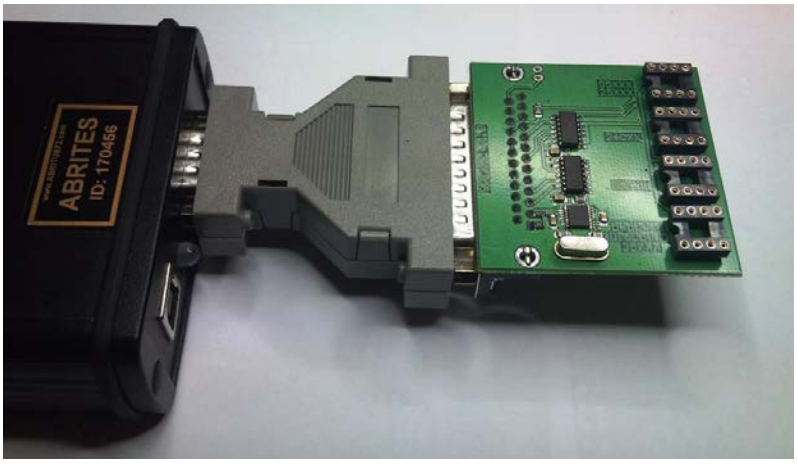
Depending setting of your operation system you can be asked to confirm installation of USB drivers.

Press "Yes".

Wait until installation of USB driver finish.

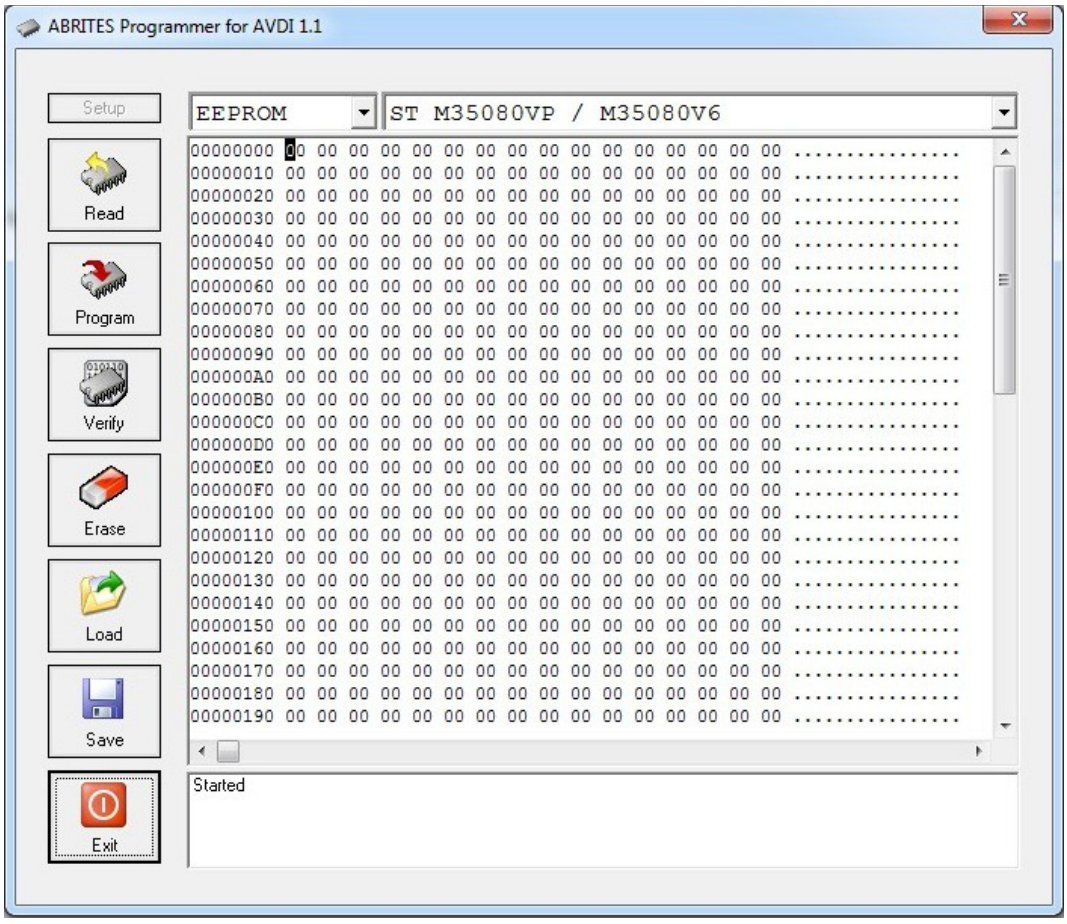


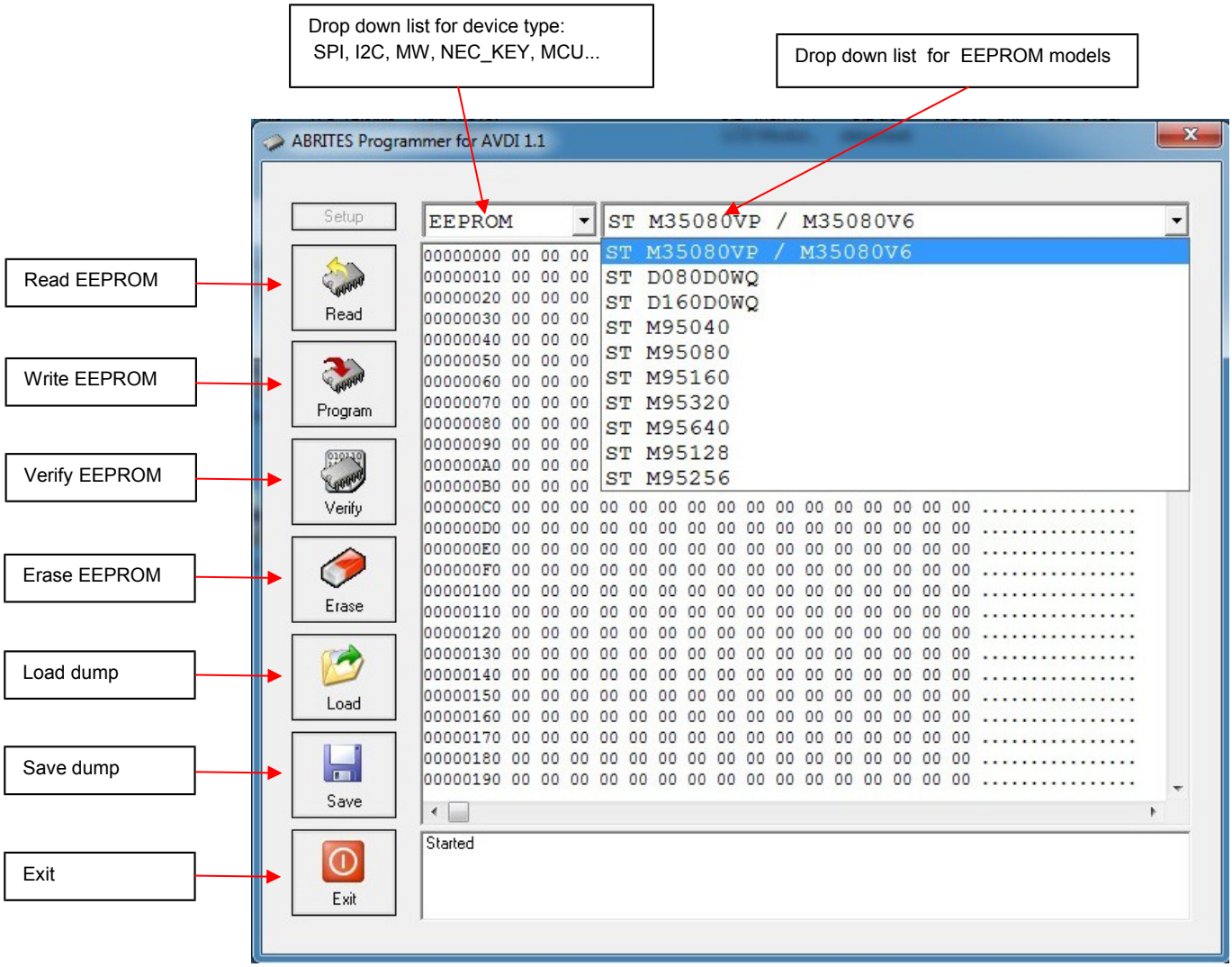
4.2 Connection of the programmer to the interface



4.3 Starting of the software

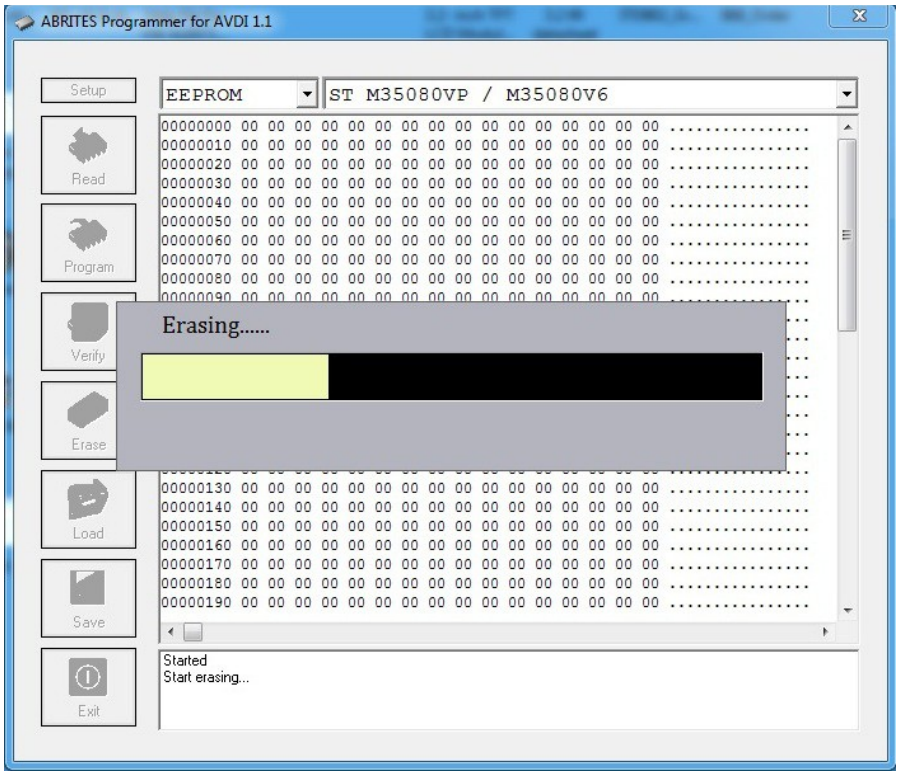
When programmer is ready and connected to the interface you can start the software.



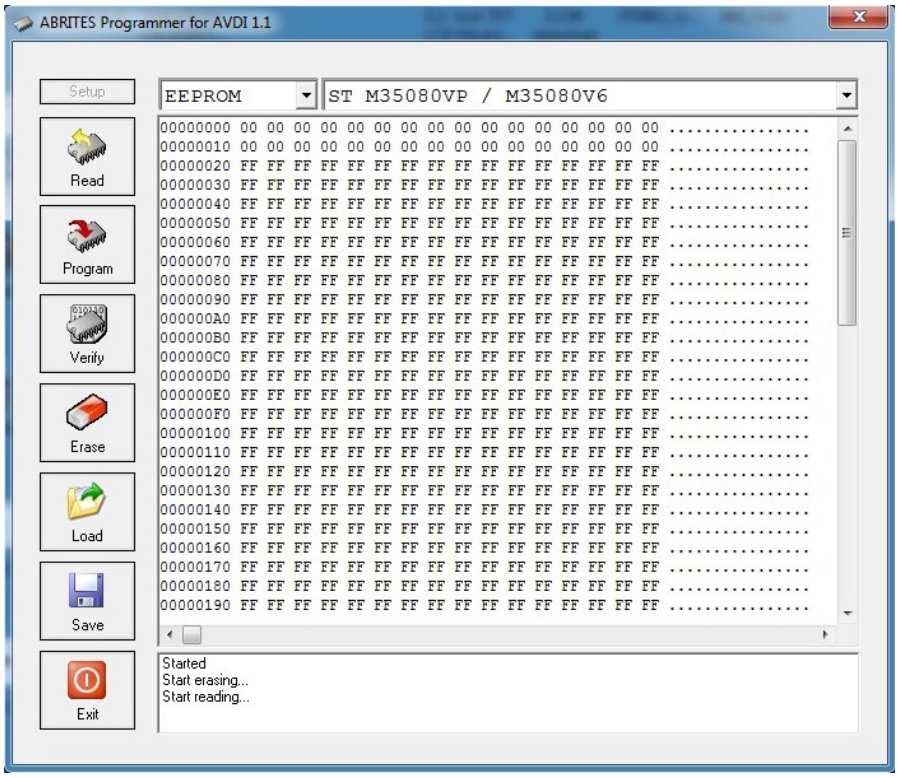

Drop down list for device type:
SPI, I2C, MW, NEC_KEY, MCU...
Drop down list for EEPROM models
Read EEPROM
Write EEPROM
Verify EEPROM
Erase EEPROM
Load dump
Save dump
Exit
ABRITES Programmer for AVDI 1.1
Setup
Read
Program
Verify
Erase
Load
Save
Exit
EEPROM
ST M35080VP / M35080V6
ST M35080VP / M35080V6
ST D080D0WQ
ST D160D0WQ
ST M95040
ST M95080
ST M95160
ST M95320
ST M95640
ST M95128
ST M95256
Started

5 ERASING INCREMENTAL EEPROM

Once you select the "EEPROM" use button "Erase Incr.".



