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1. Safety Precautions and Warnings

To prevent personal injury or damage to vehicles and/or the tool, read this instruction manual first and observe the following safety precautions at a minimum whenever working on a vehicle:

- Always perform automotive testing in a safe environment.
- Wear safety eye protection that meets ANSI standards.
- Keep clothing, hair, hands, tools, test equipment, etc. away from all moving or hot engine parts.
- Operate the vehicle in a well ventilated work area: Exhaust gases are poisonous.
- Put blocks in front of the drive wheels and never leave the vehicle unattended while running tests.
- Use extreme caution when working around the ignition coil, distributor cap, ignition wires and spark plugs. These components create hazardous voltages when the engine is running.
- Put the transmission in PARK (for automatic transmission) or NEUTRAL (for manual transmission) and make sure the parking brake is engaged.
- Keep a fire extinguisher suitable for gasoline/chemical/electrical fires nearby.
- Don’t connect or disconnect any test equipment while the ignition is on or the engine is running.
- Keep the tool dry, clean, free from oil/water or grease. Use a mild detergent on a clean cloth to clean the outside of the scan tool, when necessary.

2. General Information

Thank you for choosing BMW Multi Tool.

This manual includes the use of equipment notes, please read this manual carefully before use so that you can correctly use it.

X-Horse Electronics, 2011

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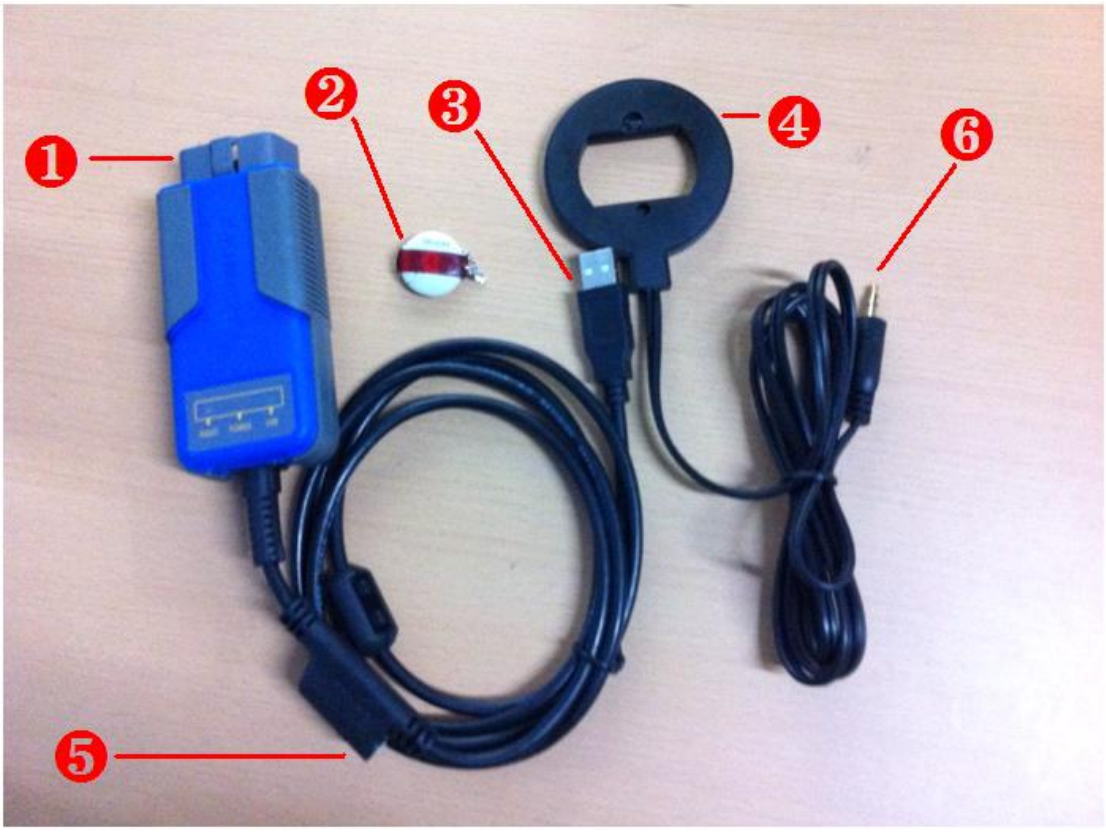
3. Hardware Overview

3.1. Tool Description



ITEM	Description
1	**OBD II CONNECTOR** Connects the tool to the vehicle's Data Link connector (DLC).
2	**Dongle** USB dongle.
3	**USB CONNECTOR** Connects the tool to the PC/Laptop through USB Cable.
4	**Programmer** Program keys.
5	**Programmer Female Pin** Connects programmer to device.
6	**Programmer Male Pin** Connects programmer to device.

3.2. Specifications

ITEM	Description		
Operating Temperature	-20 to 70 °C (-4 to 158 °F)		
Storage Temperature	-40 to 85 °C (-40 to 185 °F)		
Diagnostic Interface	16 PIN		
USB Interface	USB 2.0		
Power	DC 5 V - 12 V		
Consumption	1 W		
Dimensions	**Length** 95 mm(3.74″)	**Width** 49 mm(1.93″)	**Height** 28 mm(1.10″)
Net Weight	85 g		
Gross Weight	223 g		

3.3. System Requirements

PC/Laptop Minimum Specification

	Minimum Specification	Recommended Specification
CPU	Pentium 3/1GHz or above	Pentium 4/1.6GHz or above
Memory(RAM)	512M or above	1G or above
HDD	40G or above	60G or above
Display	800 x 600 or above	1024 x 768 or above
OS	Win98/2000/XP/Vista	WinXP
Port	USB	USB

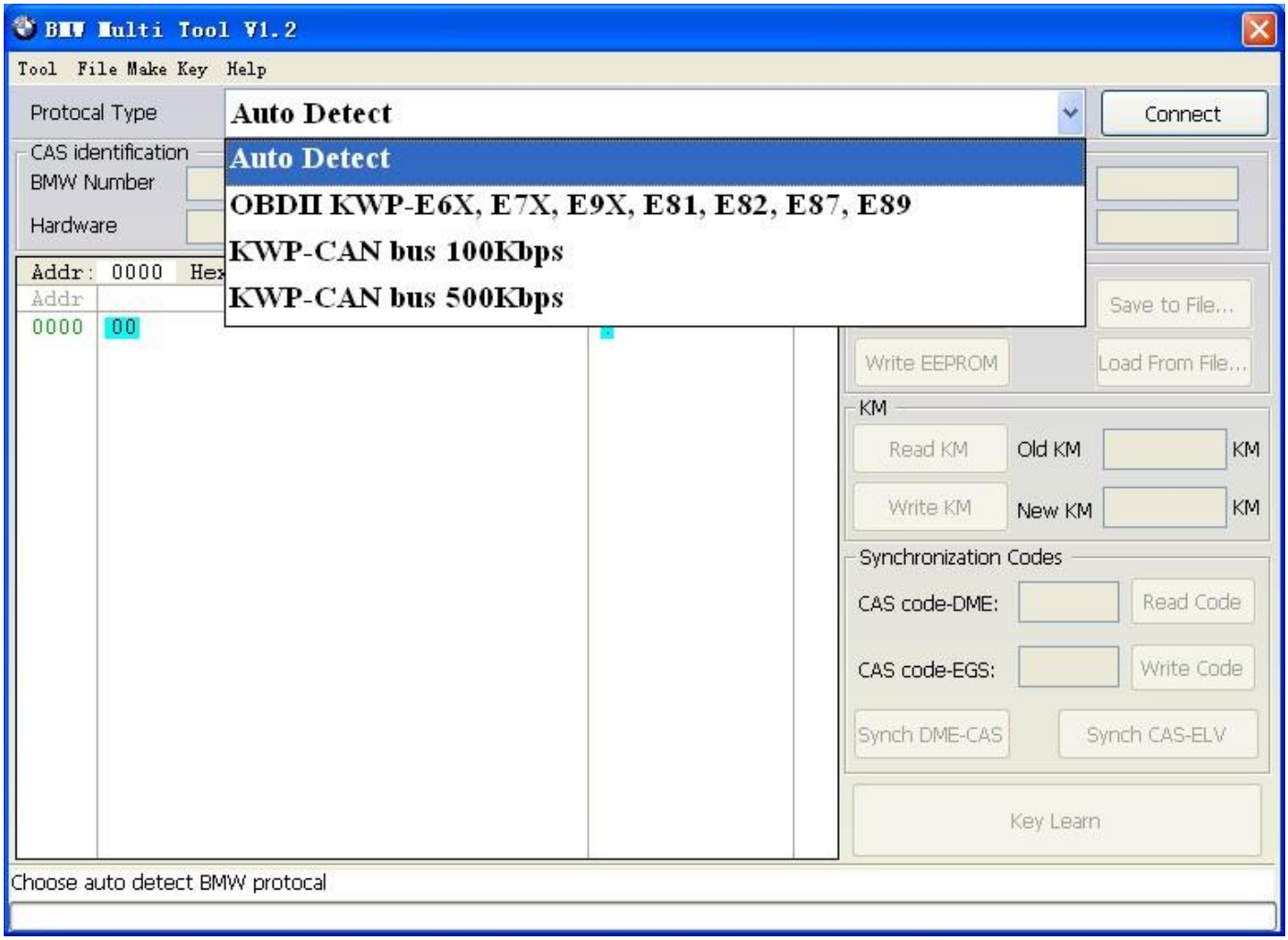
4. Software Overview

4.1. Overview

BMW Multi Tool includes forth parts, hardware device, dongle, programmer, software. Before running software you must connect dongle and hardware device to computer.

