

**20 Years**  
KTS | 1988–2008



**20 years workshop expertise:**  
Control unit diagnostics in Bosch  
quality



**BOSCH**

Invented for life

Bosch Diagnostics			
ESI[tronic] Software	Test Equipment	Service Training	Technical Hotline

# ECU diagnostics

## from Bosch

- ▶ KTS: 20 years expertise
- New!** ▶ ESI[tronic] TSB Technical Service Information
- ▶ KTS 670 – Multimedia-compatible mobile testing system
- ▶ KTS 570 – Convenient wireless solution with best-in-class measuring technology for all ECU diagnostics requirements
- ▶ KTS 540 – Wireless add-on for FSA, BEA, standard PCs or laptops
- ▶ KTS 530 – Entry level access to comprehensive ECU diagnostics
- ▶ KTS 200 – Entry level access to mobile ECU diagnostics
- New!** ▶ KTS 515 – Entry level access to onboard diagnostics (OBD)





# Professional test equipment for modern vehicle electronics

**20 Years**  
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The KTS series from Bosch: 20 years of success in workshop-compatible test equipment for ECU diagnostics

The digital revolution in the automotive industry has not bypassed the workshop. Increasingly more complicated vehicle components and their networking to systems are turning vehicles into “mobile computers”. This results in professional repairs and maintenance requiring qualified diagnosis.

## **Continued success in service: with powerful ECU diagnostics from Bosch**

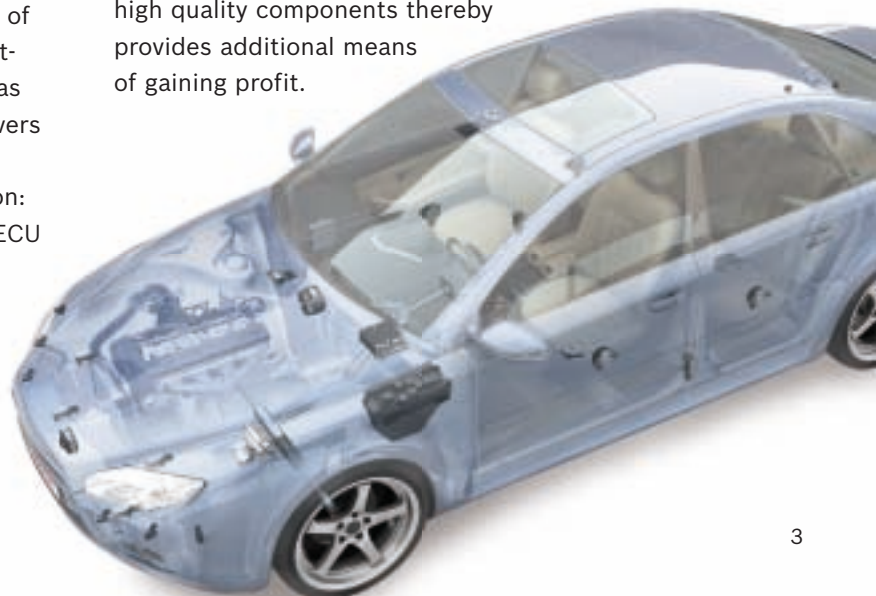
The increasing amount of electronics in vehicles makes ECU diagnostics standard practice in the workshop. This also applies to simple maintenance work on modern cars, or resetting the service interval display. With its 20 years of experience, the KTS series from Bosch is the test equipment with the highest, and continuously growing, market coverage. Regular updates of the diagnostics data in the integrated ESI[tronic] software from Bosch ensure that the workshop always has up-to-date information at its disposal. It currently covers around 80 different types of electronic system from 120 vehicle manufacturers. Reliability per subscription: Bosch provides the workshop with around 200 new ECU diagnostics programs per quarter.

## **New possibilities for turnover with modern diesel technology**

A good example is the triumphant progress of the diesel engine: high pressure systems, such as common rail or unit injectors from Bosch make vehicle diagnosis essential. The KTS series, in combination with the specially designed ESI[tronic] software, provide you with optimal opportunities to check these systems in the vehicle.