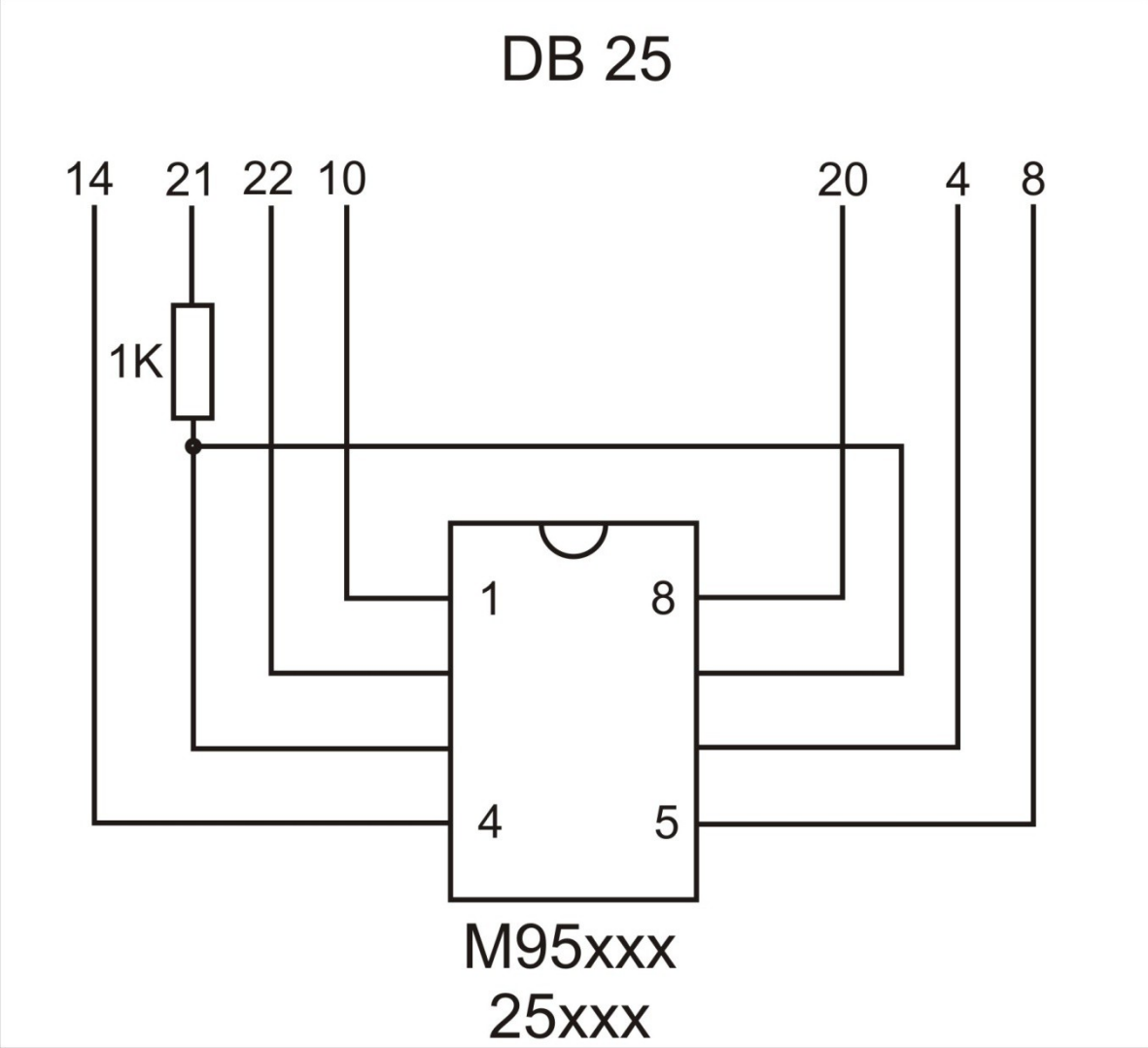
Keep in mind that the time to erase "M35080VP/M35080V6" could reach 90 seconds!



After erase finish you can write the new data using the button “Load” and "Prog Incr.".

6 CONNECT "ZN030-ABPROG" WITHOUT "ZN031-M35XXX/SPI/I2C ADAPTER"

You can use your "ZN030-ABPROG" for programming and reading of ordinary SPI EEPROM memory as M95080, M95160, M95320, M95640, M95128, M95256 without using "ZN031-M35XXX/SPI/I2C Adapter". To do this you must connect the memory to DB25 connector in the manner shown in the picture.



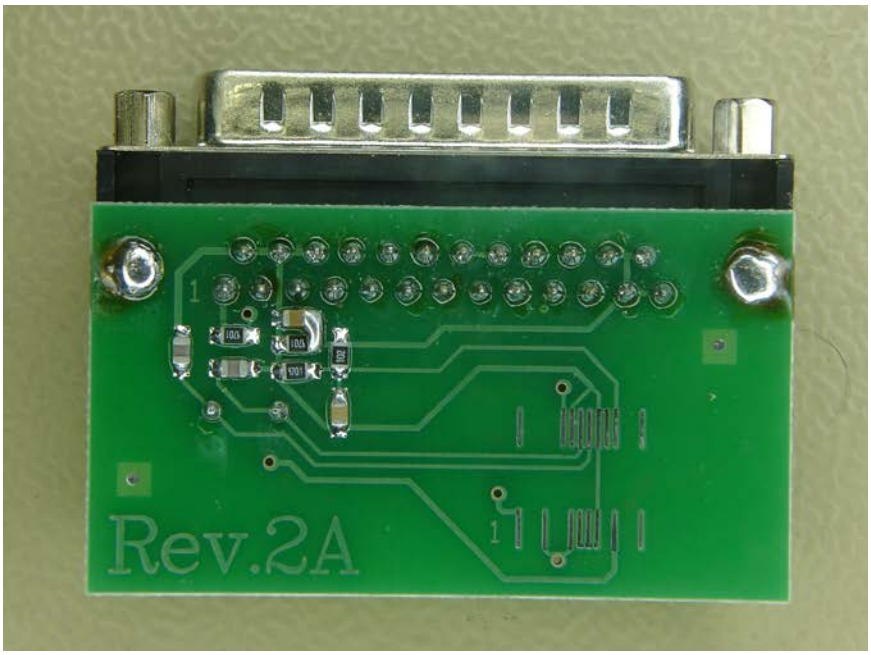
Keep in mind that the power from "ZN030-ABPROG" is 5V DC!

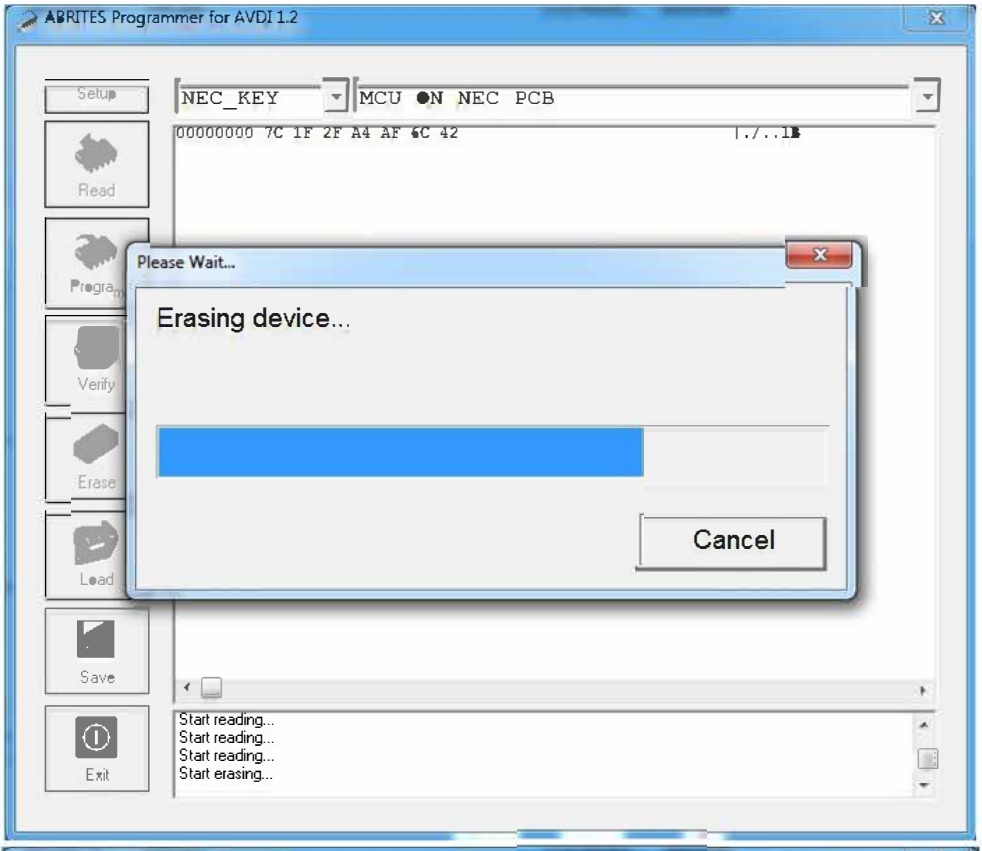
7 READ SSID ,ERASING AND PROGRAMMING OF NEC KEY FOR MERCEDES

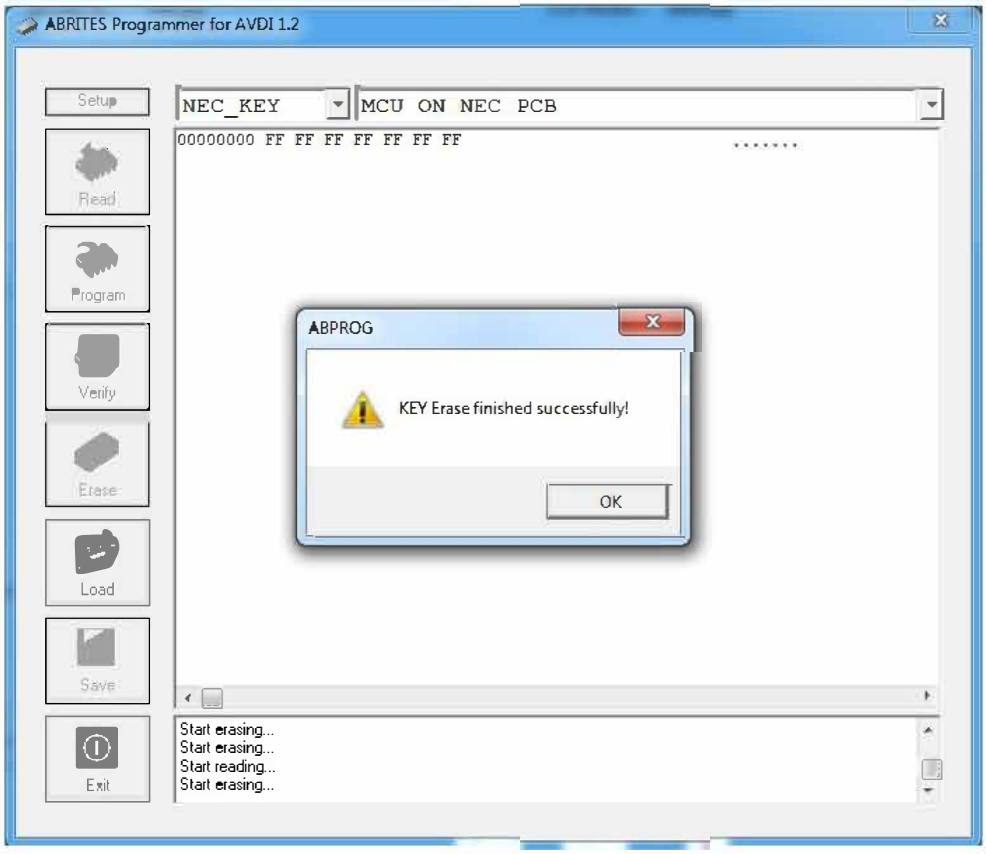
All existing customers should have received a NEC board, on which to solder the NEC chip. For all existing customers - if you send to support@abrites.com the dump from the EZS we will send you back a working key dump and you will not need to worry about virginizing ECU, 7GTronic and so on.