4.2. Function

Main window follows:



i. **Menu**

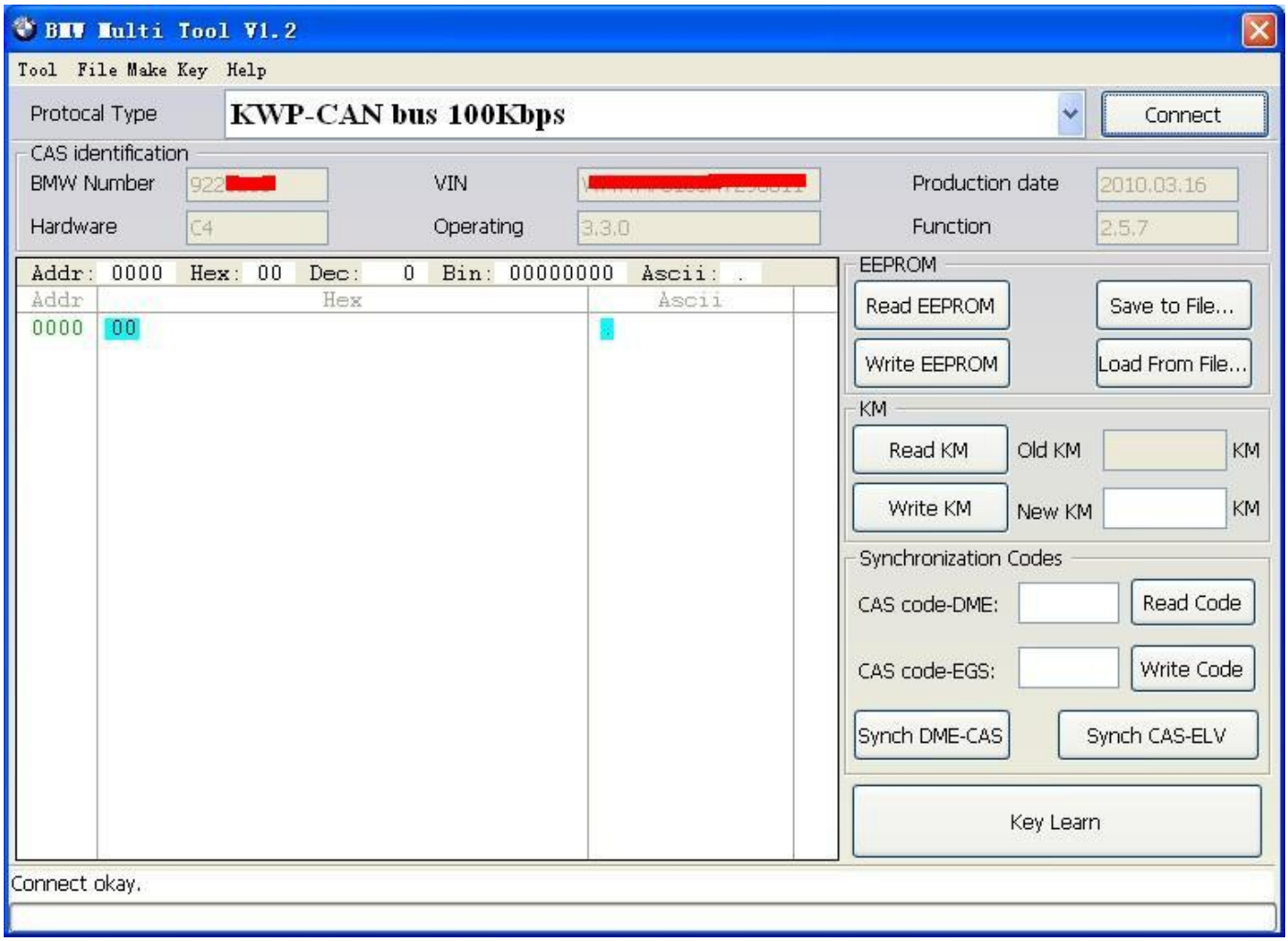
Tool: you can choose language here, support "English" and "Chinese Simplified" Restart software to apply your settings.

File Make Key: you can prepare dealer key with EWS and CAS EEPROM dump.

Help: Device update. You can get your device and dongle id version and update it.

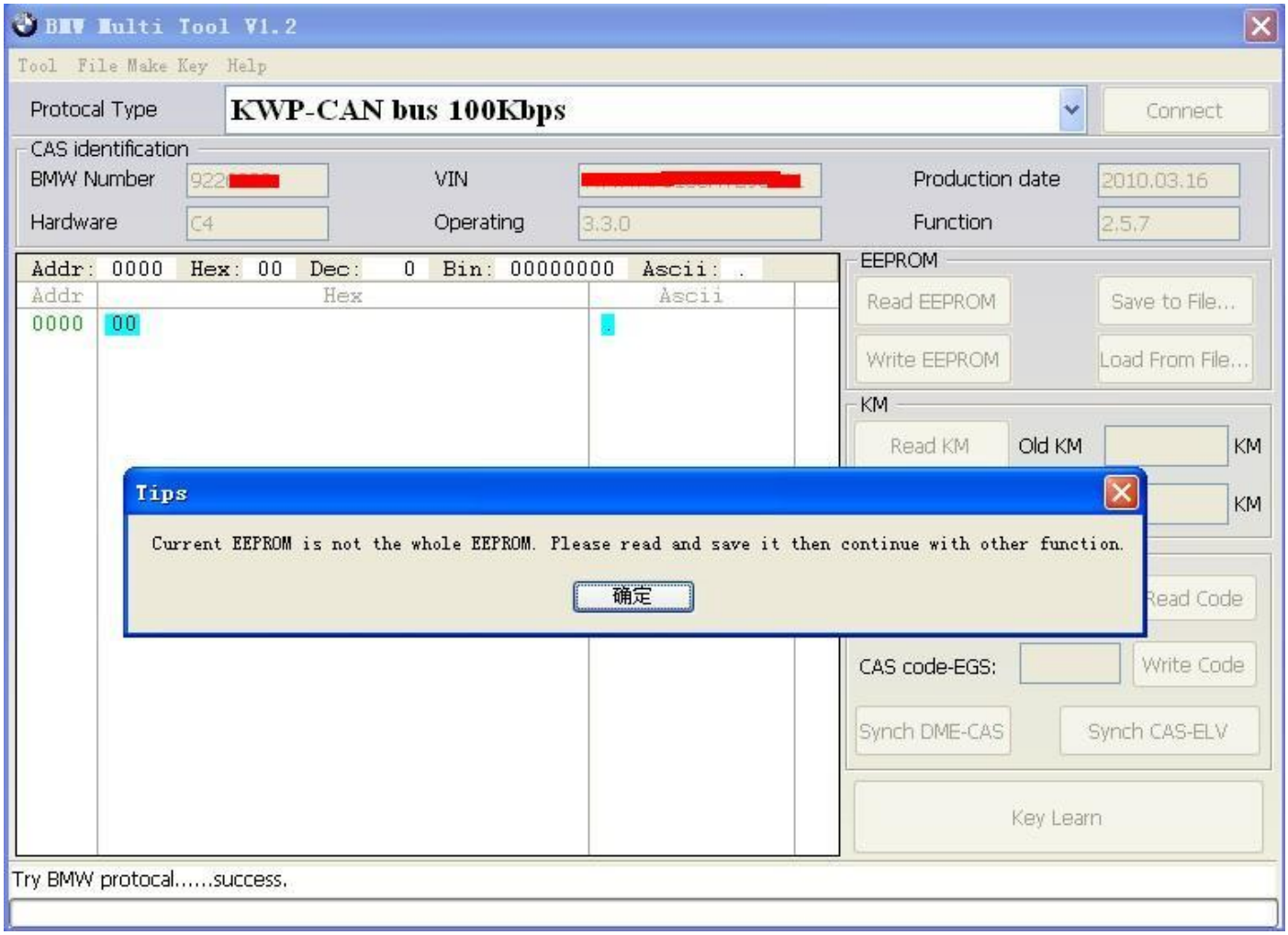
ii. Protocal type:

Now BMT support there type of protocol: KWP-CAN BUS 100Kbps, KWP-CAN BUS 500Kbps, KWP-2000. "Auto Detect " function can help you to choose the right protocol. After choose protocol okay, then press "Connect". If connected success. All CAS info will display in CAS Identification. Include CAS number, VIN, production date, etc. see the picture follows:

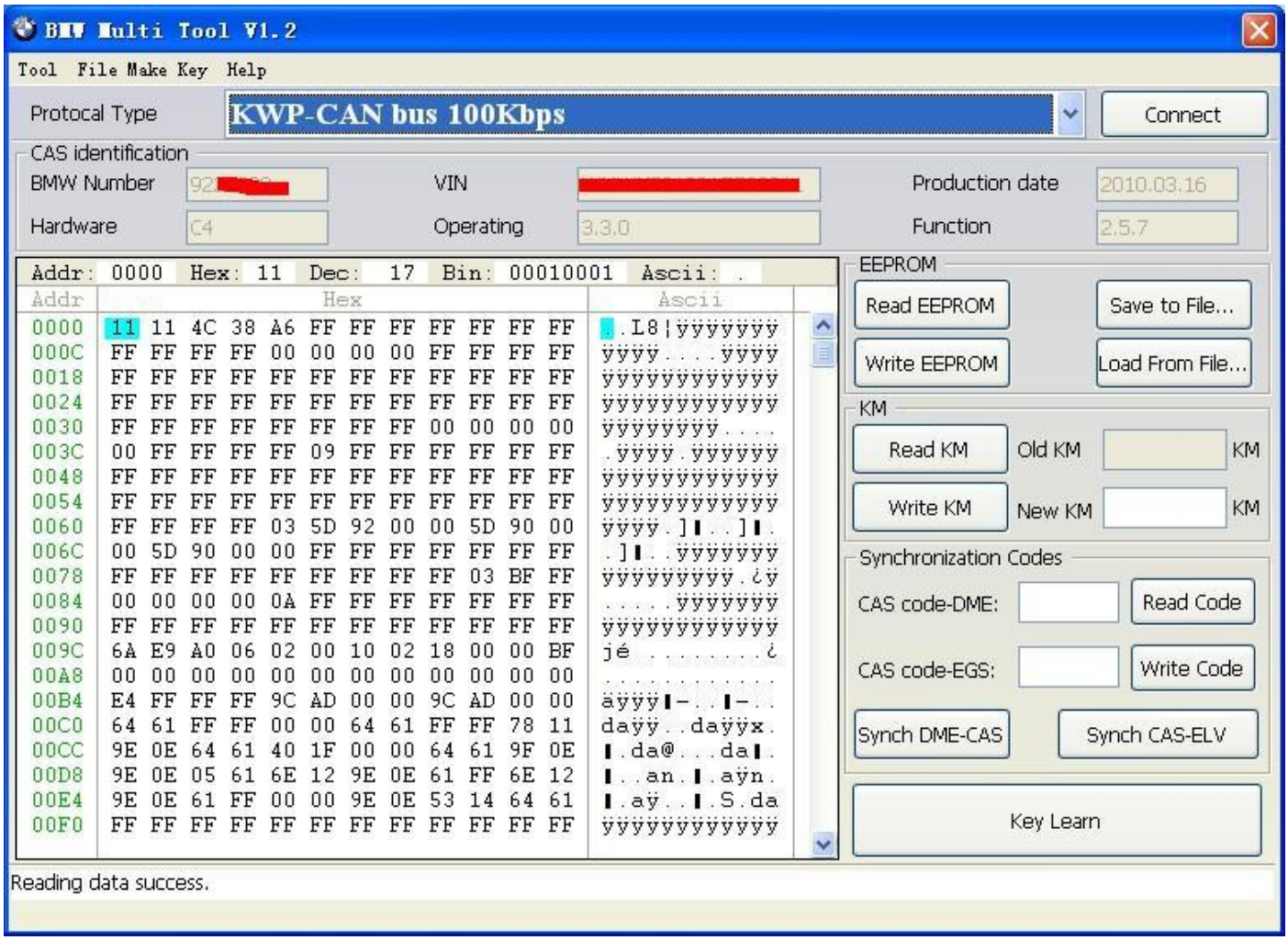


iii. EEPROM Function: Read EEPROM，Write EEPROM，Save File，Load File…

1. **You should backup the CAS EEPROM before prepare dealer key. After succeed read EEPROM, please save it as back file. This step is very important.**
2. **Now can't read the whole EEPROM for cas3 system. But the main section is contained. It should be saved. When you read CAS EEPROM, it will give tips as follow(Press ok to continue):**