As an extension of the testing opportunities, professional test parameters, such as basic settings, volume comparison, compression test, idling speed comparison and adaptation functions are available. These enable troubleshooting and repairs to be carried out in shorter time and profitably. Not only with Bosch systems, but also for systems of other manufacturers! The renewal of high quality components thereby provides additional means of gaining profit.

The KTS series guarantees transparency in ECU diagnostics. Awards regularly underscore the high acceptance in the global market.



# ESI[tronic] software: the **basis of information** for diagnosis, technology, repair and service



The complete ESI[tronic] software on two DVD-ROMs

## **ESI[tronic] – perfectly geared for diagnostics, technology, maintenance and service**

It is only with professional diagnostics and information systems that a workshop will be able in future to offer all services for innovative vehicles. ESI[tronic] is perfectly tuned to the Bosch test equipment, which permits introduction to ECU diagnostics if a workshop PC is available.

The large number of software modules can be adapted to the specific workshop requirements. They are activated individually depending on requirements. Updates for the subscription data mean that the information is always at the latest stage of development.

### **ESI[tronic]-A: access to the full range of Bosch automotive equipment**

Additional benefit through comparison of Bosch codes with order numbers of vehicle manufacturers.

### **ESI[tronic]-C: modular system for ECU diagnostics and SIS troubleshooting instructions**

Professional software for ECU diagnostics via CAS[plus] linked with troubleshooting instructions (SIS) for repairing engine management systems (gasoline and diesel), car brake, safety and convenience systems.



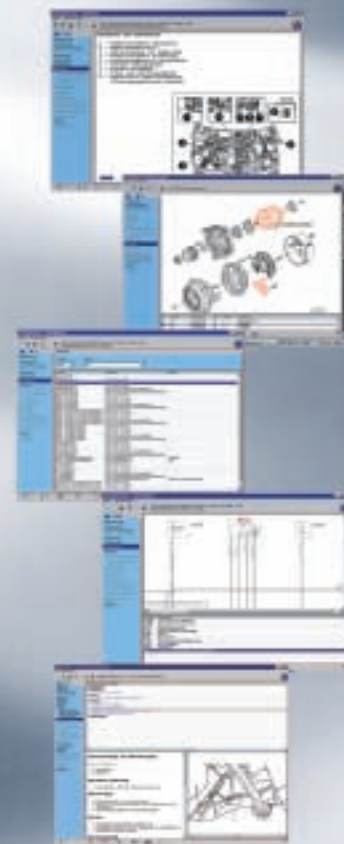
#### **SD (ECU diagnostics software)**

Links Bosch test equipment or the workshop PC with information from the control unit



#### **SIS (Service Information System)**

SIS troubleshooting instructions can be used on any standard PC



ESI[tronic] software with guided troubleshooting for fast and simple diagnostics



### **ESI[tronic]-M: mechanical work procedures and functions throughout the vehicle**

Technical data for gasoline and diesel vehicles, e.g. wheel settings, maintenance schedules, data and information on changing toothed belts.



### **ESI[tronic]-P: circuit diagrams for all important areas of comfort and convenience electronics**

Most comprehensive selection of vehicle convenience circuit diagrams, covering all manufacturers, under a single user interface.



### **New! ESI[tronic] TSB: Technical Service Information**

As an ideal supplement to SIS instructions, TSB opens up rapid access to well-known vehicle faults and offers assignment according to symptom and system group (ABS, airbag, engine, etc.). This is combined with a clear description of causes, supplemented by tested repair tips with visual support.



# Simple, timesaving and efficient Vehicle diagnostics with CAS[plus]



CAS[plus] creates connection for practical diagnostics

CAS[plus] (Computer Aided Service) links ECU diagnostics and SIS faultfinding instructions to achieve even more effective troubleshooting. The values that are decisive for diagnostics and repair appear immediately on a screen.