7.1 Erasing NEC chip

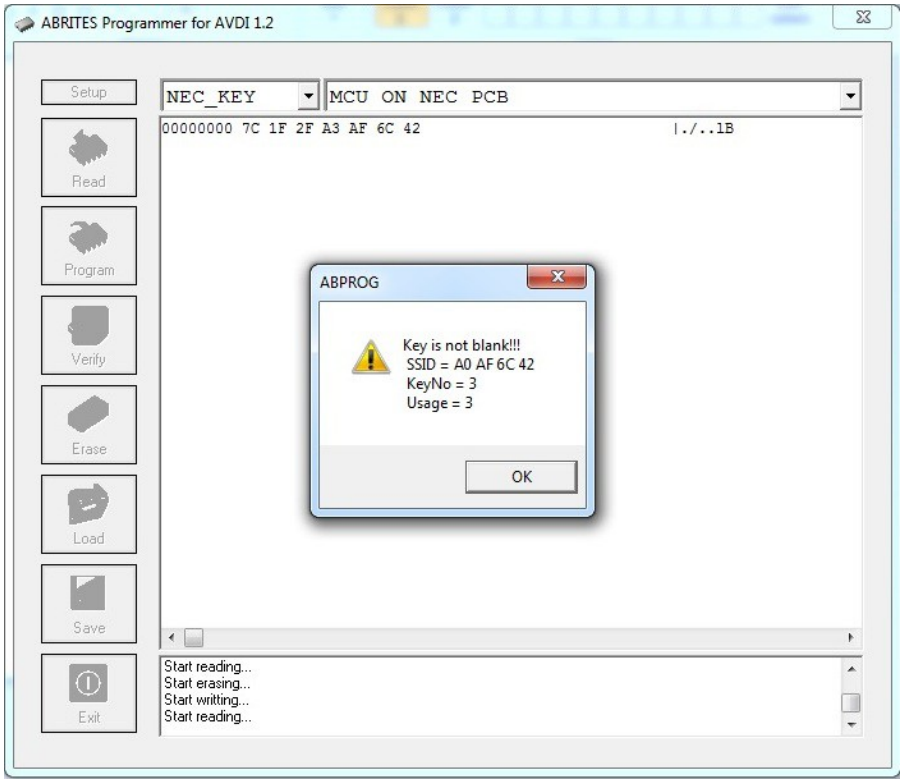
The NEC chip should be soldered on the NEC PCB, which is provided by Abrites. Here is how the erasing procedure looks like:



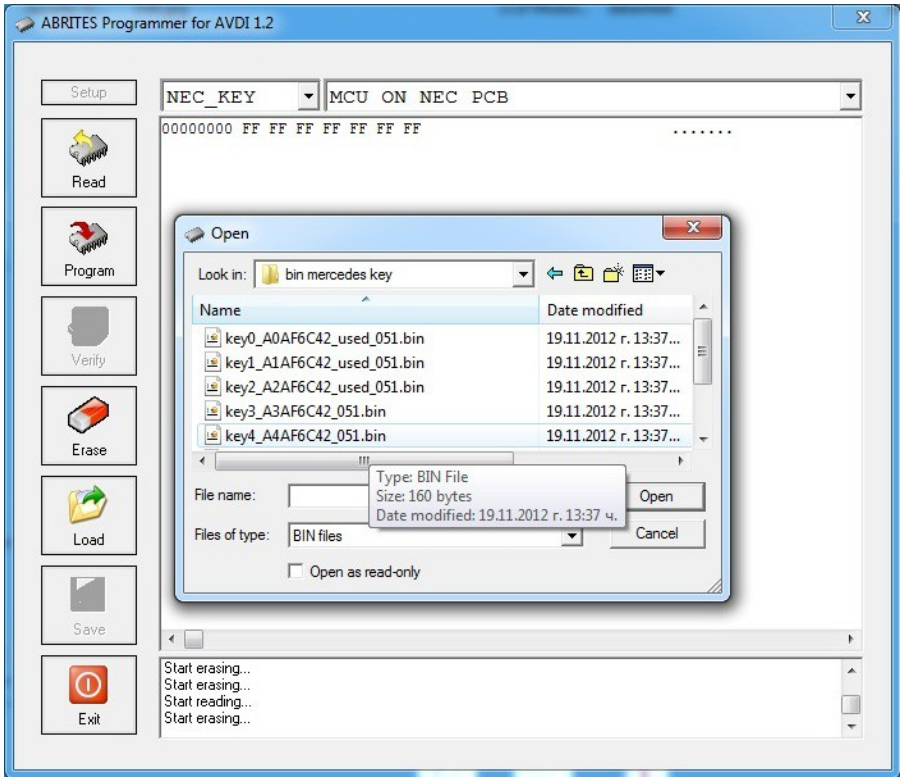

ABRITES Programmer for AVDI 1.2
Setup
NEC_KEY
MCU ON NEC PCB
00000000 7C 1F 2F A4 AF 6C 42
Read
Verify
Erase
Load
Save
Exit
Please Wait...
Erasing device...
Cancel
Start reading...
Start reading...
Start reading...
Start erasing...


ABRITES Programmer for AVDI 1.2
Setup
NEC_KEY
MCU ON NEC PCB
00000000 FF FF FF FF FF FF FF
Read
Program
Verify
Erase
Load
Save
Exit
ABPROG
KEY Erase finished successfully!
OK
Start erasing...
Start erasing...
Start reading...
Start erasing...

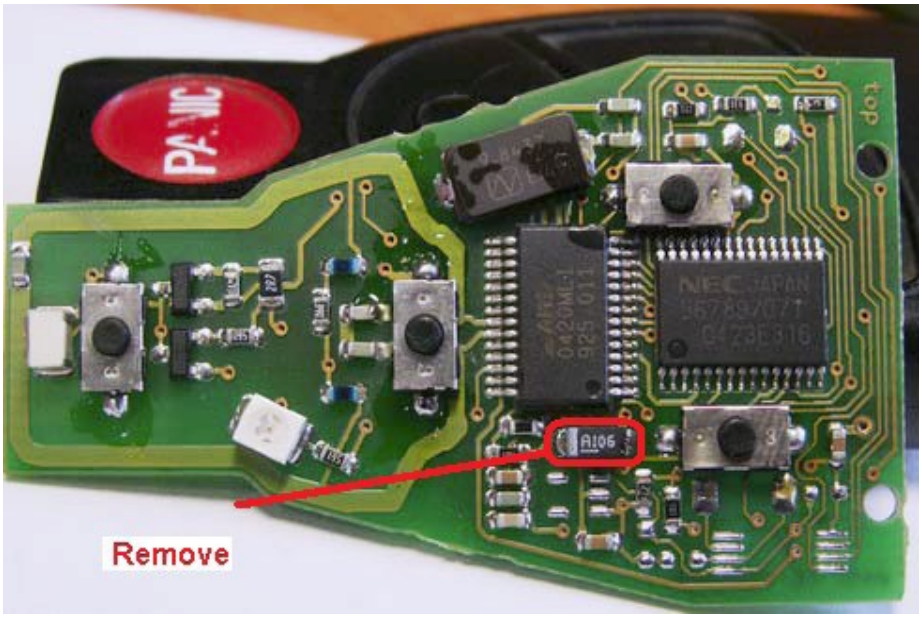
7.2 Reading SSID

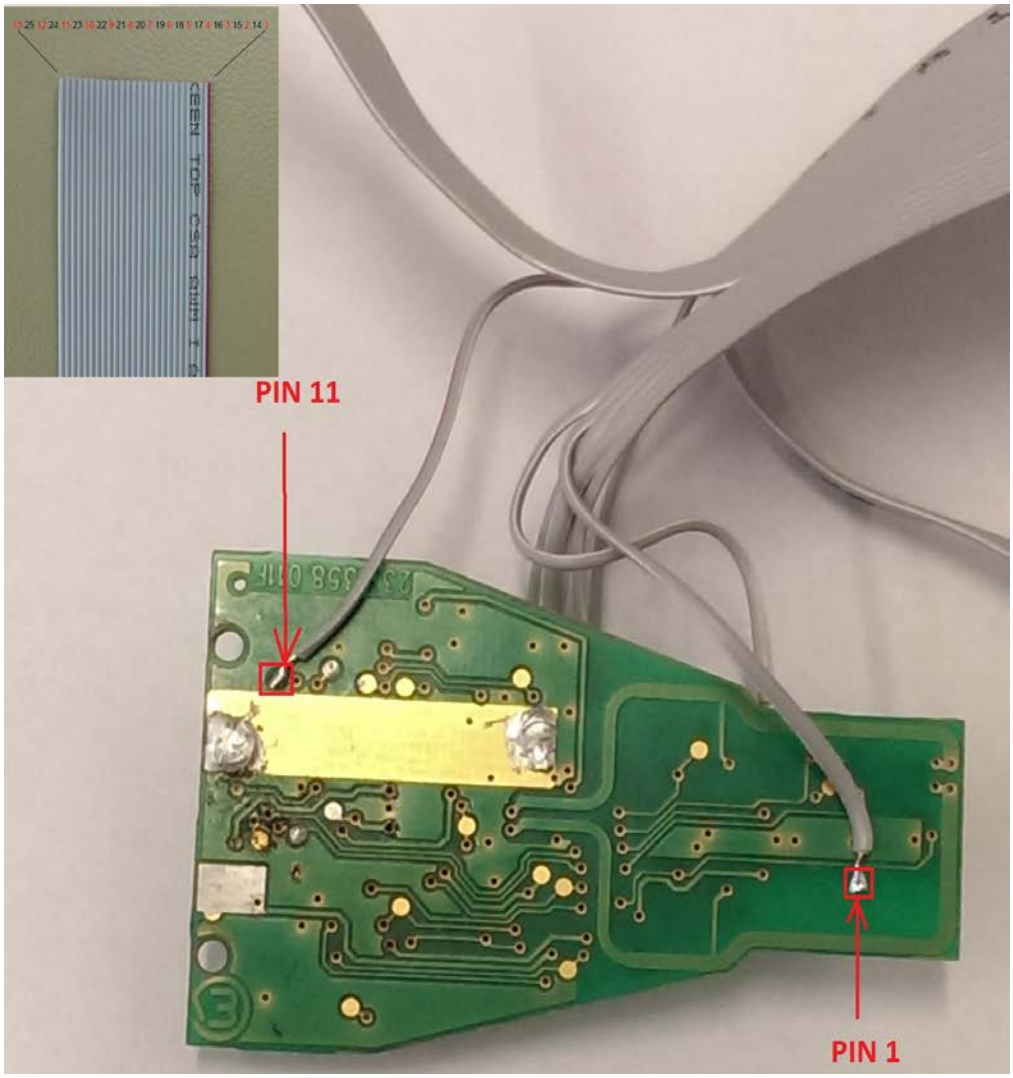


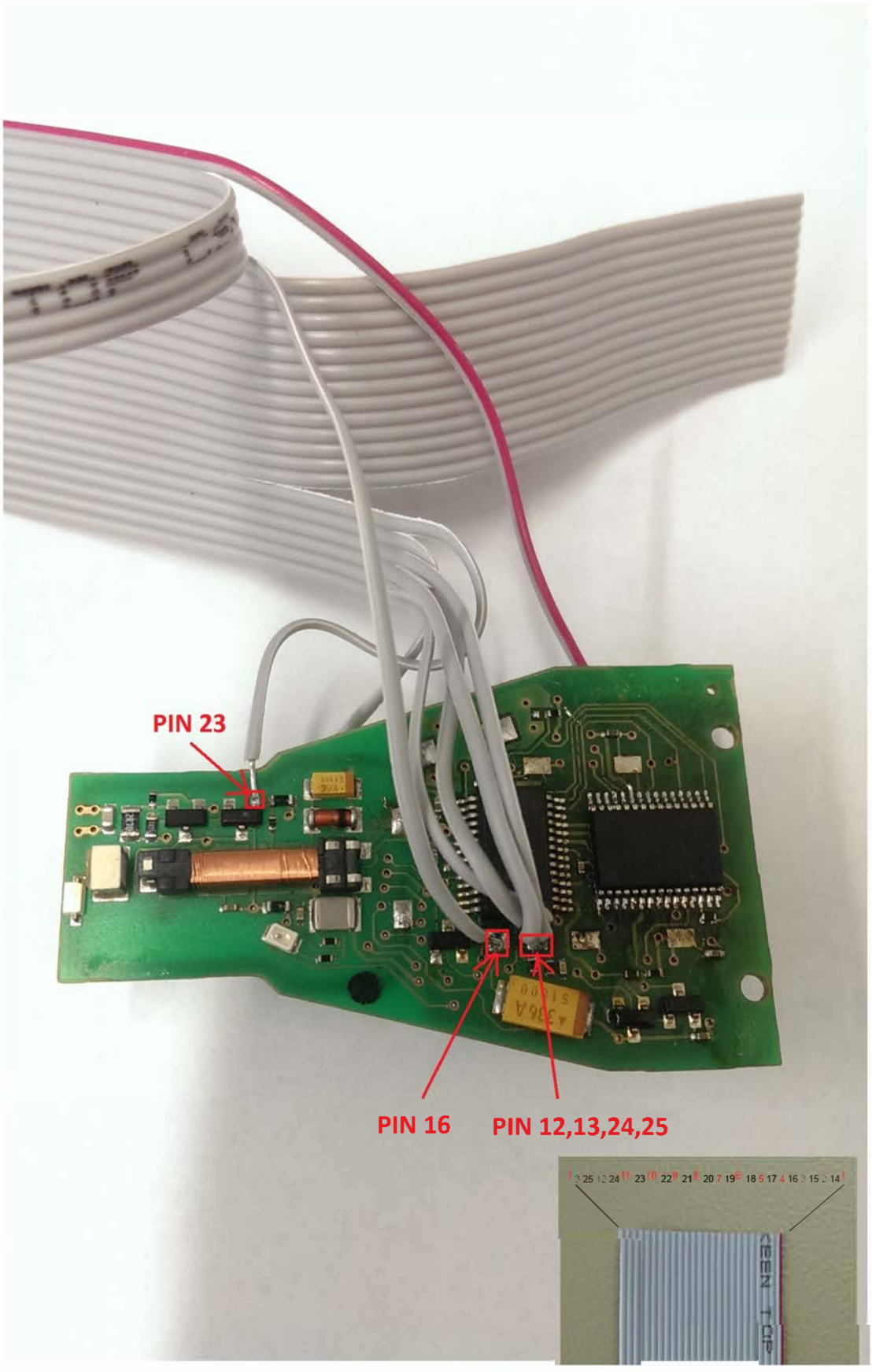
7.3 Programming NEC chip



Programming the CPU directly on the key using ABPROG flat cable.