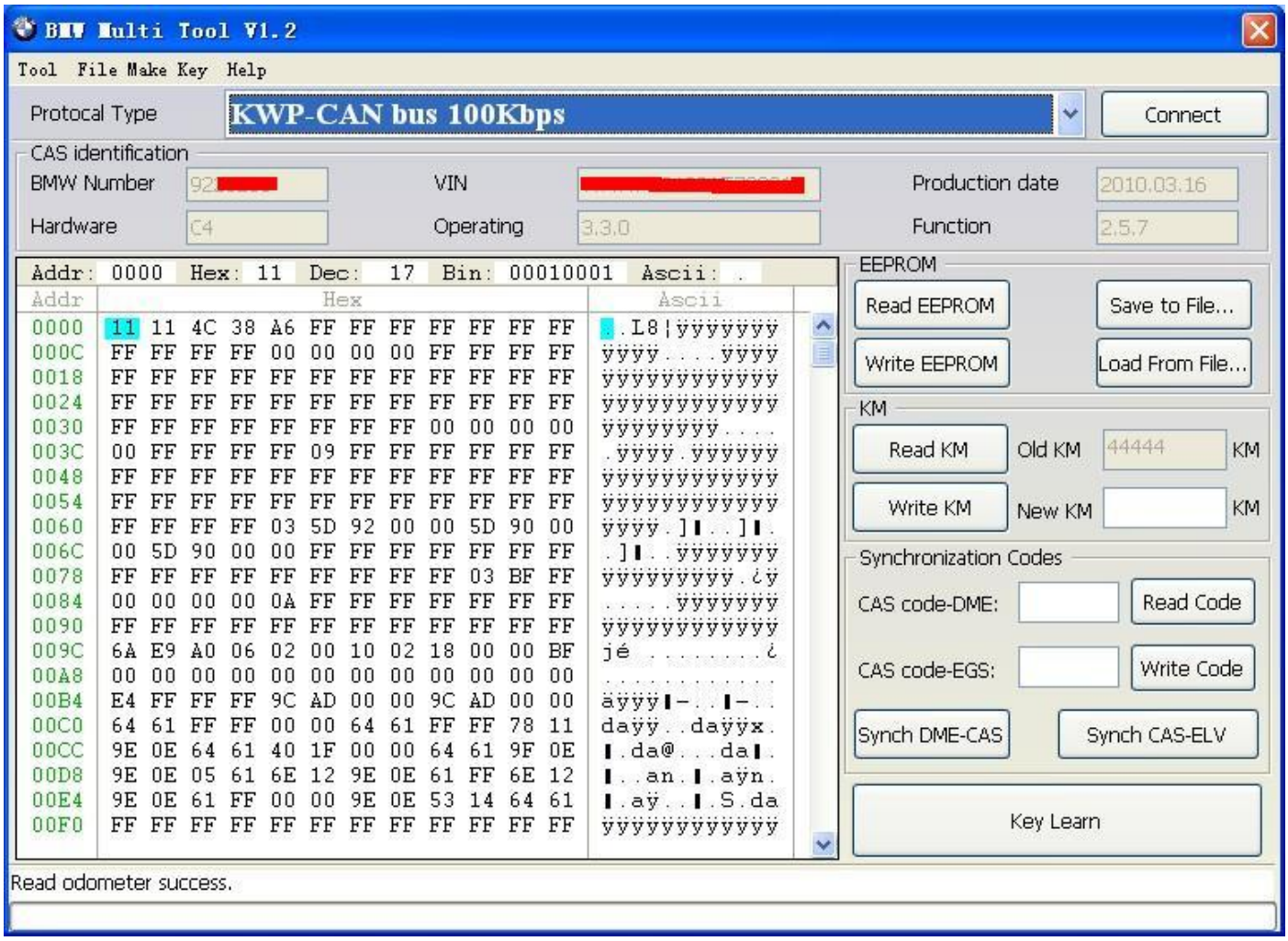


3. **After success read it, you will get:**

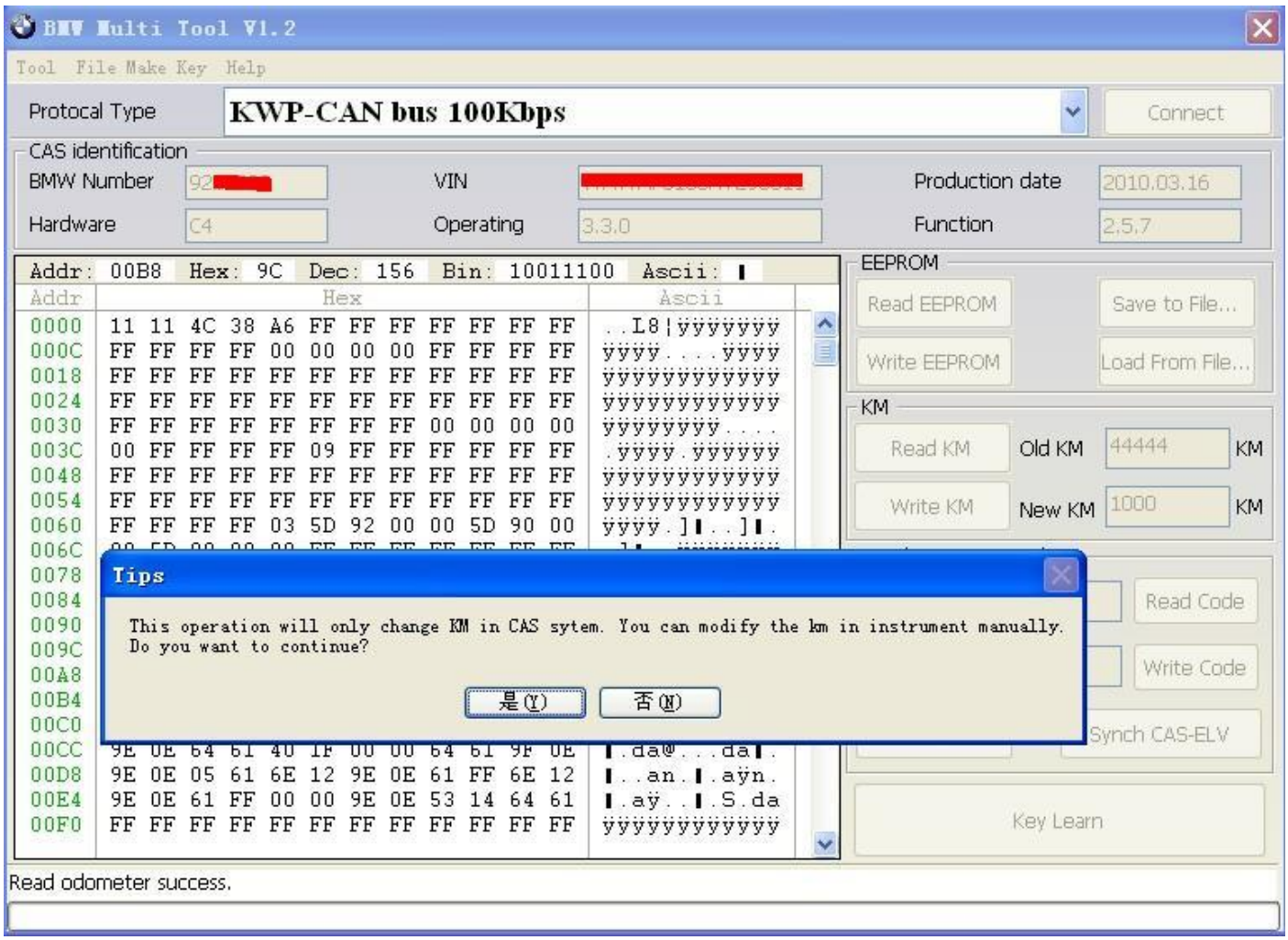


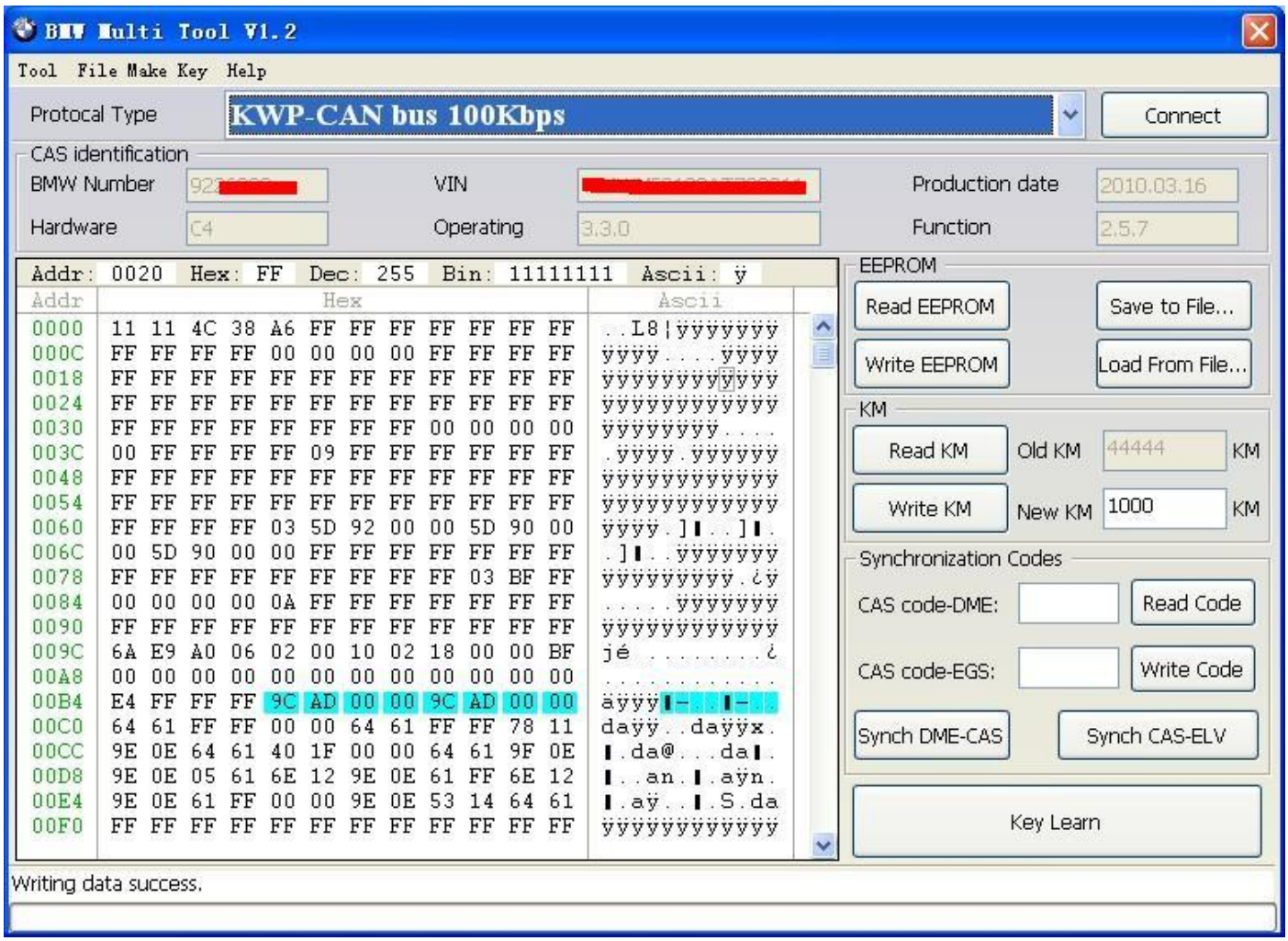
4. **Write EEPROM function is only support CAS1, CAS2 system. Doesn't support write to cas3 system.**

iv. **Odometer: Support read and change KM stored in CAS system. Don't support to change KM in instrument. If you want to change the KM display in instrument. You should change KM in CAS system first. Then modify the KM in instrument manually. Read KM :**



When you try to write KM to CAS system, you will get the following tips: Press OK to continue.


BMW Multi Tool V1.2
Tool File Make Key Help
Protocal Type
KWP-CAN bus 100Kbps
Connect
CAS identification
BMW Number
VIN
Production date
2010.03.16
Hardware
C4
Operating
3.3.0
Function
2.5.7
Addr: 00B8 Hex: 9C Dec: 156 Bin: 10011100 Ascii:
EEPROM
Read EEPROM
Save to File...
Write EEPROM
Load From File...
KM
Read KM
Old KM
44444
KM
Write KM
New KM
1000
KM
Tips
This operation will only change KM in CAS sytem. You can modify the km in instrument manually.
Do you want to continue?
是(Y)
否(N)
Read Code
Write Code
Synch CAS-ELV
Key Learn
Read odometer success.