## **CAS[plus] simply speeds up diagnosis**

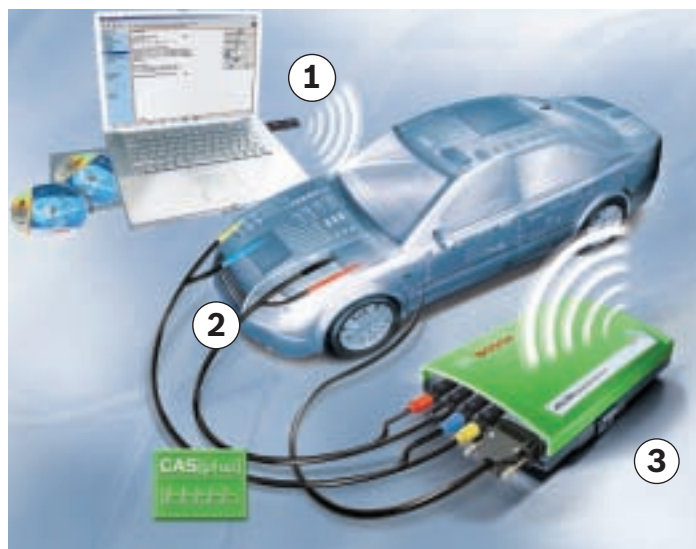
The actual values from the ECU diagnostics are automatically compared with the target values in the SIS fault finding instructions, color-coded and logged in line with customer needs. Without changing over, all additional information for fault rectification and the measured URI values of the multimeter function are immediately available.

## **All ESI[tronic] information on DVD**

This software on DVD is activated individually depending on the workshop requirements – e.g. the ESI[tronic]-C for modern vehicle repair including ECU diagnostics. The ESI[tronic] subscription provides regular updates to insure your information is always up to date.

## **KTS 670, KTS 570/540 wireless, KTS 530 and KTS 200: diagnostic professionals – Powered by ESI[tronic]**

Bosch's new KTS diagnosis equipment, together with the ESI[tronic] software presents the perfect combination of hardware and software for efficient error analysis on the vehicle and professional repairs.



## **Simple connection and operation at the vehicle**

Connection of the KTS tester with ESI[tronic] software is very easy and quick.

### **PC/laptop connectivity**

- ▶ Radio connection with KTS 570/540 wireless
- ▶ USB connection with KTS 200, KTS 530, KTS 540, KTS 570

### **Connection to the diagnosis socket**

OBd diagnostics cable (directly or via new adapter concept "Easy Connect" or via the Uni 4 adapter and the existing adapter concept)

### **Multimeter and oscilloscope connection via measuring cable**

One KTS ECU diagnostics tester is sufficient and you can already begin profiting on your PC from comprehensive diagnosis opportunities and information

- ① Bluetooth USB adapter ② Measurement cables, 2-core  
③ Exchange adapter integrated in housing (KTS 570/540/530)

# KTS 670 for efficient diagnosis and complex measurements

**20 Years**

KTS | 1988–2008

## KTS 670: the new convenience system for complete control unit diagnostics

- ▶ Fast and efficient due to improved multimeter and new 2-channel oscilloscope measuring technology
- ▶ Better signal evaluation due to significantly higher sampling rate, accelerated frame frequency and more detailed resolution of the x-deflection
- ▶ Simplified troubleshooting due to higher input resistance
- ▶ The most powerful module (KTS 570) from the Bosch range, integrated in the new housing
- ▶ Simple adaptation to future protocol changes due to new internal OBD-exchange adapter and new adapter connection concept

State-of-the-art technology in the KTS 670 makes professional diagnosis particularly simple.



# KTS 670: the highlight out of 20 years innovation in ECU diagnostics



Mobile diagnostics with the new KTS 670

More and more workshops are using the KTS series from Bosch to make diagnostics of complex vehicle systems efficient. A decision that pays off and provides a head start in expertise and dependable service business. 20 years of use in workshops all over the world prove that the best test equipment comes from the developers of modern vehicle systems. Experience and innovation in practice are essential elements of the KTS series' leading position. This is also demonstrated by the top model, the mobile and multimedia-compatible diagnostics tester KTS 670 from Bosch.

