



## 1. Which preconditions have to be met in order to use the Euro 5 functions?

- Processor with at least 1.5 GHz, recommended Dual Core with 1.6 GHz
- Main memory: At least 2 GB, depending on OEM application, more may be required.
- Hard disk: 40 GB freely available hard disk space.
- Interfaces: USB 2.0.
- Screen resolution at least VGA 800\*600, recommended 1024\*764.
- Internet access (for downloading and operation of the OEM application) DSL or cable modem.
- Operating system: MS Windows XP (SP3), Vista, 7 (32/64 bit). Further restrictions may be associated with the OEM application.
- PDF Reader.
- Web Browser Internet Explorer 5.x, 6.x, 7.x.
- Some OEM applications require Java Runtime Environment 1.6.

## 2. What steps are necessary before using the Euro 5 reprogramming?

- The KTS must be connected via USB with the PC. The KTS should be connected directly to a USB and not via a USB hub (e.g. at the docking station) to guarantee trouble-free reprogramming.
- Sufficient vehicle battery voltage must be guaranteed. Provide external power supply for the vehicle.
- Consumers in the vehicle must be switched off (e.g. air conditioner, ventilation).
- A notebook must be operated with power unit.
- The standby and idle state of the PC/laptop must be switched off prior to reprogramming.
- The OEM-specific information must be observed in all cases.

## 3. What must be observed during Euro 5 Reprogramming?

- The power supply to the KTS and the USB connection between PC/laptop and KTS must be guaranteed during reprogramming.
- Provide a stable diagnosis connector connection. Secure the diagnosis connector against falling out/down.
- Interruption of the connection during reprogramming can result in damage to the ECU.
- The manufacturer-specific information must be observed in all cases.

#### 4. What steps are necessary to complete the Euro 5 reprogramming?

- After reprogramming, please switch off the ignition, wait at least 30 seconds and restart the vehicle.
- After reprogramming, the fault-memory entries of the systems installed in the vehicle must be checked and deleted. The faults reported in the course of reprogramming are system-typical.
- Monitor and inspect initial operation of the vehicle or ECU and their detailed functions in a targeted manner following reprogramming. Carry out a test drive if necessary.
- The manufacturer-specific information must be observed in all cases.

#### 5. Where do I obtain the user IDs (accounts) to carry out the Euro reprogramming?

- Use of the Bosch KTS software does not require a user ID.
- OEMs organize the application for a user ID and password combination themselves. Bosch has no influence on this. The application procedure is described in each case under "OEM Info & Downloads".

#### 6. Do I need as user ID to use the Bosch KTS software?

Use of the Bosch KTS software does not require a user ID.

#### 7. What are the costs related to the use of the Euro 5 reprogramming?

- No costs are incurred with the use of Bosch KTS software. Costs may be incurred for consultation on the Technical Hotline of the ESI[tronic].
- Every OEM calculates a specific fee for the use of his application. Bosch has no influence on the pricing of the OEM. Information can be obtained on the respective online portal of the OEM. Links to the OEM online portals can be found under OEM Info & Downloads.

#### 8. What does J2534 or PassThru mean?

- The standard SAE J2534-1 (PassThru)  
SAE J2534-1 is used for reprogramming (flashing) ECUs in vehicle. The introduction in Europe is in the framework of the Euro 5 standard. ECUs in new vehicles with Euro 5 certification must then be reprogrammable.
- The standard SAE J2534-2 (PassThru)  
J2534-2 is an extension of J2534-1 and contains a collection of optional features.
- Bosch PassThru supports the SAE J1962 pin selection for the following protocols:
  - ISO9141 and ISO9141\_PS
  - ISO14230 and ISO14230\_PS
  - SAEJ1850 PWM
  - SAEJ1850VPW
  - CAN and CAN\_PS
  - ISO15765 and SO15765\_PS

#### 9. Technical details on the implementation of the standard in BOSCH software?

- The PassThru from Bosch supports the following API methods:  
PassThruOpen, PassThruClose, PassThruConnect, PassThruDisconnect, PassThruReadMsgs, PassThruWriteMsgs, PassThruStartPeriodicMsg, PassThruStopPeriodicMsg, PassThruStartMsgFilter, PassThruStopMsgFilter, PassThruSetProgrammingVoltage, PassThruReadVersion, PassThruGetLastError
- PassThruIoctl with the IOCTLS GET\_CONFIG, SET\_CONFIG, READ\_VBATT, FIVE\_BAUD\_INIT, FAST\_INIT, CLEAR\_TX\_BUFFER, CLEAR\_RX\_BUFFER, CLEAR\_PERIODIC\_MSGS, CLEAR\_MSG\_FILTERS, CLEAR\_FUNCT\_MSG\_LOOKUP\_TABLE, ADD\_TO\_FUNCT\_MSG\_LOOKUP\_TABLE and DELETE\_FROM\_FUNCT\_MSG\_LOOKUP\_TABLE

## **10. Can I run the ESI[tronic] parallel to KTS PassThru?**

Parallel installations of ESI[tronic] and KTS PassThru software on a PC are possible. For every version of ESI[tronic], Bosch provides a matching PassThru.