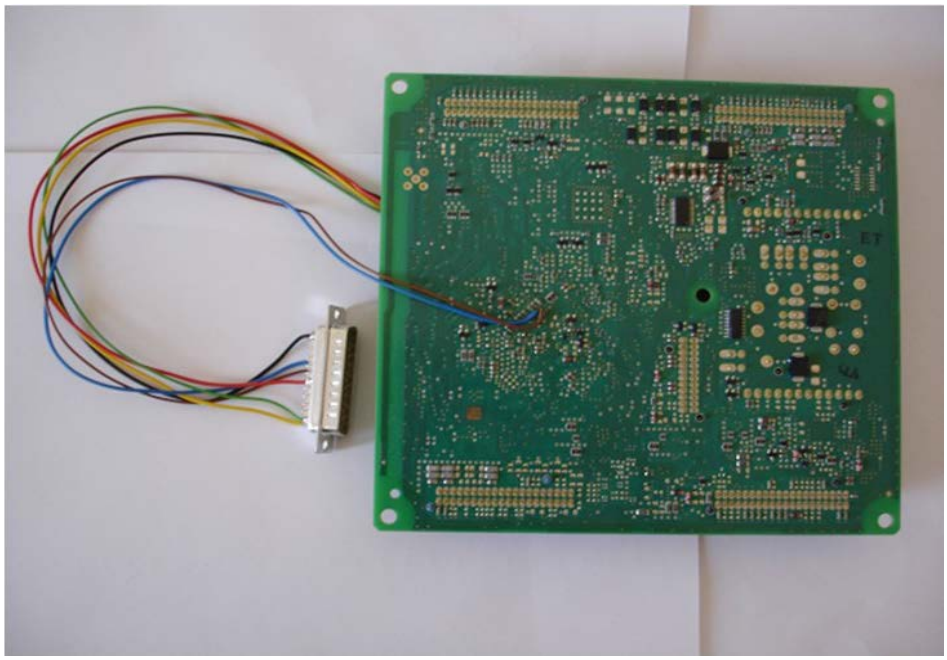




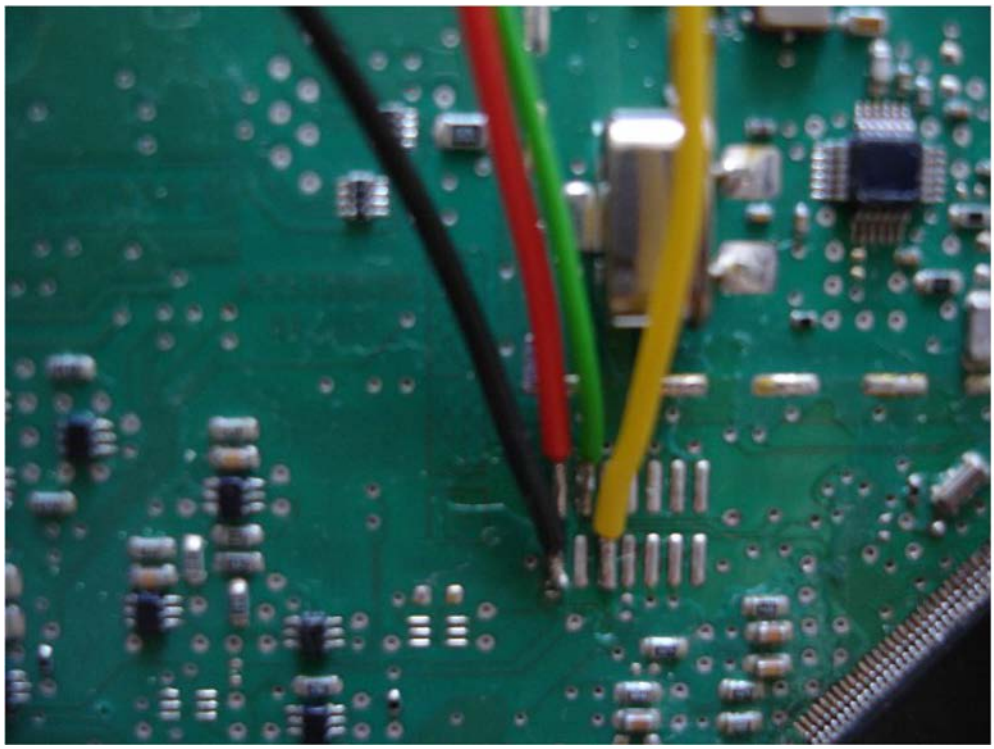

PIN 23
PIN 16
PIN 12,13,24,25

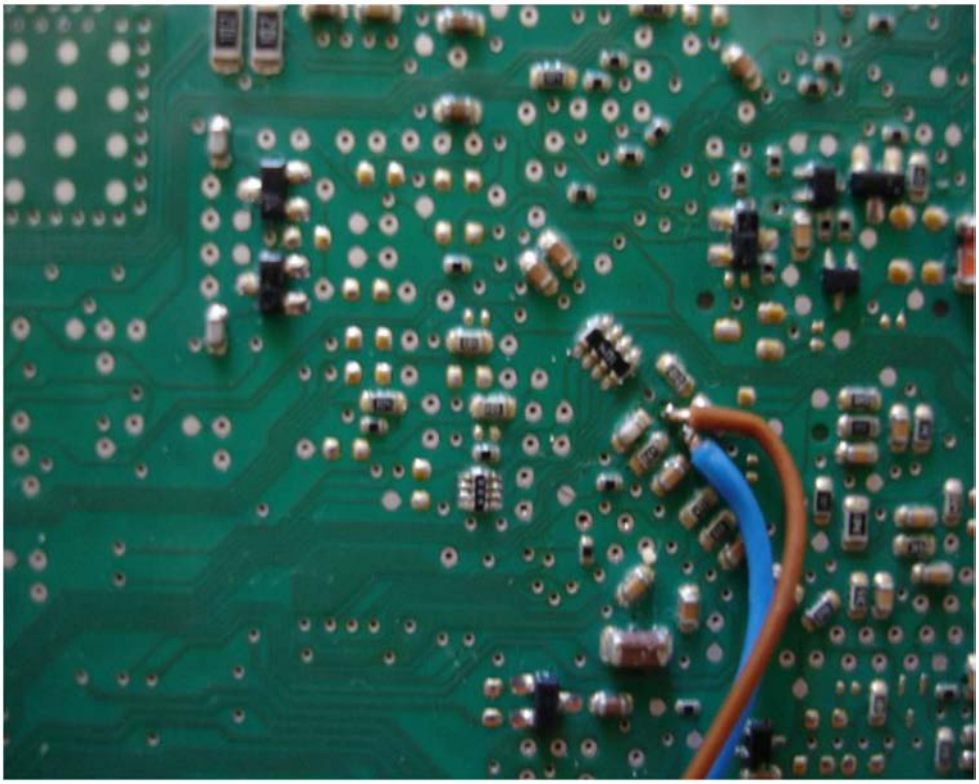
NOTE: FOR CUSTOMERS WHO HAVE "ZN002" AFTER FIRMWARE UPGRADE CAN BE USED AS "ZN030-ABPROG".

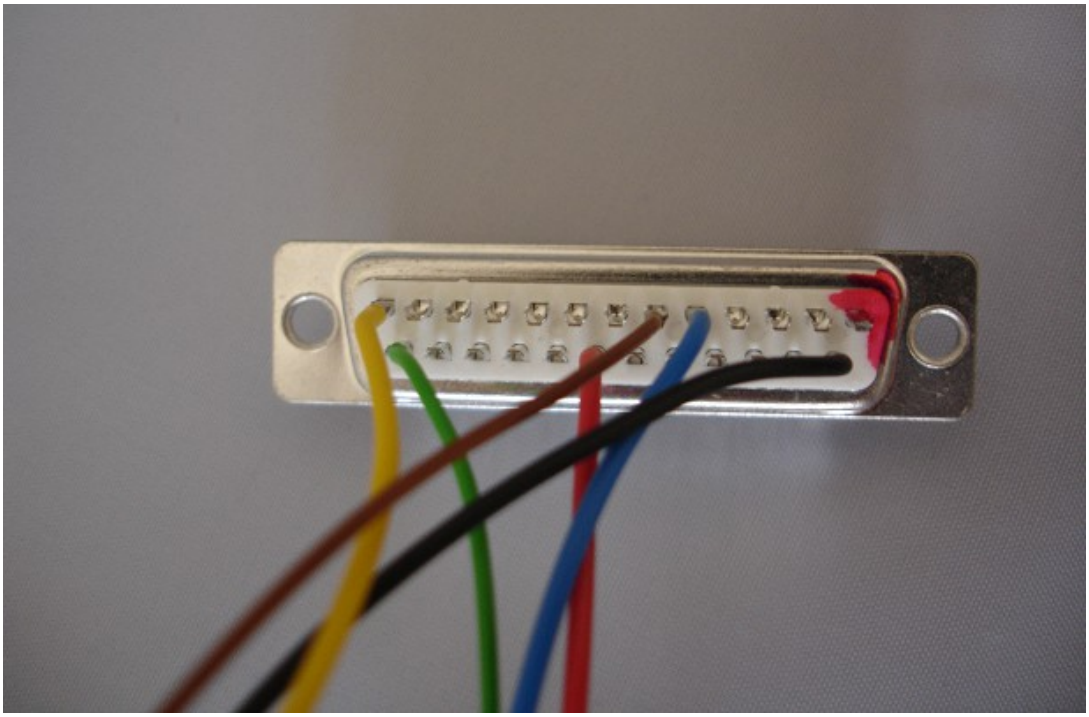
To read the immobilizer with the ABPROG you need to solder as showed on the pictures below.

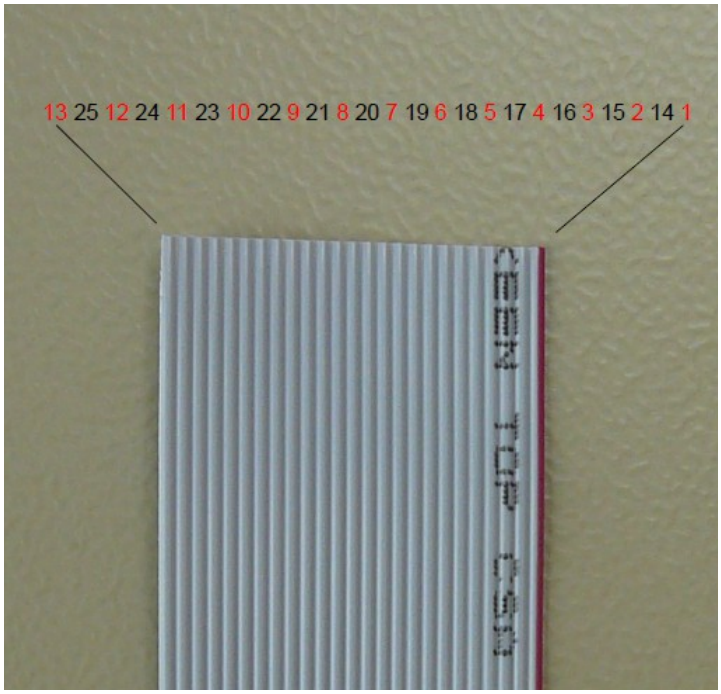


In the ABPROG you should select “MCU” and the “Renault (X95) BCM” option.









For Renault and Audi BCM

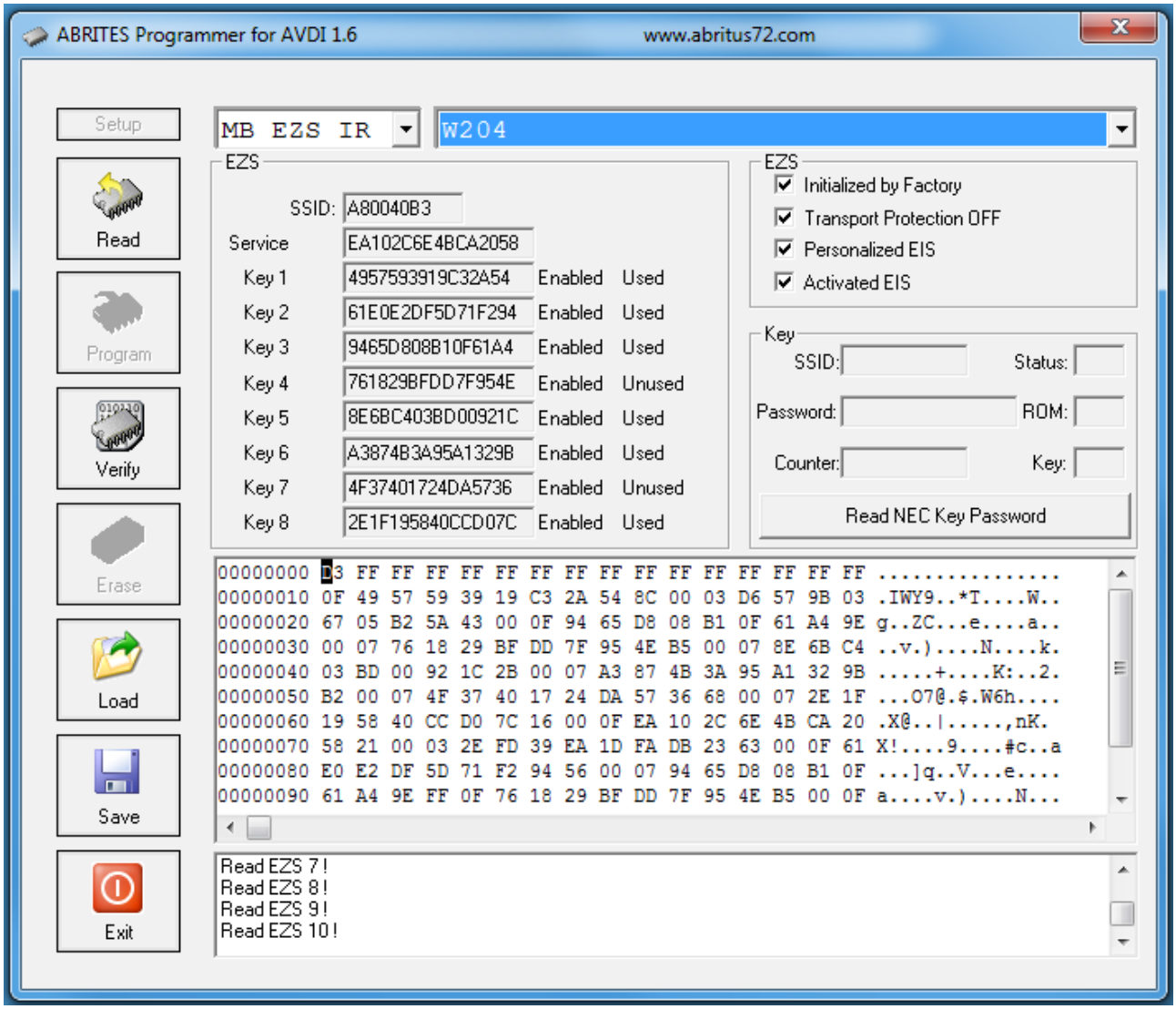
Blue - 5
Red - 20
Black - 14
Green - 25
Brown - 6
Yellow – 13