## Maximum functionality for practical diagnostics

- ▶ The KTS 670 masters all current diagnosis protocols:
  - ISO systems of European vehicles
  - SAE systems for American and Japanese vehicles
  - OBD-CAN protocols for testing state-of-the-art CAN bus systems in new vehicles
  - High speed to middle speed to low speed and single-wire CAN
- ▶ Software-controlled, integrated OBD-exchange adapter (box 01) means that even CAN protocols outside the OBD standard can be diagnosed
- ▶ The system automatically detects the control unit, reads out actual values, fault memory and control unit specific data

## Network and multimedia-capable

- ▶ The KTS 670 is network-capable (LAN integrated and WLAN can be upgraded via commercial-type PC card).
- ▶ AWN capability
- ▶ Built-in loudspeaker and headset connection



KTS 670: top model for control unit diagnostics

- ▶ State-of-the-art connectivity options are provided (e.g. DVD drive, video output, PS/2 keyboard)

## Full range of equipment for complicated measurements

- ▶ The KTS 670 comes with a convenient 2-channel oscilloscope. Advantage: the mechanic can view and evaluate, for example, both lambda sensors on one screen
- ▶ The tester comes with a 2-channel multimeter for performing voltage, resistance and current measurements
- ▶ Diagnostics oscilloscope: in ECU diagnostics, parallel to each test step, the signals of the diagnostics cables such as K and L line, CAN and J 1850 can be tested using the diagnostics oscilloscope
- ▶ Range of functions same as KTS 570

## Workshop-compatible equipment for everyday use

- ▶ Effective protection against impact and water splashes
- ▶ High mobility by means of practical carrying handle and power supply from vehicle battery or rechargeable batteries during road testing

## Greater mobility in the workshop and on the vehicle

- ▶ Together with ESI[tronic], the KTS 670 is the professional diagnostic system for vehicles in your workshop and during road tests
- ▶ Screen with ideal resolution for a brilliant display, even where light conditions are poor (high brightness and large angle of view, and a touchscreen)
- ▶ Switch on and off and call up a virtual keyboard via a touch-sensitive key

## Order number

KTS 670 (including DVD drive)

0 684 400 670

# KTS 670: modular concept, simply conceived



KTS 670: core element of a professional diagnostic system

## Optimized connection

The OBD-exchange adapter (box 01) is now integrated on the KTS 670. It connects the communications line to the relevant pin of the OBD diagnostics connector. The range of functions corresponds to that of the KTS 570.

## Modular concept

- ▶ The KTS 670 is portable thanks to a lithium ionic rechargeable battery, e.g. for use during road tests
- ▶ Keeping the KTS 670 in the charging station insures the rechargeable battery is constantly charged
- ▶ The KTS 670 is ideal for use in the workshop when mounted on the trolley
- ▶ Can be upgraded to the comprehensive vehicle system analysis component test FSA 750

## Convincing advantages for the workshop

- ▶ New adapter concept "Easy Connect" is supported by the KTS 670. (More information, see Page 11.)
- ▶ Automatic recognition of the control unit and reading of error messages
- ▶ All newer passenger car and commercial vehicle models can be tested – even with CAN protocols outside of the OBD CAN standard
- ▶ Guided test and repair instructions from the workshop software ESI[tronic]



# KTS 670: top model with full set of equipment and features



## Reliable application throughout

- ▶ Intelligent and with a secure future due to OBD-exchange adapter
- ▶ Software-controlled by ESI[tronic]
- ▶ Simple connection to the vehicle
- ▶ Clear communication via multiplexer and cable adapter recognition: K and L line, SAE and CAN can be connected to all terminals on the OBD connector
- ▶ New: OBD-exchange adapter integrated in the unit.
- ▶ Simulation mode can be adjusted individually
- ▶ Continuity tester for locating faults
- ▶ Diode measurement for testing in components
- ▶ Voltage measurement with enhanced measurement functions
- ▶ Current measurement with additional adaptation option of FSA current clamps
- ▶ Universal application for passenger cars and commercial vehicles by means of universal OBD connector, for 14 V and 28 V vehicle electrical systems