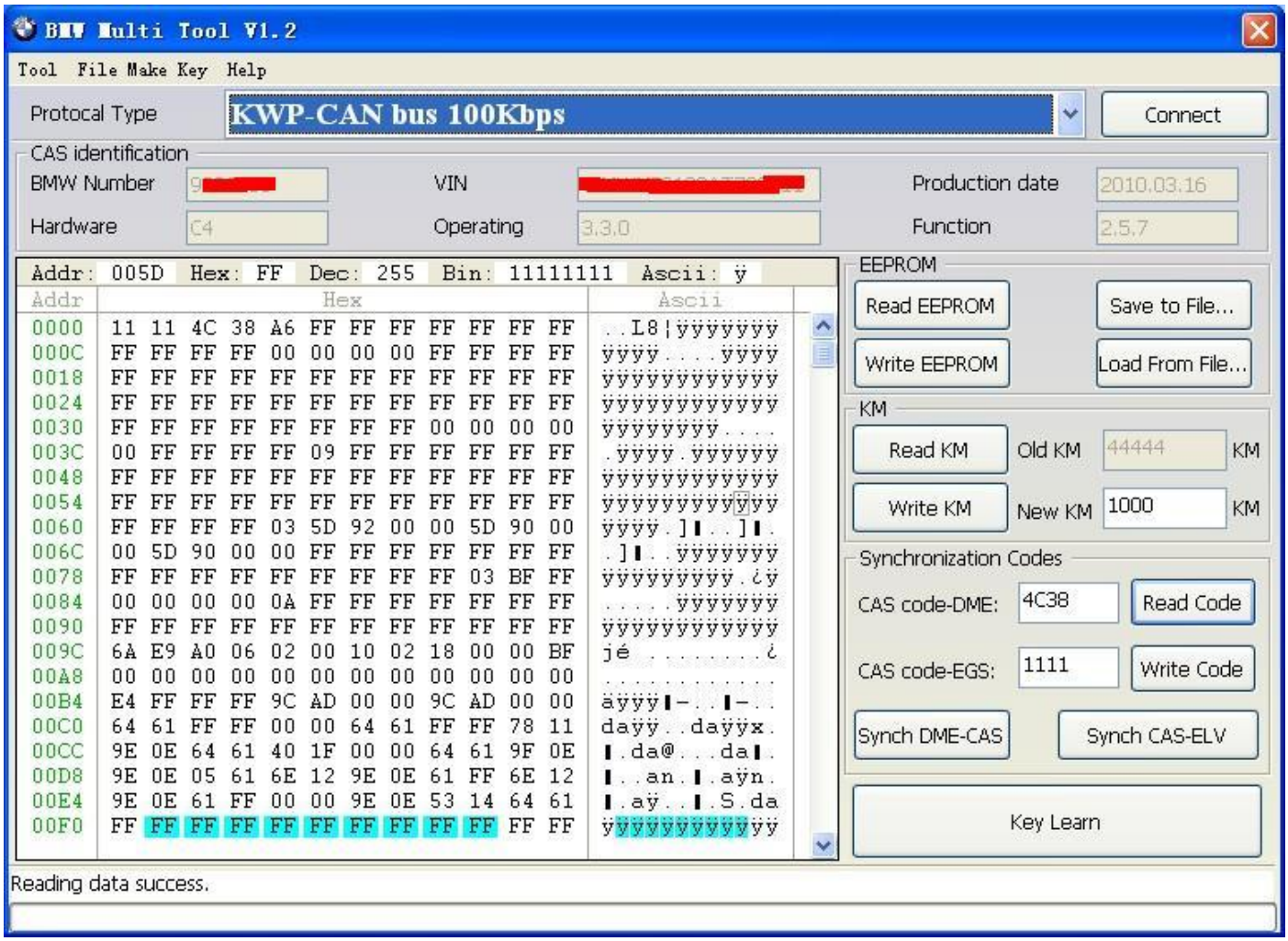

BMW Multi Tool V1.2
Tool File Make Key Help
Protocal Type
KWP-CAN bus 100Kbps
Connect
CAS identification
BMW Number
VIN
Production date
2010.03.16
Hardware
C4
Operating
3.3.0
Function
2.5.7
Addr: 0020 Hex: FF Dec: 255 Bin: 11111111 Ascii: ÿ
Addr Hex Ascii
0000 11 11 4C 38 A6 FF FF FF FF FF FF FF ..L8¦ÿÿÿÿÿÿÿ
000C FF FF FF FF 00 00 00 00 FF FF FF FF ÿÿÿÿ....ÿÿÿÿ
0018 FF FF FF FF FF FF FF FF FF FF FF FF ÿÿÿÿÿÿÿÿÿÿÿÿ
0024 FF FF FF FF FF FF FF FF FF FF FF FF ÿÿÿÿÿÿÿÿÿÿÿÿ
0030 FF FF FF FF FF FF FF FF 00 00 00 00 ÿÿÿÿÿÿÿÿ....
003C 00 FF FF FF FF 09 FF FF FF FF FF FF .ÿÿÿÿ.ÿÿÿÿÿÿ
0048 FF FF FF FF FF FF FF FF FF FF FF FF ÿÿÿÿÿÿÿÿÿÿÿÿ
0054 FF FF FF FF FF FF FF FF FF FF FF FF ÿÿÿÿÿÿÿÿÿÿÿÿ
0060 FF FF FF FF 03 5D 92 00 00 5D 90 00 ÿÿÿÿ.]▌..]▌.
006C 00 5D 90 00 00 FF FF FF FF FF FF FF .]▌..ÿÿÿÿÿÿÿ
0078 FF FF FF FF FF FF FF FF FF 03 BF FF ÿÿÿÿÿÿÿÿÿ.¿ÿ
0084 00 00 00 00 0A FF FF FF FF FF FF FF .....ÿÿÿÿÿÿÿ
0090 FF FF FF FF FF FF FF FF FF FF FF FF ÿÿÿÿÿÿÿÿÿÿÿÿ
009C 6A E9 A0 06 02 00 10 02 18 00 00 BF jé ....¿
00A8 00 00 00 00 00 00 00 00 00 00 00 00 ....
00B4 E4 FF FF FF 9C AD 00 00 9C AD 00 00 äÿÿÿ▌-..▌-..
00C0 64 61 FF FF 00 00 64 61 FF FF 78 11 daÿÿ..daÿÿx.
00CC 9E 0E 64 61 40 1F 00 00 64 61 9F 0E ▌.da@...da▌.
00D8 9E 0E 05 61 6E 12 9E 0E 61 FF 6E 12 ▌..an.▌.aÿn.
00E4 9E 0E 61 FF 00 00 9E 0E 53 14 64 61 ▌.aÿ..▌.S.da
00F0 FF FF FF FF FF FF FF FF FF FF FF FF ÿÿÿÿÿÿÿÿÿÿÿÿ
EEPROM
Read EEPROM
Save to File...
Write EEPROM
Load From File...
KM
Read KM
Old KM
44444
KM
Write KM
New KM
1000
KM
Synchronization Codes
CAS code-DME:
Read Code
CAS code-EGS:
Write Code
Synch DME-CAS
Synch CAS-ELV
Key Learn
Writing data success.

v. Synchronization Codes:

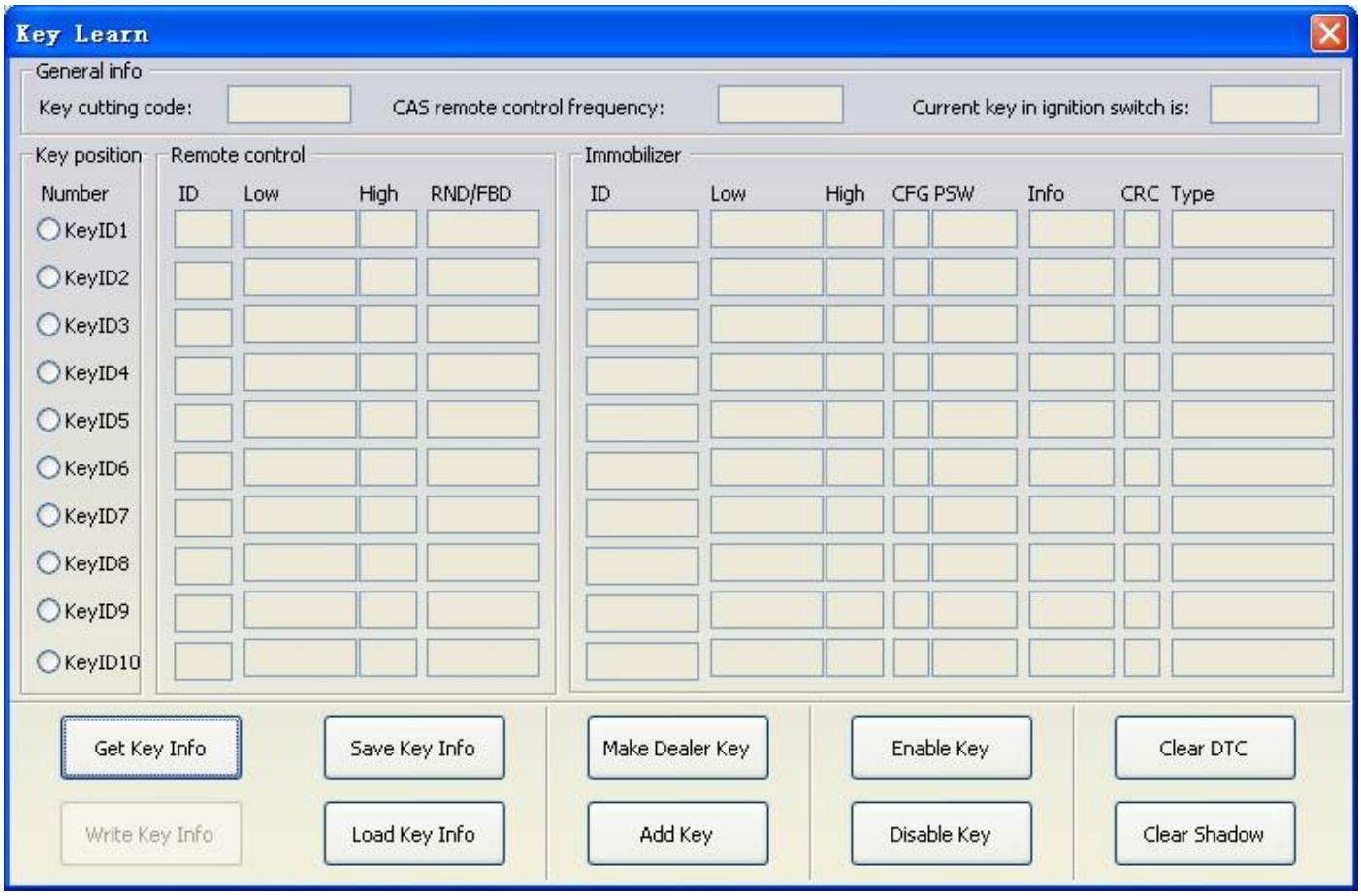
1、CAS3 code-DME 、CAS3code-EGS: Read and write DME and EGS code stored in CAS3 system.

2、Synchronize DME and CAS— this function will be useful while prepare dealer key or any other operation which cause can't start the engine.

3、Synchronize CAS and ELV — this function can help clear wheel errors.