8. Hash reading without password from the EZS via IR. Password reading from NEC MCUs version 57

8.1 EZS hash reading through IR

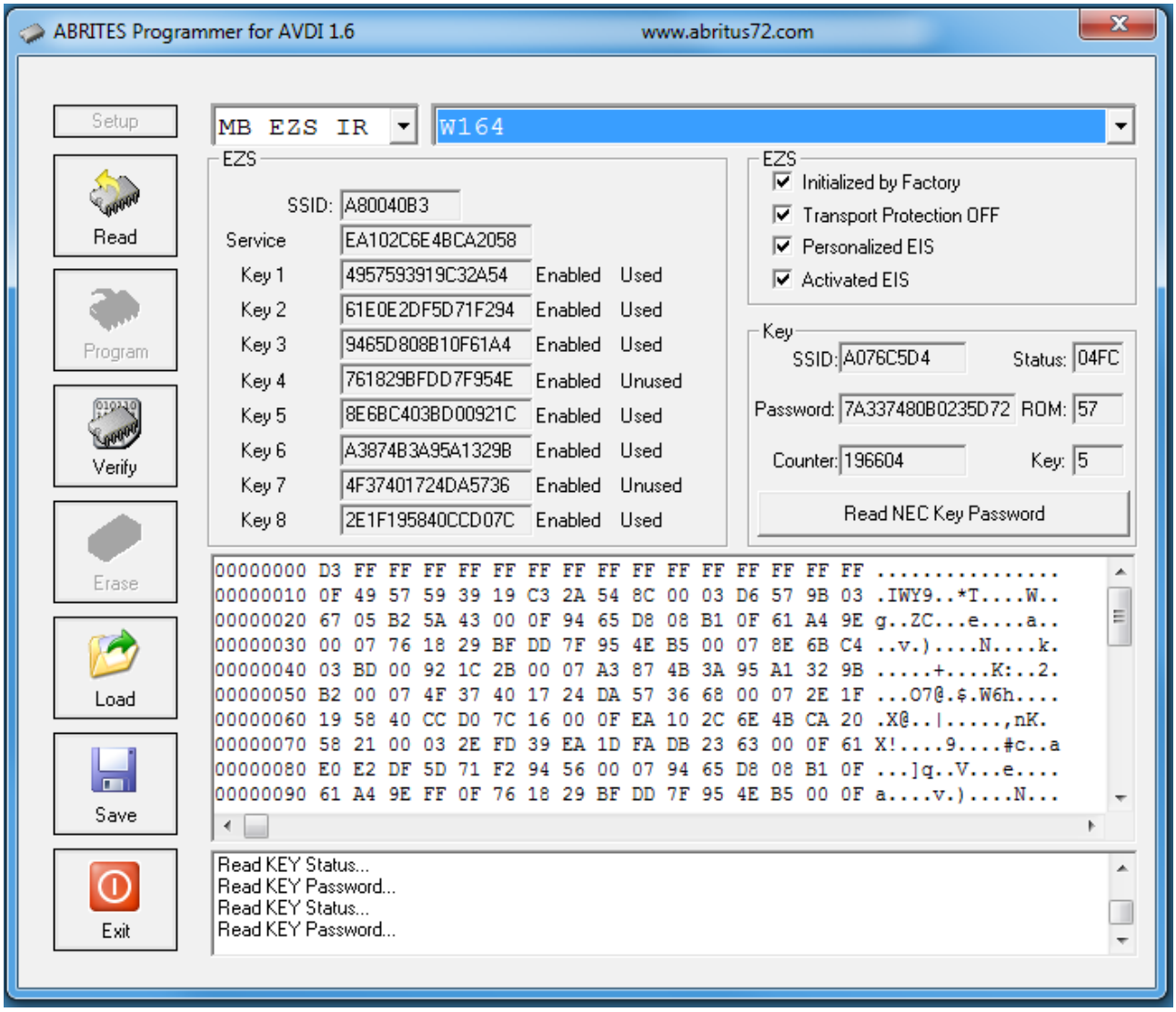
Please use the ZN036 adapter to connect to the EZS. From the drop down please select MB_EZS_IR and the model i.e. W204. Press the read button and place the IR adapter in the key fob. After reading the key fob the hashes will be displayed.

Please note that for some models you will need to take the key in and out of the fob multiple times.



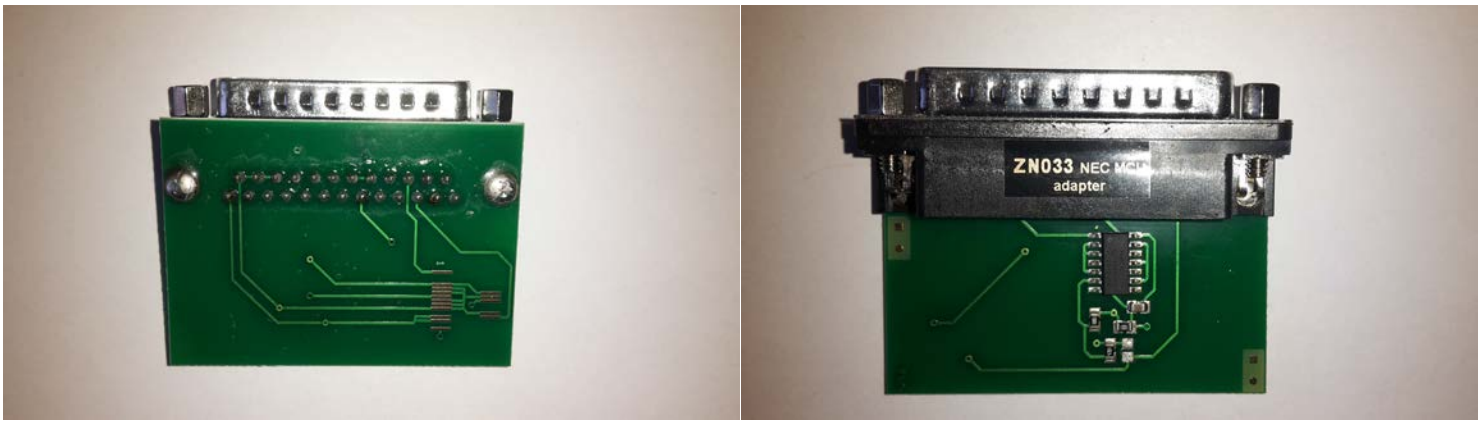
8.2 NEC MCU version 57 password reading

Place the NEC processor from the key on the adapter plate (part of the ZN036).
Press the “READ NEC KEY PASSWORD” and wait until the reading is over.
This process can take from several seconds up to a few minutes. After successfully reading the password you will see the SSID and password fields among other details.



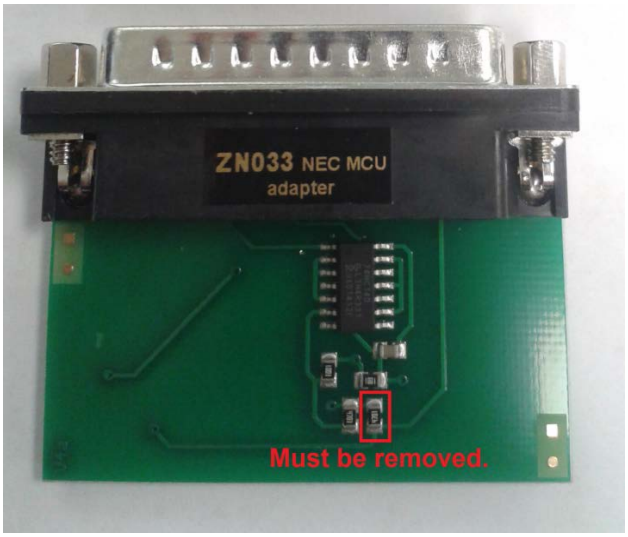
When you have the full dump, the hash files + the password you can save the file and use it later in order to generate the dumps using the Abrites diagnostics for Mercedes.

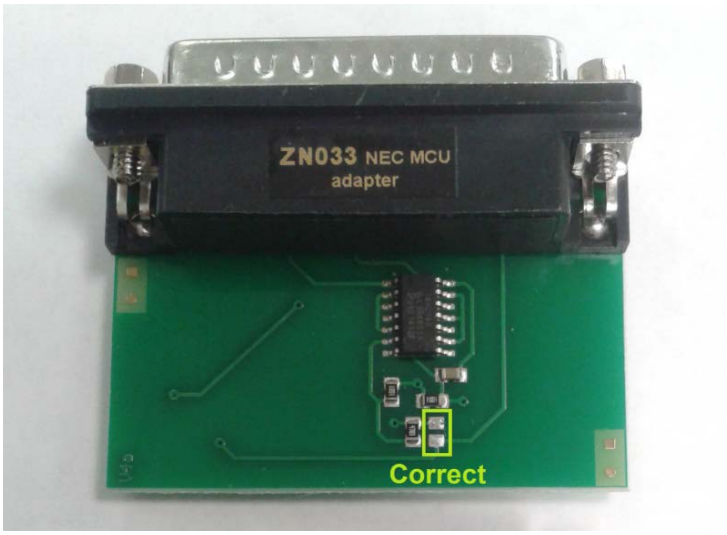
ZN033 NEC MCU Adapter



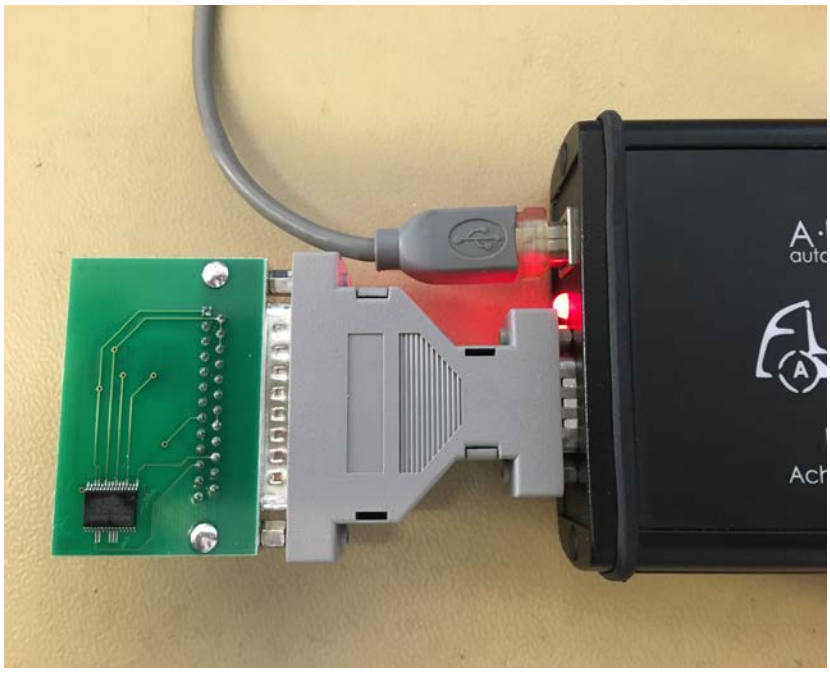
Using the ZN033 NEC MCU Adapter, you will be able to solder NEC processors used in Mercedes keys, read them and make them virgin. The supported versions are V57 and some V51.