## Order number

Trolley	1 688 003 198
Trolley with charging tray	1 688 003 192
Upgrade kit (for KTS 670 to FSA 750)	1 687 001 593

KTS 670:  
equipped with  
connections for  
a secure future

Technical Data KTS 670	
PC board	Operating system Windows XP, 1 GB main memory, 80 GB hard drive capacity
Display	12.1" TFT color display with touchscreen, industrial standard, resulting in outstanding brilliance and wide angle view; resolution SVGA 800 x 600 dpi
Equipment	Multimedia, built-in speaker and headset connection, installed LAN network card (10/100 Mbit), PCMCIA standard connection enables WLAN connection
Status indicator	Via 4 LEDs: On/Off, mains operation, battery charge status, hard-drive access
Operation	Touchscreen, 2 touch-sensitive keys; On/Off button, special menu key (backlighting control, virtual keyboard, etc)
Lithium ionic battery	Service life depending upon charge status and application approx. 1 to 2 hours
Housing	Stable plastic housing, integrated impact protection
Operating temperature	0 to 40 °C
Weight	approx. 4 kg
Dimension	400 x 125 x 300 mm (W x H x D)
Diagnostics protocols	ISO 9141-2, K/L lines, flashing code SAE-J1850 VPW (GM, etc.) } corresponds to SAE-J1850 PWM (Ford) } ISO 11 519-4 CAN ISO 11898 ISO 15765-4 (OBD) Highspeed, Middlespeed, Lowspeed and Singlewire CAN
2-Kanal-Multimeter	Measured value accuracy 1% from mean value Zeroing option can be selected in the software, measurement range 100 Ω to 1 MΩ, Voltage measurement ranges apply to direct current and alternating current, measurement range +/-200 mV to +/-200 V (resolution 0.1 mV to 100 mV) Current monitoring via optional external converters (current clamp, shunt), use of FSA current clamp possible
2-channel oscilloscope	With 1-channel operation: 10 mega-samples/sec, With 2-channel operation: 2 x 5 mega-samples/sec
Connections for	OBD diagnostics cable, adapter concept "Easy Connect", Uni 4 adapter and existing adapter concept, Multimeter: channel 1: socket yellow (+), blue (-), channel 2: red (+) and black (ground), 2 x USB 2.0, LAN connection, port jacks for contacts for stationary charger, PS/2 for pointing device or keyboard, VGA for external monitor, PCMCIA 2 x type 2 or 1 x type 3, micro-in, line-out, headset



# KTS 570/540/530:

## safe, convenient and quick



KTS 570 wireless: top-of-the-range model of the new series and workshop all-rounder

Rapid troubleshooting with reliable results is and will continue to be required for all vehicles brought to the workshop today and in the future. With KTS technology, you are well equipped to meet the demands placed on workshops today by modern vehicle technology. The performance, ergonomics and ease of use of the new KTS series have been further improved especially with complex electronic vehicle systems in mind.

### The easier way to test complex electronics

- ▶ Intelligent and with a secure future due to internal OBD-exchange adapter
- ▶ Software-controlled by ESI[tronic]
- ▶ Simple connection of the KTS series to vehicles
- ▶ Clear communication via multiplexer and future cable adapter recognition: K and L line, SAE and CAN can be connected to all possible terminals on the OBD connector



KTS 540 wireless: mobile workshop deployment for fast workflows

- ▶ Intelligent adapter cable guarantees for the future:
  - reliable control of the multiplexer
  - automatic ECU search function
- ▶ OBD-exchange adapter integrated in device, for simple replacement later with an updated version
- ▶ Simple fastening and releasing by means of a module mounting bracket
- ▶ Visual and acoustic status identification/monitoring of the wireless connection
- ▶ Simulation mode can be adjusted individually via DDC
- ▶ Resistance measurement with enhanced measurement ranges
- ▶ Continuity tester for locating faults
- ▶ Diode measurement for testing in components
- ▶ Voltage measurement with enhanced measurement functions
- ▶ Current measurement with additional adaptation option of FSA current clamps
- ▶ Universal application for passenger cars and commercial vehicles by means of universal OBD connector, for 14 V and 28 V vehicle electrical systems