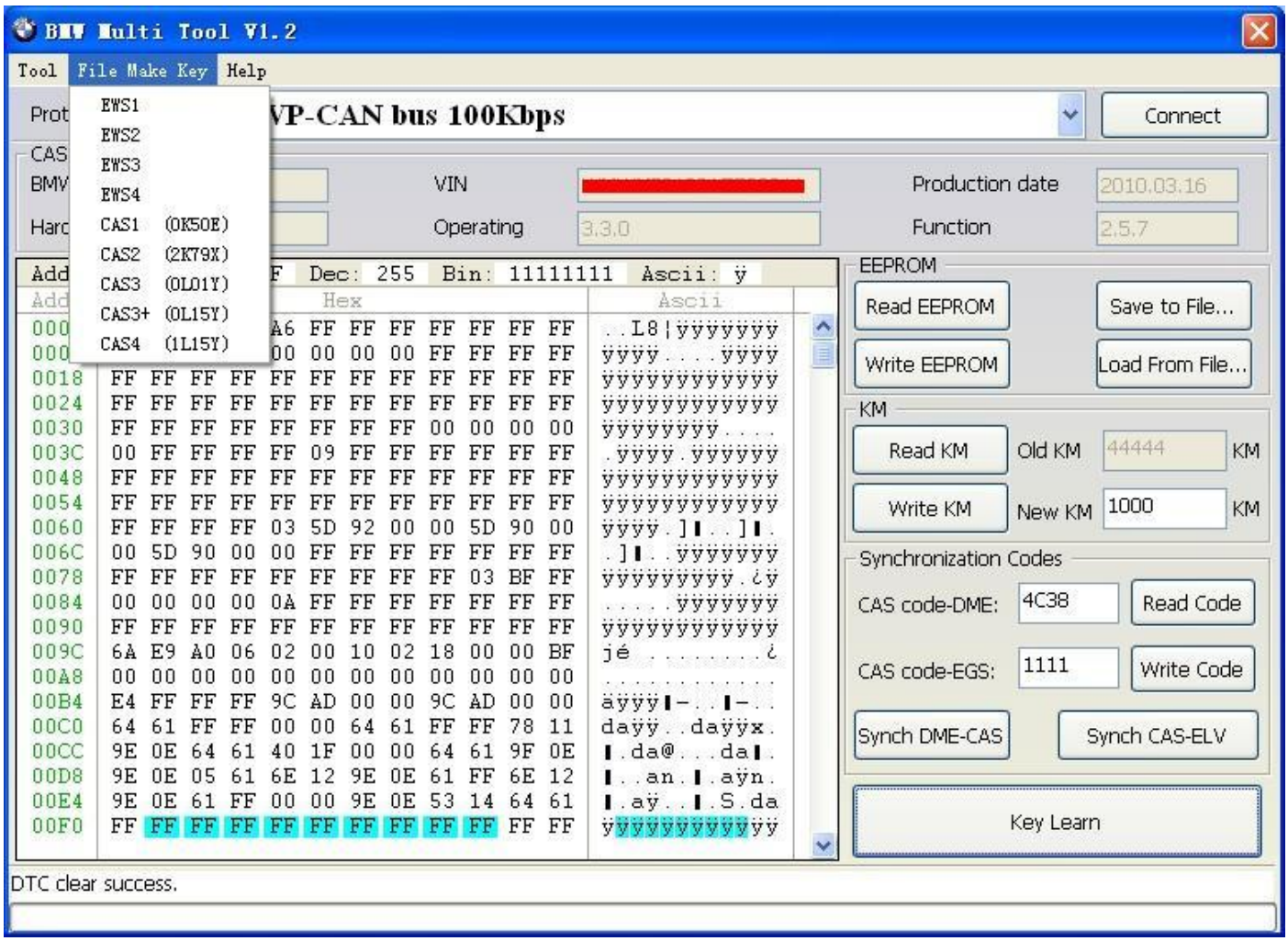
vi. Key Learn



Function introduction:

1. **Get Key Info: With this function you can get the key cutting, remote frequency, and key data.**
2. **Save Key Info: Save the read key info.**
3. **Load Key Info: Load the saved key info. To see the key data and prepare for write key info.**
4. **Write Key Info: Write the loaded key info into CAS system.**
5. **Make Dealer Key: You can prepare dealer key after you get key info successfully. Also you should choose the key position.**
6. **Add key: Add the new dealer key into CAS system. Some CAS system needs this step to start the engine.**
7. **Enable Key: Insert a working key, choose the key position which you want to disable. The key position can't be same with the key in ignition.**
8. **Disable Key: Insert a working key, choose the key position which you want to enable. The key position can't be same with the key in ignition.**
9. **Clear DTC: Before prepare dealer key and after it you can use this function to clear DTC.**
10. **Clear Shadow：Before prepare dealer key and after it you can use this function to clear Shadow.**

vii. File Make Key



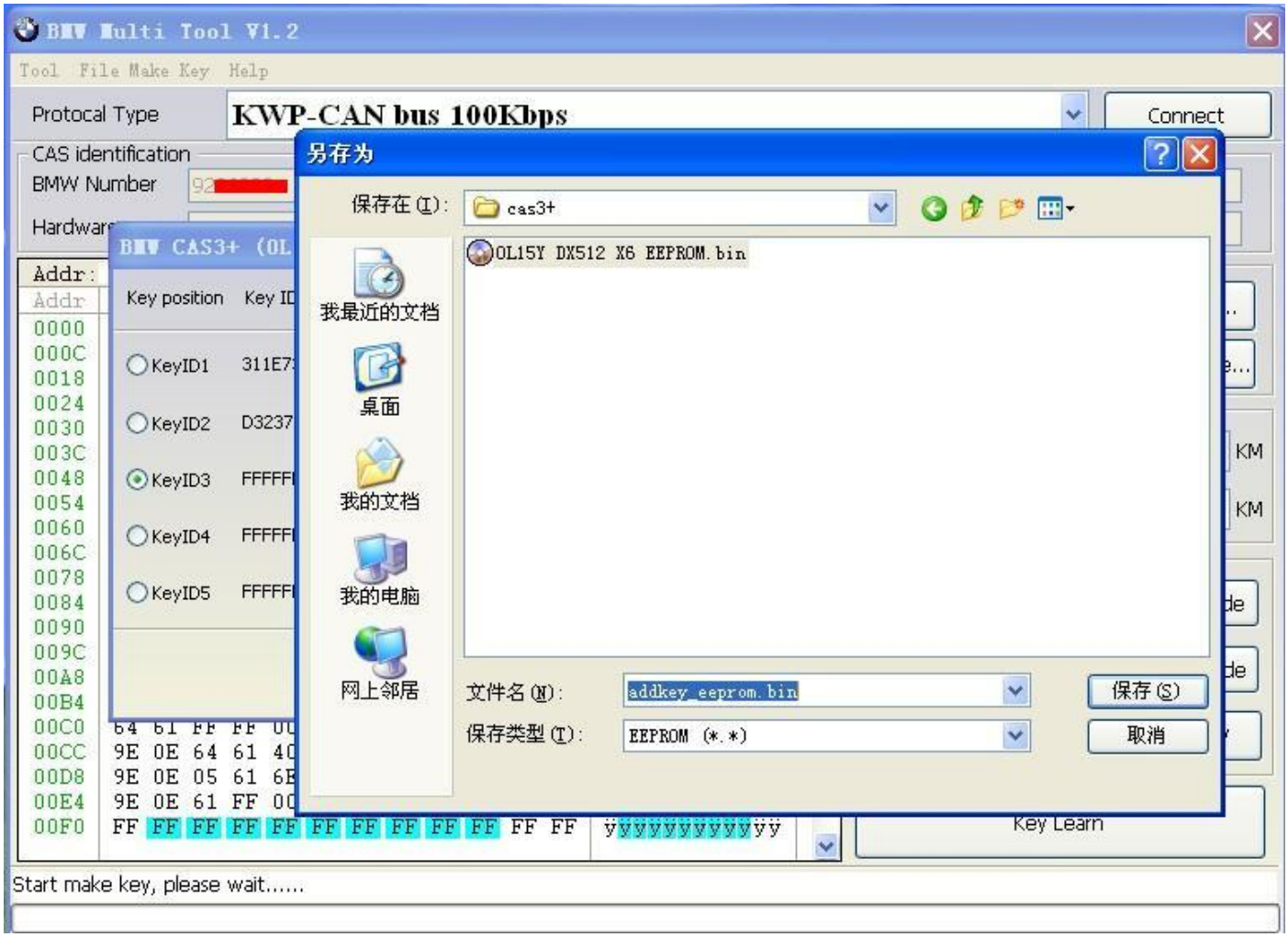
1. **Choose CAS or EWS type. It will tips you:**

2. Load the choose EEPROM file you will get the make dealer key window:

3. **Choose key position and press “Make Dealer Key” button. Flow the given tips to prepare dealer key. After succeed you can save the new EEPROM dump file.**

For EWS1, EWS2, EWS3, EWS4, CAS1, CAS2, CAS3 type the prepared dealer key can start the engine directly.

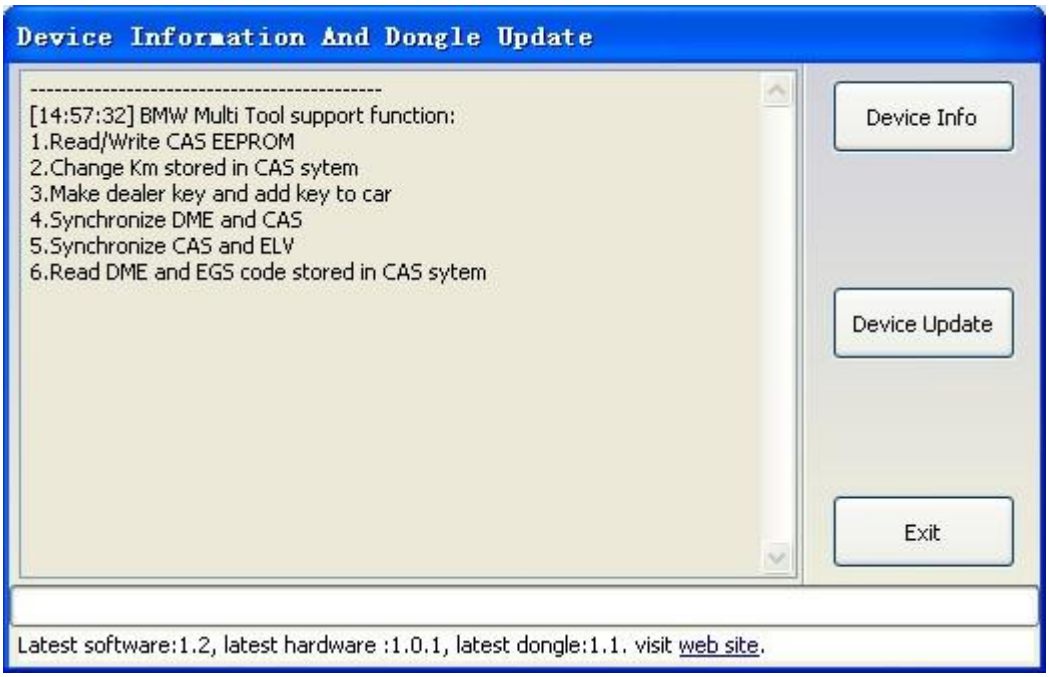
For some CA3+ type you need to write back the new dump file into car.