## **11. Which additional brands will be tested by Bosch?**

It is planned to test the most important European brands and to make them available to independent workshops in the framework of new Bosch PassThru versions. Current information on the tested manufacturers will be published here on a regular basis.

## **12. Will an ESI[tronic] license be required for Euro 5 PassThru?**

For the use of the Euro 5 reprogramming software an ESI[tronic] license is currently not necessary.

## **13. Which KTS models support Euro 5 PassThru?**

Bosch does not generally make a distinction between the KTS models. Differences and restrictions are specified on the KTS model respectively. With a new acquisition of a KTS for Euro 5, Bosch recommends the KTS wireless series.

## **14. How do I find out whether updates are available for a vehicle?**

The vehicle manufacturer defines which updates are released for each passenger car and system. Further details on this are available on the pages of the vehicle manufacturers.

## **15. How long does it take to update an ECU?**

The time required for reprogramming essentially depends on three factors:

1. The vehicle bus used. The CAN bus is a lot more suitable for reprogramming than the K line.
2. The performance of the PC used.
3. The volume of the data to be programmed. ECU programs with a few kilobytes up to several megabytes are possible.

## **16. How do I recognize that a programming voltage is necessary?**

The vehicle manufacturer decides whether a programming voltage is required for reprogramming. The OEM application defines whether a warning is issued to the user.

## **17. What is Euro 5?**

The Euro 5 standard governs model approval for passenger cars and light commercial vehicles and access to repair information for vehicles. This applies equally to both diesel and gasoline engines: Accordingly, diesel-driven vehicles must not emit more than 180 milligrams of nitric oxide (NOx) per kilometer. The Euro 4 standard permits 250 milligrams. The permissible emission of soot particles (PM) is also lowered: Instead of 25 milligrams per kilometer, now only five are permitted. Nitric oxide emissions are limited to 60 milligrams per kilometer for gasoline engines (formerly 80). In the future these technical model approval requirements will apply all over the EU. At the same time, a duty of manufacturers to inform workshops comes into force. Date: The Euro 5 standard will apply from September 2009 with a transition period of 6 months for all new models.

## **18. What are the benefits to me of Euro 5?**

New opportunities for independent workshops: More precisely, the Euro 5 standard requires automobile manufacturers to make technical repair information available in their online portals and to permit reprogramming of ECUs. This information will then be explicitly available not only to authorized dealers, but also to independent workshops. Result: Complete service and repair covering different brands, from oil change and troubleshooting to the configuration and reprogramming of ECUs.

## **19. Where do I register and where can I find the registrations on the registration page? What do I have to remember during registration?**

Every vehicle manufacturer provides the information for registration on his online portal. Bosch provides additional helpful information on its online portal on registration with vehicle manufacturers.

## **20. Is the KTS approved by the manufacturer and does it also work?**

Vehicle manufacturers are currently preparing release guidelines, which every manufacturer of a "PassThru Interface" can verify. Vehicle manufacturers currently decide themselves whether the results are published on their Internet portals.

## **21. What can we do with the original software? Can it only be used for reprogramming or reading / deleting the fault memory and maybe also reading actual values?**

The Euro 5 standard regulates the reprogramming of ECUs. All vehicle manufacturers decide whether they wish to provide vehicle diagnostics already for individual vehicles or functions.

Based on discussions Bosch has held with various vehicle manufacturers, we do not anticipate that all vehicle manufacturers also provide ECU reprogramming for vehicles manufactured before the Euro 5 standard comes into force.

## **22. Which problems can occur during reprogramming?**

When carrying out reprogramming, users can avoid many problems by observing the information provided by the vehicle manufacturer and Bosch. A basic distinction is made between three cases.

- a) In the event of a problem with reprogramming, the OEM software application and the ECU support repeated reprogramming. In this case, reprogramming takes longer. The ECU is changed to the new software status.
- b) In the event of a problem with reprogramming, the OEM software application or the ECU do not support repeated reprogramming. In this case, reprogramming is canceled. The ECU does not move to the new software status. The function of the ECU is retained.
- c) In the event of a problem with reprogramming, the OEM application or the ECU do not support repeated reprogramming. In this case, reprogramming takes longer. The ECU does not move to the new software status. The ECU is malfunctioning and has to be replaced.

## **23. Can I run reprogramming according to Euro 5 with my KTS?**

For ECU reprogramming, only testers that are already Euro 5-compatible can be used. These are devices in which a "PassThru Interface" according to SAE J2534" is integrated. With the PassThru standard, a communication driver has been defined which is used for ECU reprogramming.

Bosch offers several models for this purpose: The modules KTS 530 / KTS 540 / KTS 570 and the testers KTS 340 and KTS 670. Older KTS models such as KTS 520 / KTS 550 / KTS 650 are also Euro 5-compatible.

If required, the modules and testers can install the latest software version from the online portal of the vehicle manufacturer in the ECU of the vehicle. The vehicle manufacturer charges fees for downloading information and reprogramming.

## **24. Are older KTS models also Euro 5-compatible?**

Yes, the KTS 520, KTS 550 and KTS 650 models are also Euro 5-compatible.