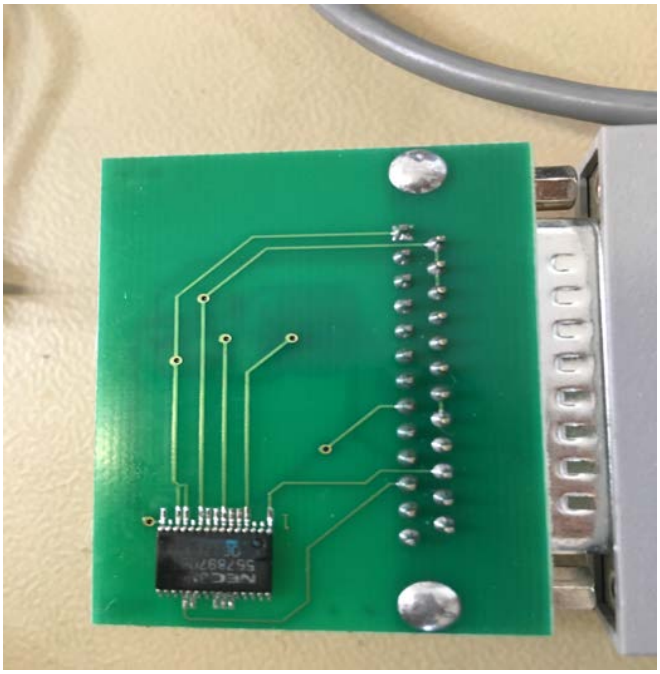
If you already have an ZN033 NEC MCU Adapter, you might have to desolder the resistor as shown in the below pictures.





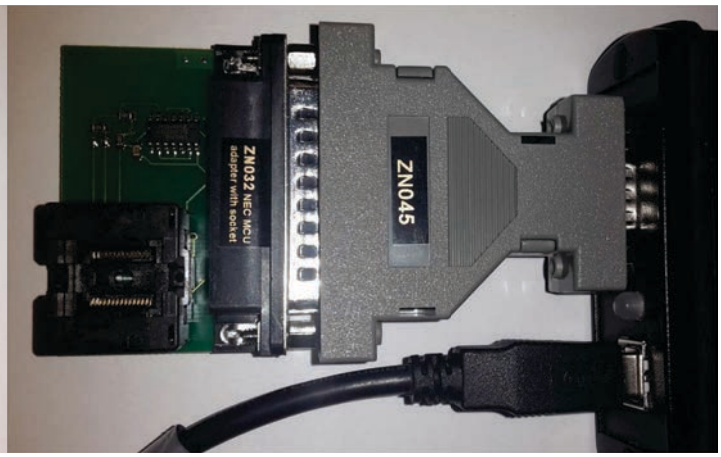
Once the NEC MCU is soldered to the ZN033 Nec MCU Adapter, the ZN033 has to be connected to ZN045 ABPROG. The ABPROG can be directly connected to AVDI as shown in the picture below:



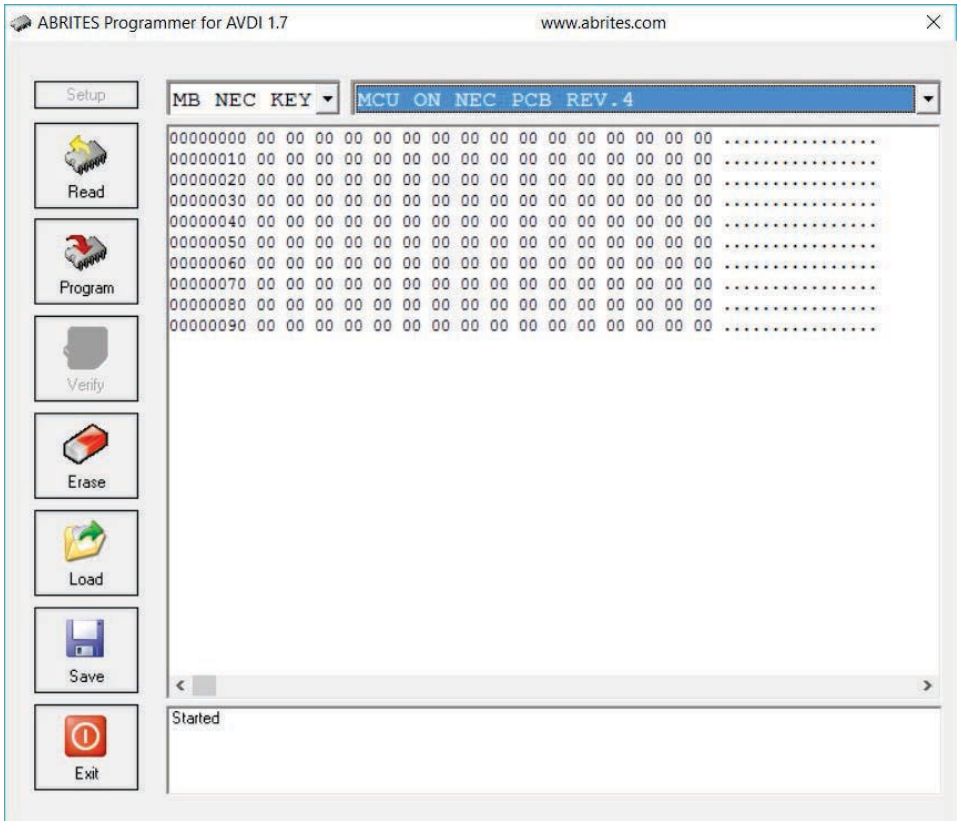


ZN032- Adapter with Socket for NEC MCU

The ZN032 Adapter is used just like the ZN033 Adapter, but using it there is no need to solder the NEC MCU from the key PCB to the ZN032. You can very easily place the NEC inside the socket and close it. Again, the ZN032 Adapter can be connected to ZN045 that goes into the AVDI DB-25 port.



For opening the software and proceeding with the procedure, simply open the ABPROG Programmer For AVDI Software and choose "MB NEC KEY" and the revision of the ABPROG's PCB as show in the picture below.

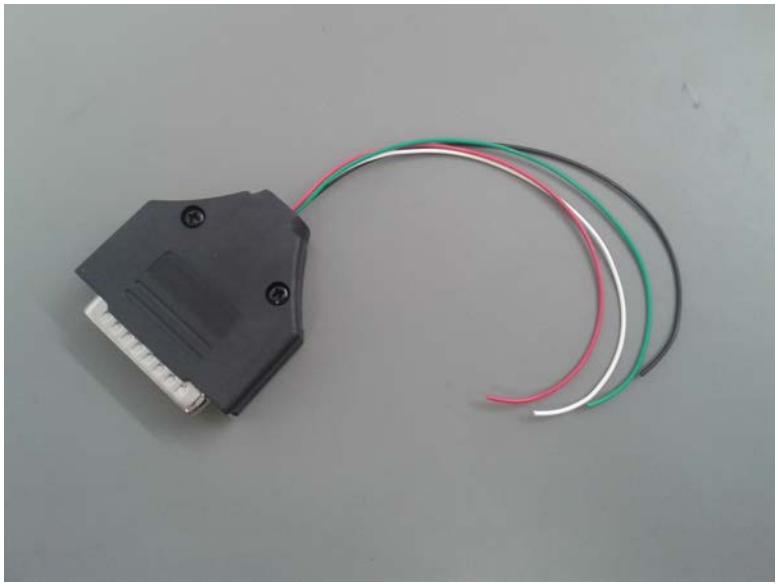


After choosing the desired option, you can proceed with reading, programming, erase and verify upon erasing the information if it is still present.

Key PCB Renewal using ABRPOG

Using this function you will be able to renew Hitag printed circuit board keys, so as to reuse them for programming to other vehicles. In order to renew a key, you will have to open the plastic cover and solder the cables to from the ABPROG add-on supplied:

Note:This ABPROG function will allow you to use any HITAG Key with any vehicle that uses HITAG as long as the keys are from the same HITAG Generation.



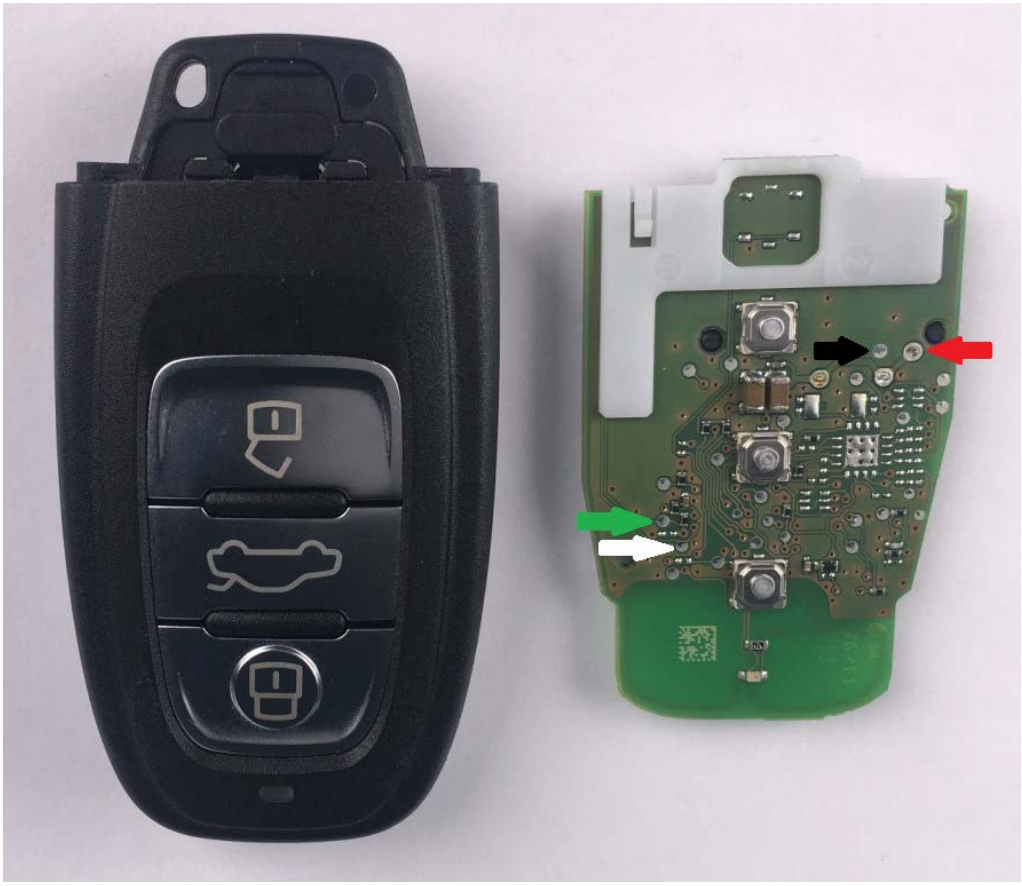
Description of the applicable cable colors used for soldering	
RED	+ BAT
BLACK	- GND
GREEN	DATA
WHITE	CLK (clock)

After the soldering, the DB-25 male side of the add-on needs to be connected to the DB-25 female connector of the ABPROG ZN045. After which, the male DB-15 part of the ZN045 needs to be connected to the female DB-15 connector on the AVDI.

The following photos will show you how the connection points on the key PCBs look like, so that you can proceed with the soldering.

All Porsche Hitag type of keys (new Porsche Keys) have the following soldering points:

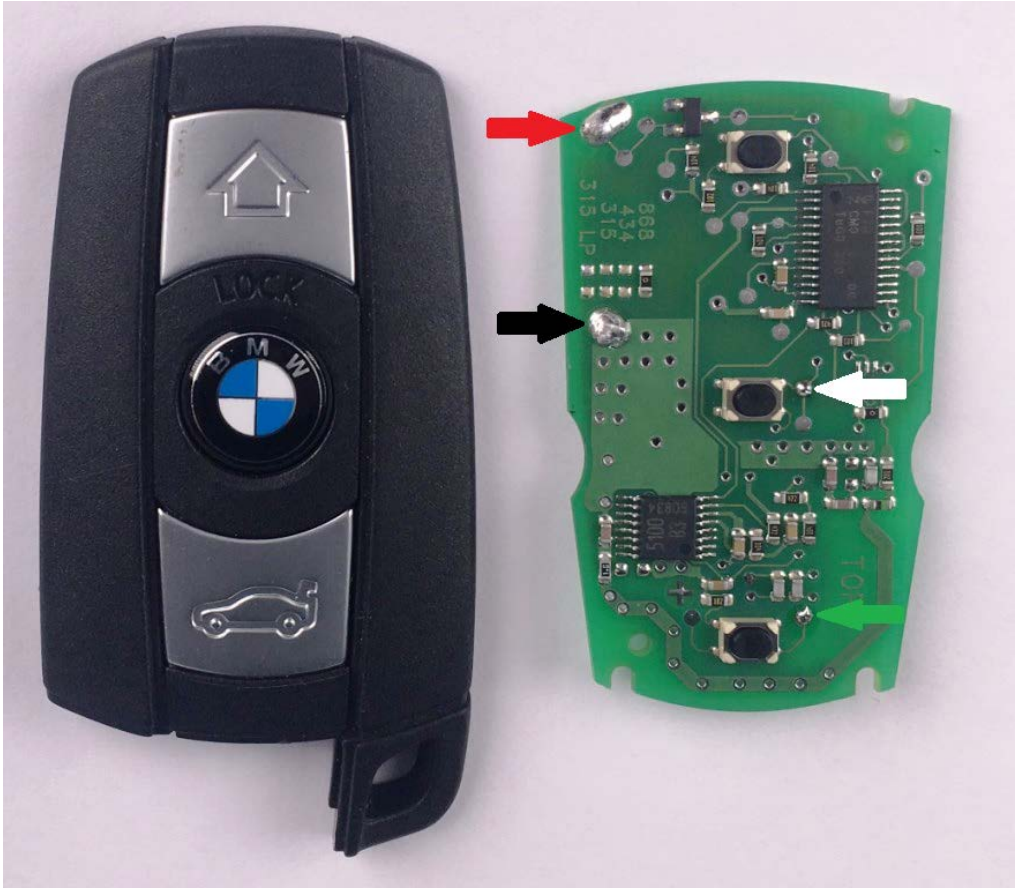
Audi BCM2 keys have the following soldering points