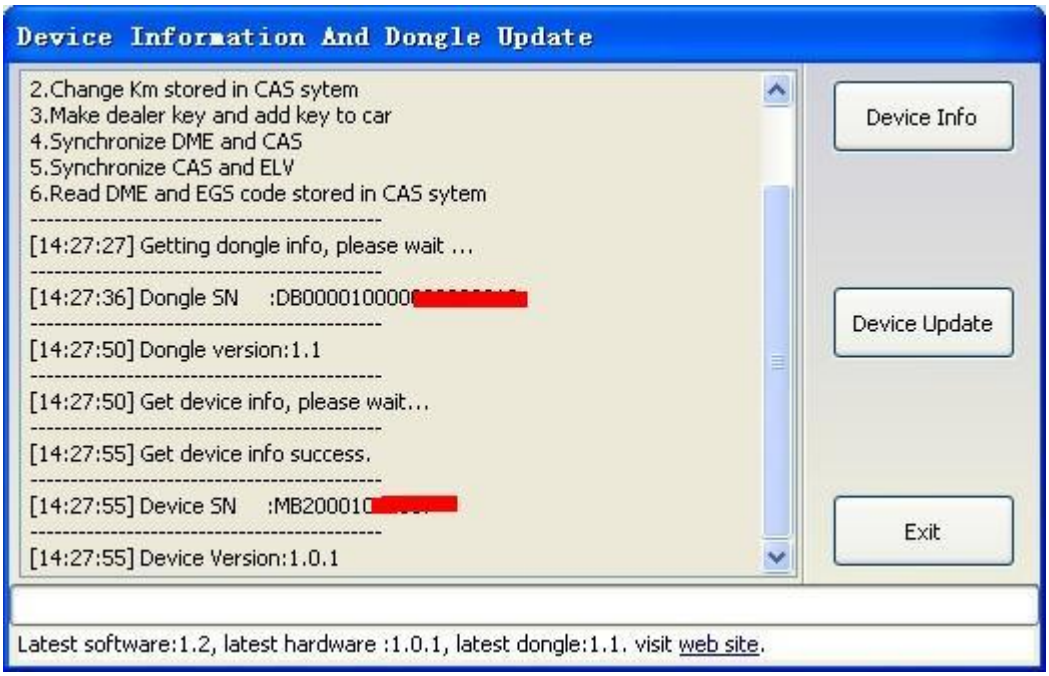
4. CAS3 encrypt data, only OBDII prepare make key is support for CAS3 encrypt data.

viii. Device Update

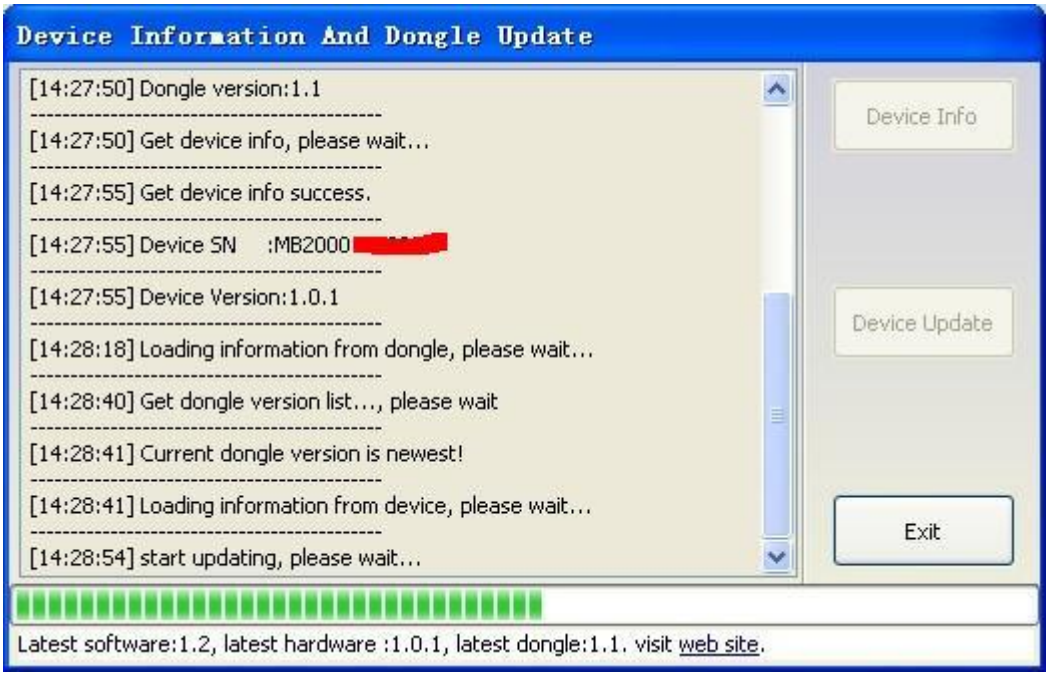
Open this window after connect to internet. You can see the latest software version, firmware version, dongle version. You can go to our website for further information. After succeeded update device firmware, must reconnect the hardware to computer.



1. Device Info: Get dongle and hardware SN and version.



2. Device Update: This function can update the dongle and device.



Process to prepare dealer key:

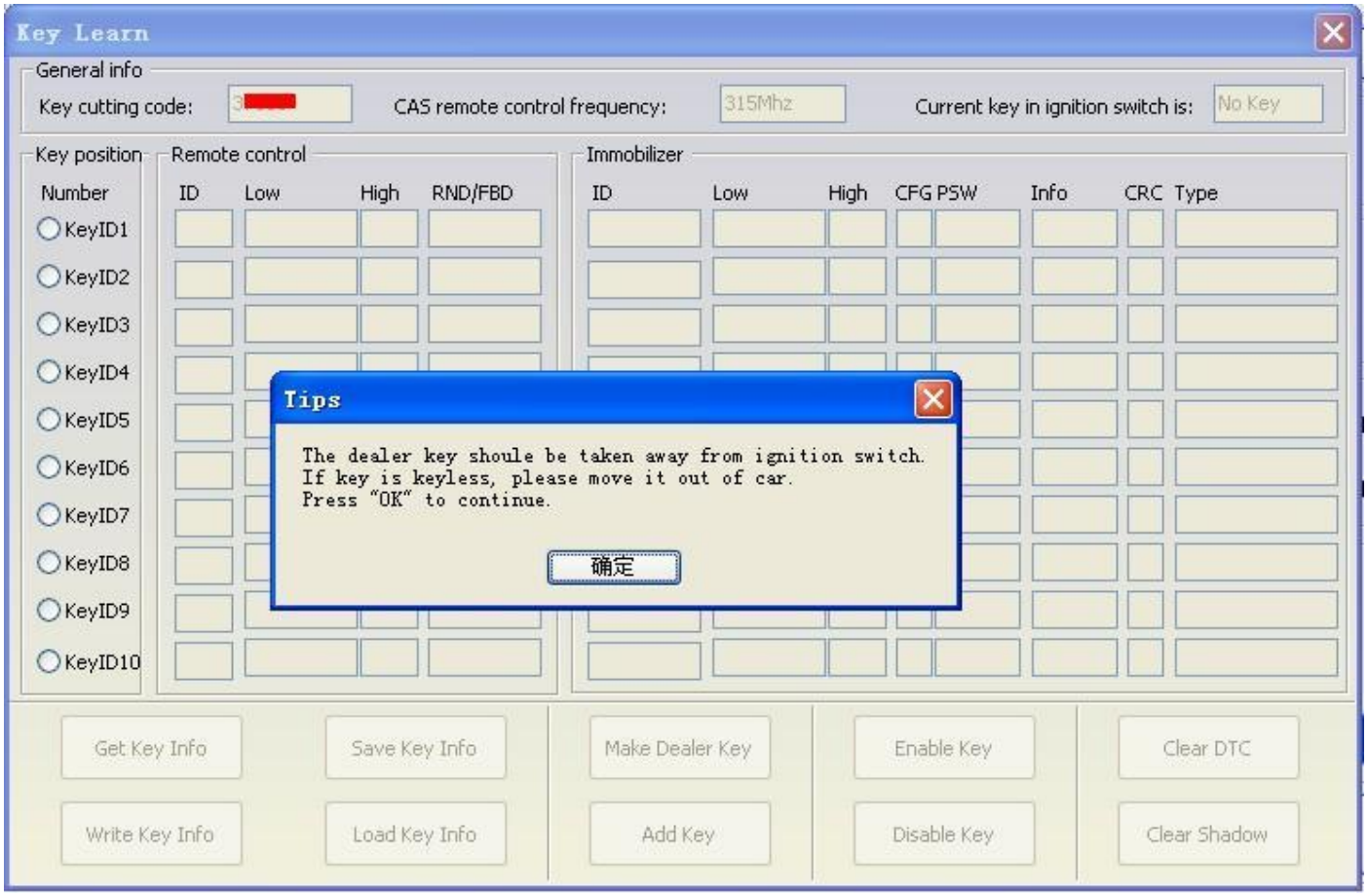
1. **On main window choose “Connect” to auto detect the current car protocol and get the CAS info.**
2. **On main window choose “Read EEPROM” to read the CAS EEPROM file and save it.**
3. **On main window choose “Key Learn” button to get key learn window.**
4. **On Key Learn window choose “Get Key Info” to get the key info stored in CAS system.(picture 2).**
5. **Choose “Save Key Info” button to save the read key info for backup.**
6. **Check the connection between programmer and device. Keep connection while make key process.**
7. **Put new blank key into the center of programmer.**
8. **Choose the position where you want to suit the key.**
9. **Press “Make Dealer Key” to prepare dealer key. After succeed you will get (picture 3)**

“Key make okay and locked. Please use it start the car. If can’t start engine, use “Add Key” function add the new dealer key to CAS system.” Once can start the engine, go to step 13.