The KTS series from Bosch: KTS 570/540/530



Upgradeable thanks to an integrated exchange adapter



Wireless technology: flexible at the



# KTS 570/540 wireless: diagnostics professionals for the latest in vehicle technology



Data exchange by radio: from KTS 570/540 wireless to PC

## KTS 570/540 wireless: convenient and mobile thanks to wireless Bluetooth data transfer

- ▶ Bluetooth Standard Class 1 with a range of up to 100 m
- ▶ Bluetooth USB adapter from Bosch included in scope of delivery for convenient and simple initial installation
- ▶ Control and activation of the installation by means of the integral DDC (Diagnostics Device Configuration) software
- ▶ Automatic KTS module search
- ▶ Wireless connection test by the integrated transducer
- ▶ Test program for testing the wireless connection

## Order numbers

KTS 570 wireless	0 684 400 570
KTS 540 wireless	0 684 400 540

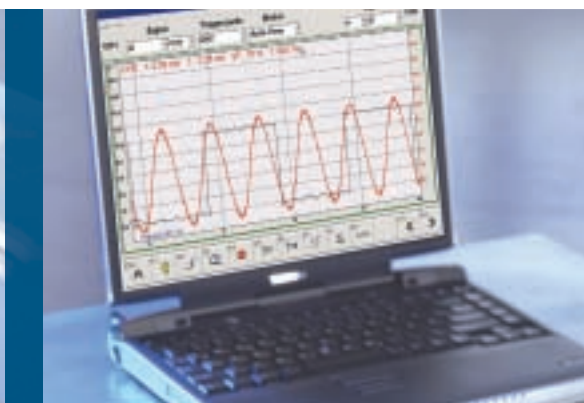
Technical data KTS 570/540/530	
Equipment	KTS 570: 2-channel multimeter and 2-channel oscilloscope KTS 540, 530: 1-channel multimeter
Resistance measurement	Measured value accuracy 1 % from mean value Zeroing option can be selected in the software Measurement range 100 $\Omega$ to 1 M $\Omega$
Voltage measurement	Voltage measurement ranges apply to direct and alternating current Measurement range $\pm 200$ mV to $\pm 200$ V (resolution 0.1 mV to 100 mV)
Current measurement	Current monitoring via optional external converters (current clamp, shunt), Use of the FSA current clamp is possible
Dimension	170 x 35 x 120 mm (W x H x D)

## Simplified adapter concept "Easy Connect"

For reliable recognition of manufacturer-specific diagnostic connections, Bosch now introduces the new simplified adapter concept "Easy Connect". Now, all that needs to be done for reliable control unit diagnostics is to join the manufacturer-specific adapter cable and the OBD diagnostics cable to make a direct connection.

## Info:

More information is available on page 19 (overview of adapter)



vehicle

Oscilloscope measurement parallel to diagnosis

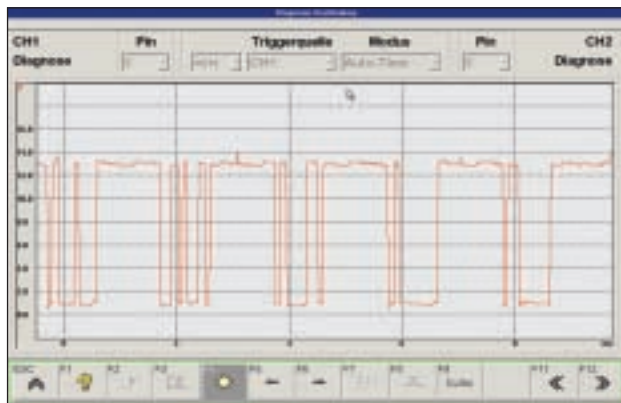
New! "Easy Connect" – the fast and simple adapter system

# Curves say more than diagnostics signals

## New diagnostics oscilloscope in the KTS 570 wireless

Within ECU diagnosis, parallel to each test step, the signals of the diagnostics cables – such as K and L line, SAE and CAN – can be diagnosed via the 2-channel diagnostics oscilloscope.