BMW F-Series 1st type Keys have the following soldering points:

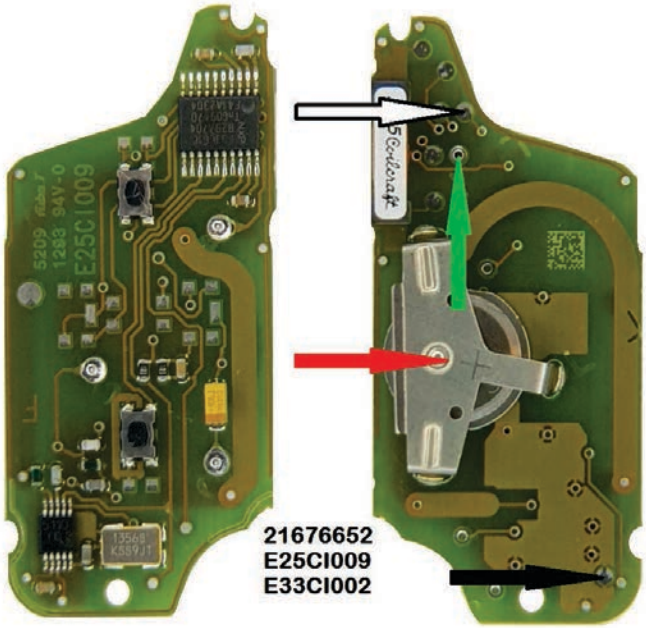
BMW F-Series 2nd type Keys have the following soldering points:

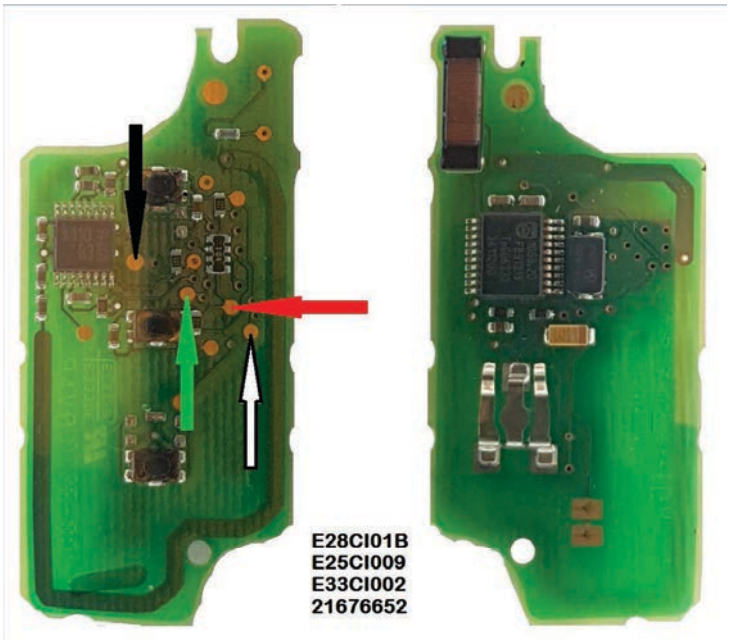
BMW E-Series Keys have the following soldering points

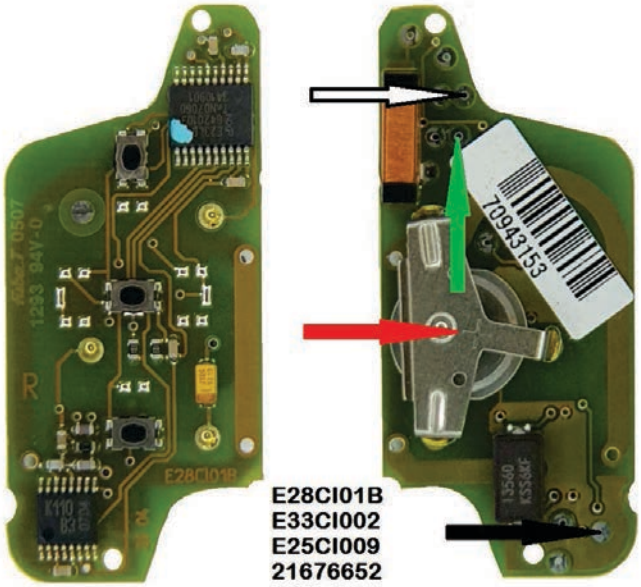


Volvo Keys have the following soldering points:

PSA keys have the following soldering points:





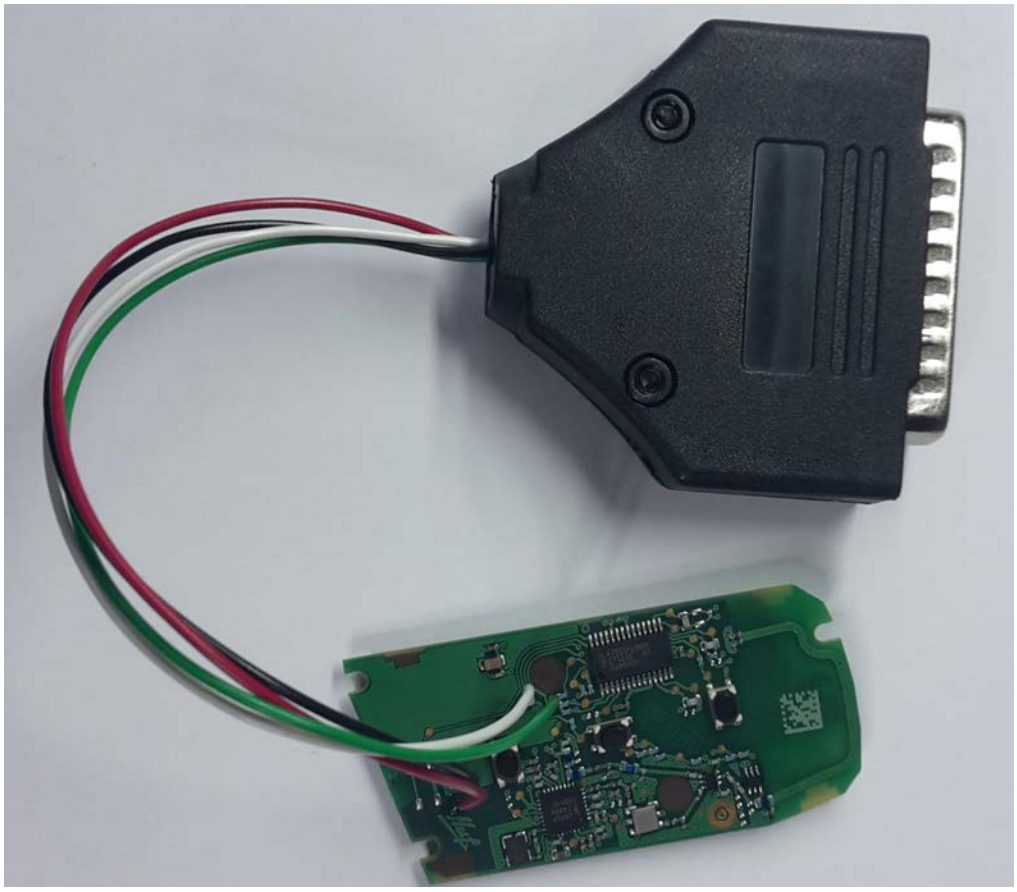


The last added keys for renew are the following:

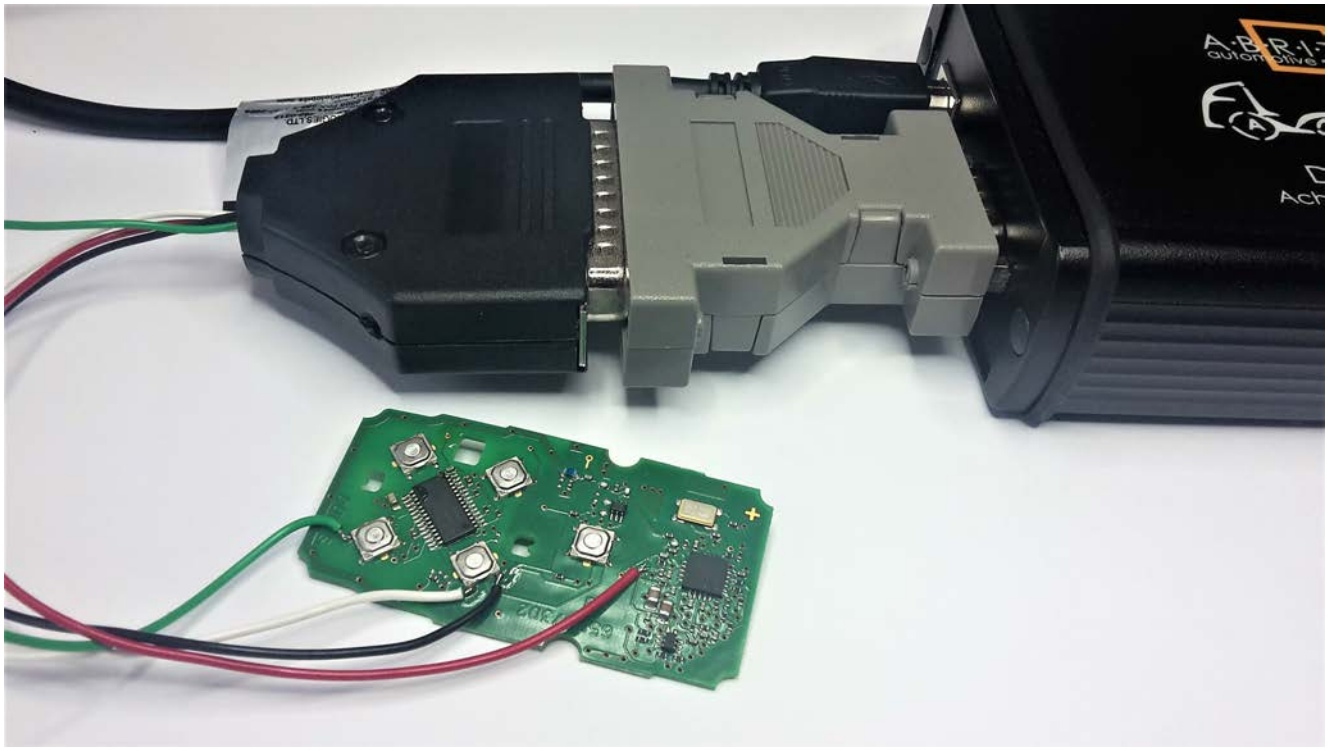
*AUDI 8T0959754 433MHz R 233.453.111 02
*AUDI 8T0959754A 315MHz R 233.453.111 02
*AUDI 8T0959754F 433MHz K 233.453.111 02
*AUDI 8T0959754F 433MHz K 233.453.111 05-06
*AUDI 8T0959754F 433MHz K 233.453.111 05-06
*AUDI 4G0959754G 315MHz K 233.453.111 05-06
*AUDI 4H0959754G 315MHz K 233.453.111 05-06
*AUDI 4H0959754K 868MHz K 233.453.111 05-06
*AUDI 8T0959754 433MHz R 233.453.111 05-06
*AUDI 8T0959754D 868MHz R 233.453.111 05-06
*AUDI 8T0959754G 315MHz K 233.453.111 05-06
*AUDI 4G0959754BP 315MHz K 233.453.211 01-02
*AUDI 4G0959754DB 315MHz K 233.453.211 01-02
*AUDI 4G0959754DC 315MHz K 233.453.211 01-02
*AUDI 4H0959754DA 433MHz K 233.453.211 01-02
*AUDI 4H0959754DB 315MHz K 233.453.211 01-02
*AUDI 8K0959754BR 868MHz K 233.453.211 01-02
*AUDI 8K0959754D 868MHz K 233.453.211 01-02
*BMW F HUF5662 315MHz
*BMW F HUF5663 433MHz
*BMW F HUF5767 433Mhz
*BMW F 5WK49662 433MHz
*BMW F 5WK49663 315MHz
*BMW E 5WK49127 315MHz REMOTE
*BMW E 5WK49145 868MHz KEYLESS
*BMW E 5WK49147 315MHz KEYLESS
*PORSCHE 7PP959753BN 434MHz
*PORSCHE 7PP959753BQ 315MHz
*PORSCHE 7PP959753BM 315MHz
*PORSCHE 7PP959753BS 434MHz
*VOLVO 5WK49266 900MHz
*RANGE ROVER 5E0U40247 434MHz
*MITSUBISHI G8D 644M
*PSA 21676652
*PSA E33CI002
*PSA E25CI009
*PSA E28CI01B
*CHR JEEP DODGE KOBOTO4A
*BUICK 13500224(13584825) 315MHz
*BUICK 13500225(13584825) 315MHz
*OPEL ASTRAJ/INSIGNIA 13500234 433MHz 3BTN
*CHEVROLET 13500319(13584829) 315MHz 5BTN
*CHEVROLET 13575163 433MHz 2BTN
*CHEVROLET 13575175 433MHz 3BTN
*CHEVROLET 13500221 315MHz
*GM KEYLESS 433MHz 5BTN
*CADILLAC NBG009768T 315MHz 5BTN KEYLESS