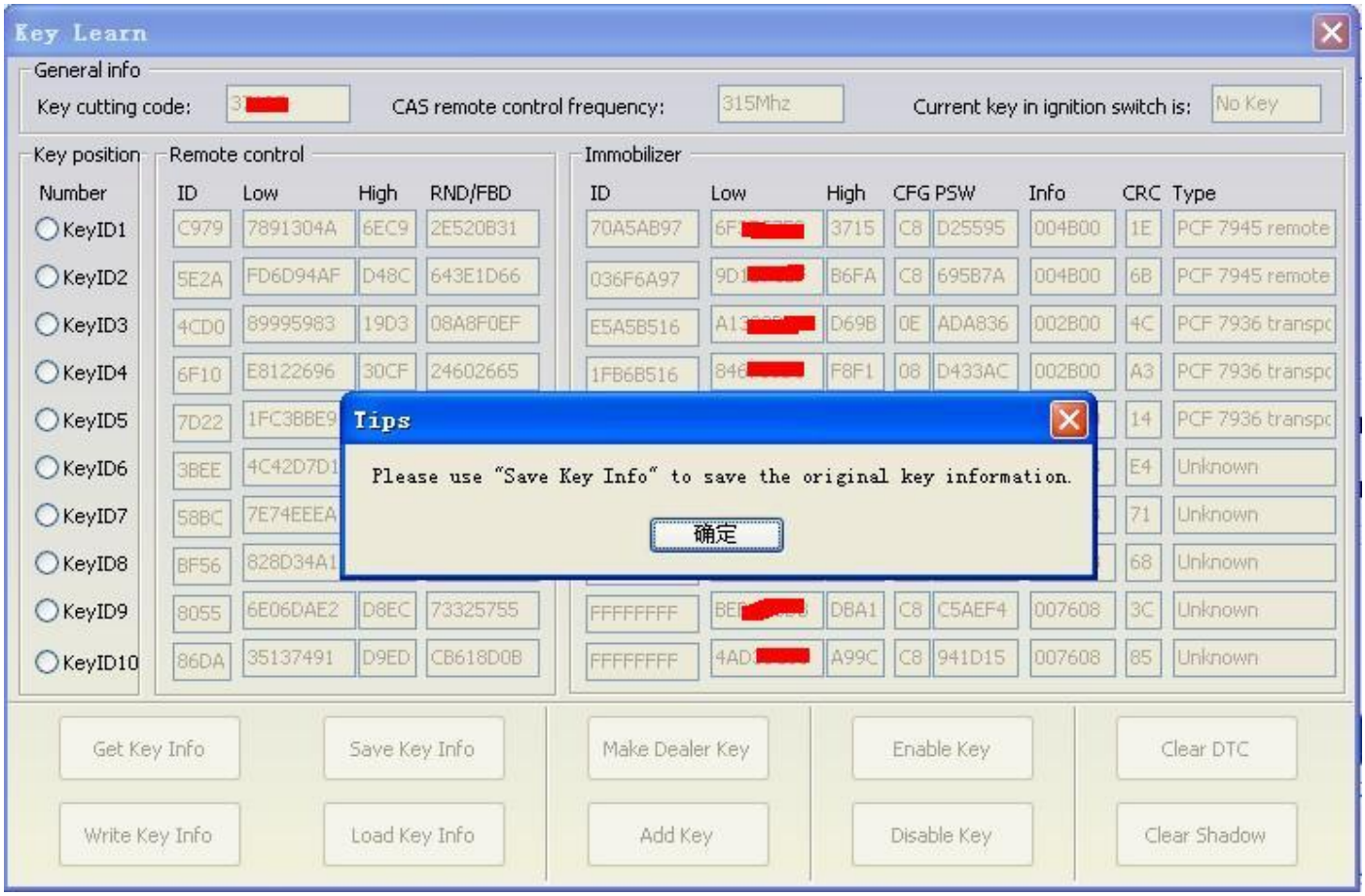
10. **Put the new dealer key into programmer. Use “Add Key” function to add the key to CAS system. After that you will get (picture 4):”New dealer key success written to CAS system. You can start engine with the new key now. If can’t please use the original working key first.”**
11. **Please return to main widow and use function “Synch DME-CAS” to synchronize DME (ECU) with CAS.**
12. **Use “Synch CAS-ELV” to clear wheel errors.**
13. **Enter to key learn window use “Clear DTC” and “Clear Shadow” function clear all error sin CAS system.**

While prepare dealer key process. Once you get the tips like picture 1, remove the key from ignition switch, if key has keyless, take the key out of car.

Picture 1:


Key Learn
General info
Key cutting code:
CAS remote control frequency:
315Mhz
Current key in ignition switch is:
No Key
Key position
Remote control
Immobilizer
Number
ID
Low
High
RND/FBD
ID
Low
High
CFG
PSW
Info
CRC
Type
KeyID1
KeyID2
KeyID3
KeyID4
KeyID5
KeyID6
KeyID7
KeyID8
KeyID9
KeyID10
Tips
The dealer key shoule be taken away from ignition switch.
If key is keyless, please move it out of car.
Press "OK" to continue.
确定
Get Key Info
Save Key Info
Make Dealer Key
Enable Key
Clear DTC
Write Key Info
Load Key Info
Add Key
Disable Key
Clear Shadow

Picture 2:


Key Learn
General info
Key cutting code:
CAS remote control frequency:
315Mhz
Current key in ignition switch is:
No Key
Key position
Remote control
Immobilizer
Number
ID Low High RND/FBD
ID Low High CFG PSW Info CRC Type
KeyID1 C979 7891304A 6EC9 2E520B31 70A5AB97 3715 C8 D25595 004B00 1E PCF 7945 remote
KeyID2 5E2A FD6D94AF D48C 643E1D66 036F6A97 B6FA C8 695B7A 004B00 6B PCF 7945 remote
KeyID3 4CD0 89995983 19D3 08A8F0EF E5A5B516 D69B 0E ADA836 002B00 4C PCF 7936 transpc
KeyID4 6F10 E8122696 30CF 24602665 1FB6B516 F8F1 08 D433AC 002B00 A3 PCF 7936 transpc
KeyID5 7D22 1FC38BE9 14 PCF 7936 transpc
KeyID6 3BEE 4C42D7D1 E4 Unknown
KeyID7 588C 7E74EEEA 71 Unknown
KeyID8 BF56 828D34A1 68 Unknown
KeyID9 8055 6E06DAE2 D8EC 73325755 FFFFFFFF D8A1 C8 C5AEF4 007608 3C Unknown
KeyID10 86DA 35137491 D9ED CB618D0B FFFFFFFF A99C C8 941D15 007608 85 Unknown
Tips
Please use "Save Key Info" to save the original key information.
确定
Get Key Info
Save Key Info
Make Dealer Key
Enable Key
Clear DTC
Write Key Info
Load Key Info
Add Key
Disable Key
Clear Shadow

Picture 3:

Key Learn
General info
Key cutting code:
CAS remote control frequency:
315Mhz
Current key in ignition switch is:
No Key
Key position
Remote control
Immobilizer
Number
ID
Low
High
RND/FBD
CFG
PSW
Info
CRC
Type
KeyID1
KeyID2
KeyID3
KeyID4
KeyID5
KeyID6
KeyID7
KeyID8
KeyID9
KeyID10
Tips
Key make okay and locked. Please use it start the car.
If can not start engine. use "Add Key" function add the dealer key to CAS system.
确定
Get Key Info
Save Key Info
Make Dealer Key
Enable Key
Clear DTC
Write Key Info
Load Key Info
Add Key
Disable Key
Clear Shadow

Picture 4:

Warning: Make sure connect dongle to compute before run the software.

5. Troubleshooting

5.1. “Device not connected” Error

Information: Hardware not connected to PC with USB port.
Solution: Plug device to USB.

6. Warranty and Service

6.1. Limited One Year Warranty

X-Horse warrants to its customers that this product will be free from all defects in materials and workmanship for a period of one(1) year from the date of the original purchase, subject to the following terms and conditions:

- This warranty does not apply to damages caused by improper use, accident, flood, lightning, or if the product was altered or repaired by anyone other than the Manufacturer's Service Center.
- X-Horse shall not be liable for any incidental or consequential damages arising from the use, misuse, or mounting of the tool. Some states do not allow limitations on how long an implied warranty lasts, so the above limitations may not apply to you.
- All information in this manual is based on the latest information available at the time of publication and no warranty can be made for its accuracy or completeness. X-Horse reserves the right to make changes at any time without notice.

6.2. Service Procedures

If you have any questions, please contact us online.