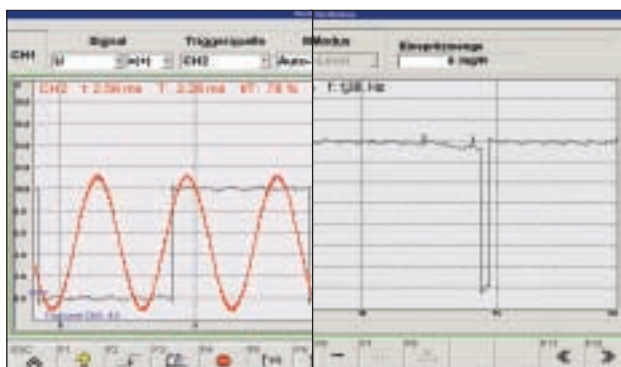
- ▶ Analysis of the signals on the diagnostics cables
- ▶ Adaptation via the OBD diagnostics cable
- ▶ In this application, the two channels are identical and potential-bound



Better error evaluation with the diagnostics oscilloscope

## Improved 2-channel measurement oscilloscope

As long as communication with the ECU is functioning properly, direct analysis of the components with the oscilloscope quickly insures for clarity. Adjustment of the trigger period is improved.



2-channel oscilloscope for optimum troubleshooting

Component signal and actual value at a glance

Oscilloscope specifications	
Input resistance	1 MΩ
Channel 1	potential-free (from ESI[tronic] 2008/2)
Channel 2	potential-based
Sample rate	10 mega-samples with 1-channel display, 5 mega-samples with 2-channel display
Trigger	Different sources
Memory	50 signal curves with 2 channels

# All functions fully in view



Status indications by means of LEDs on the KTS housing

## Standby indicators on the KTS 570/540 and 530

**Know at a glance precisely what's going on. To this end, all units of the new KTS series are equipped with two multicolor LEDs**

- ▶ LED A signals communication with the control unit
- ▶ LED B indicates the standby status
- ▶ Clear status information: These LEDs are also used to indicate various errors by flashing or static light (red)
- ▶ During installation and operation, the status of the wireless connection is constantly indicated in the task bar on the screen
- ▶ If the wireless connection is lost, an acoustic signal sounds



Communication No communication Connection OK ... not OK

## Indicator for Bluetooth connection to PC

The connection status is constantly indicated by the installation and field strength indicator.