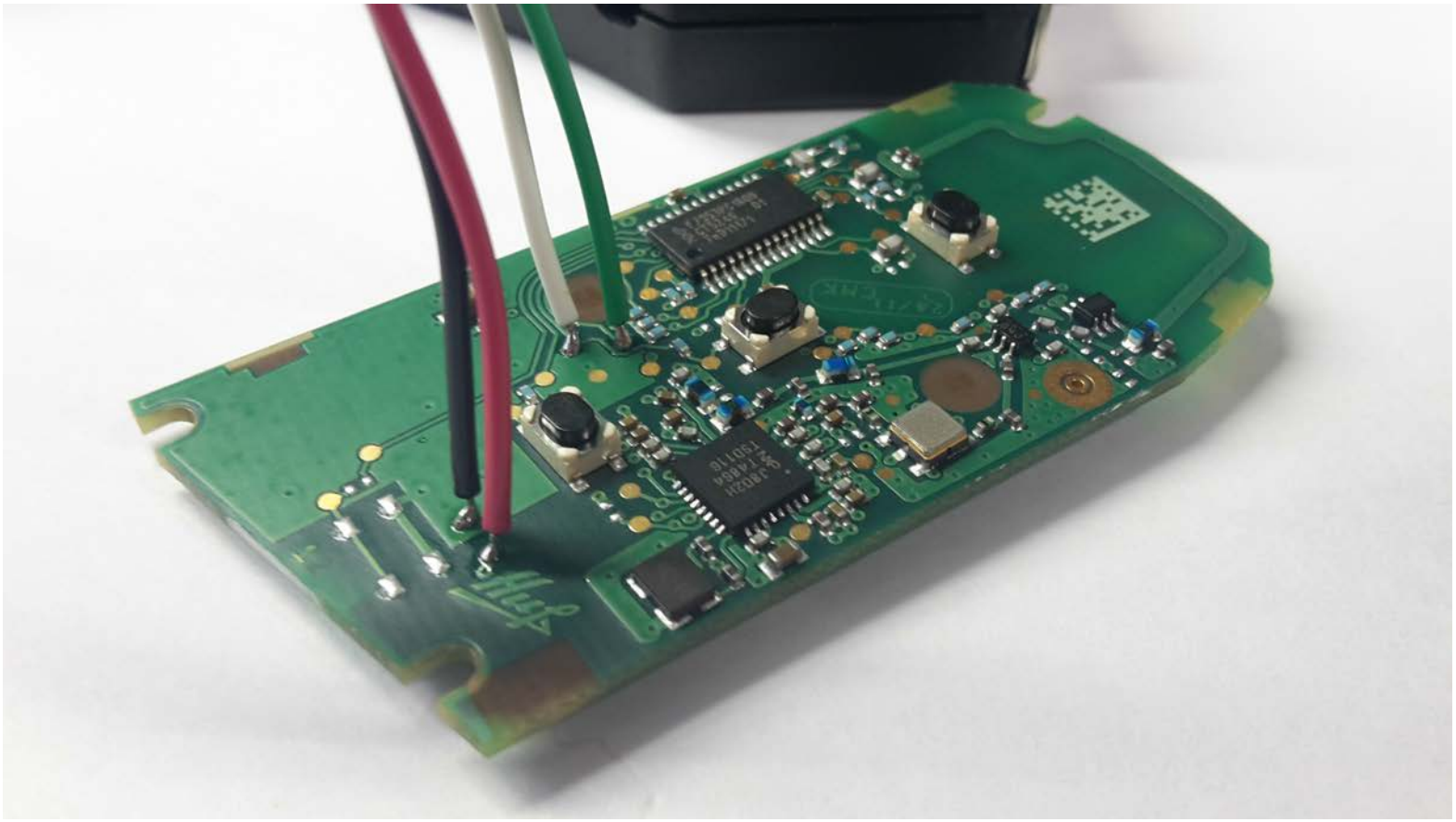
Note: If a wiring diagram is missing in the software, please send an email to support@abrites.com together with your AVDI ID and a picture of the key you want to renew with its product version.

The following photos will show you how a soldered PCB looks like. The Example is of a BMW F-Series HUF Key PCB:

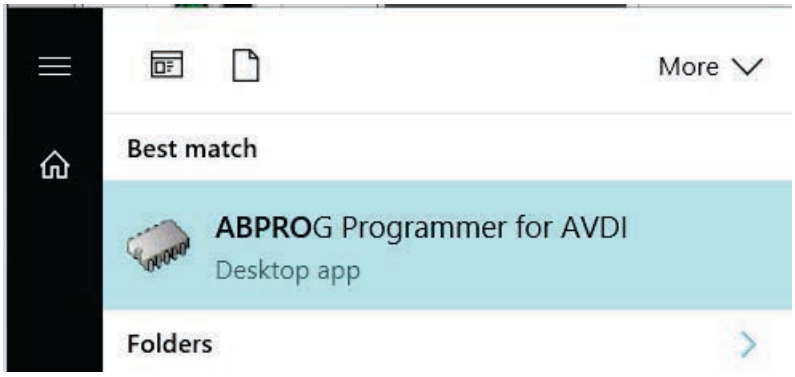


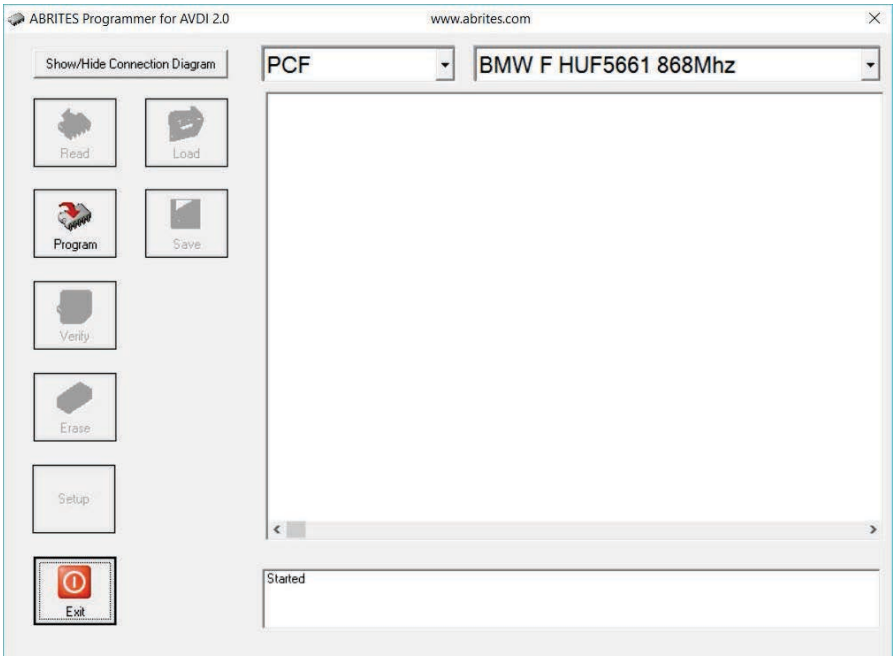
You can connect the adapter to the ABPROG adapter to AVDI as shown in the picture below:



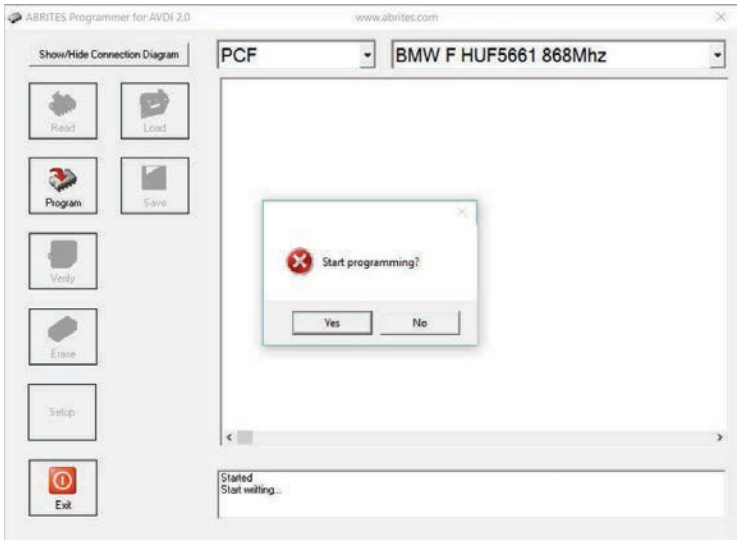


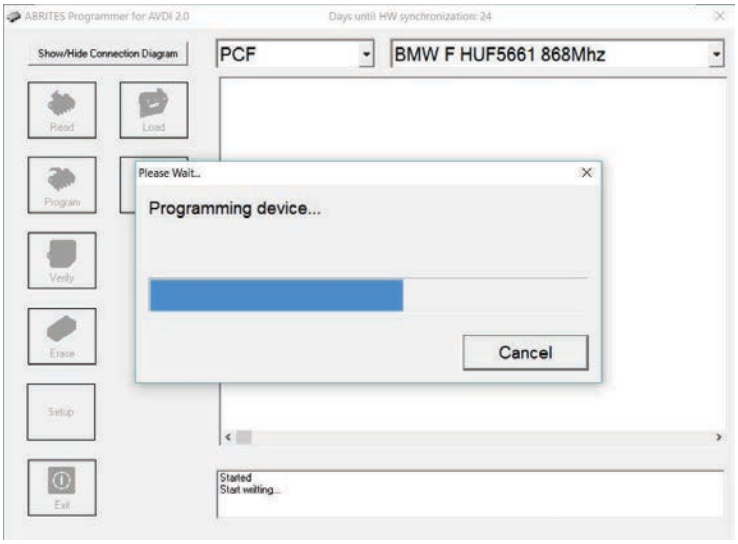
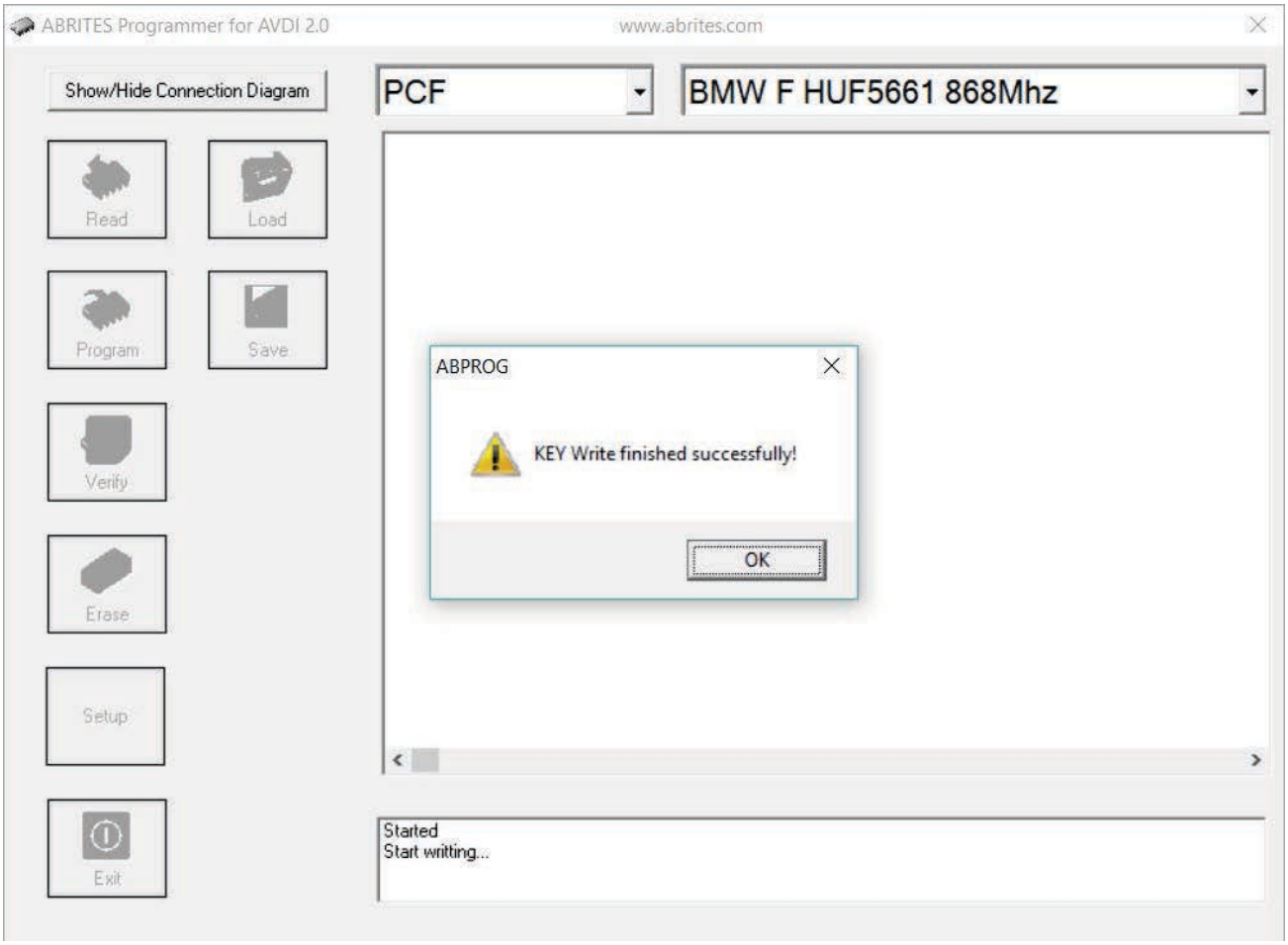
Once the cables of the ABPROG Adapter are soldered to the PCB, the ABPROG software can be started:





Select the "PCF" Option from the drop-down menu and the PCB model you are about to renew. After the desired options are selected, you can click on "Program" to renew the key and make it virgin. Click on "Yes" to confirm the renewal process.





Once the procedure is completed, you will see the "KEY Write finished successfully message". This means that the key is now renewed and made virgin. You can continue with programming the key to another car.