## KTS 570/540 wireless: mobile and flexible with Bluetooth

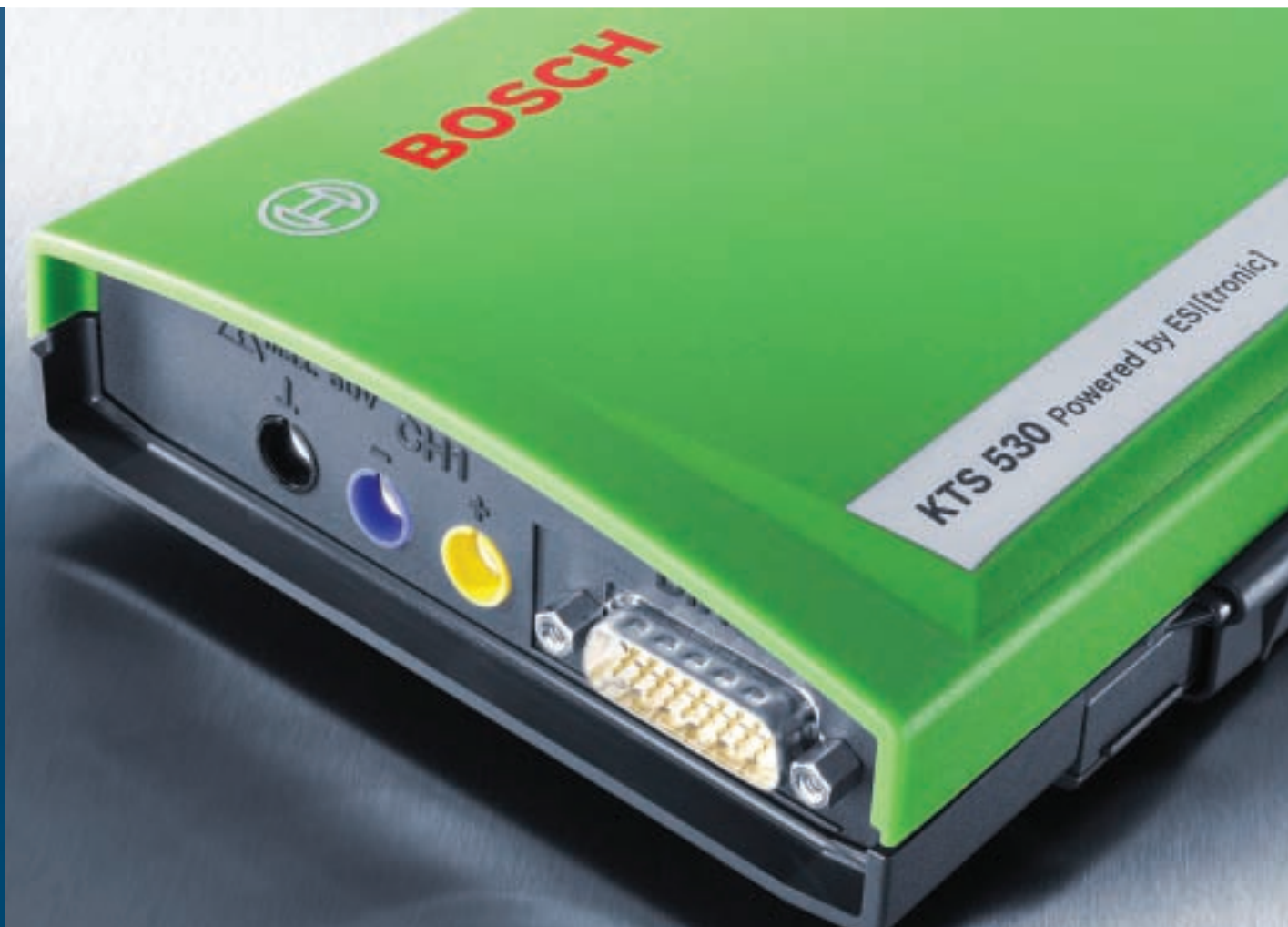
Super practical: Bluetooth USB adapter with its own software for easy initial installation. Then simply select the wireless connection and the system is ready to run. Reliable and fast log-on is guaranteed, even if there are several testers being used in the workshop.



Bluetooth USB adapter



# KTS 530: entry level access to ECU diagnostics



KTS 530: even the entry level variant has full asanetwork capability

## KTS 570/540/530

- ▶ Operating system supported: MS Windows XP, Vista Home Premium, Vista Business
- ▶ Wireless Bluetooth transmissions with KTS 570 and KTS 540
- ▶ The USB interface means that the KTS 570, KTS 540 and KTS 530 can be connected to all common laptops / PCs
- ▶ Quickly and easily adaptable
- ▶ Case and connector cables suited to a workshop environment
- ▶ Integrated interchangeable exchange adapter
- ▶ 1-channel multimeter in KTS 540 and KTS 530
- ▶ 2-channel multimeter in KTS 570
- ▶ Mounting bracket included

## KTS 530: Features of a bigger unit

The features of the KTS 530 are the same as those of the KTS 540; the only difference is the lack of wireless function. It has been designed for use in workshops which do not require this function.

## Order number

KTS 530

0 684 400 530

# From **module** to diagnostics center



The KTS series can be upgraded in

modules to create a diagnostics center.

## Testing and repairing all makes with Vehicle System Testing from Bosch

Existing test equipment can be put to good, profitable use if one can upgrade it on a modular and custom basis to suit the needs of the workshop. Bosch test equipment offers this possibility through the ability to expand the KTS series to enable comprehensive vehicle system testing. A great many diagnosis cases cannot be solved with ECU diagnostics alone. Vehicle component testing is often indispensable when testing complex equipment fitted in modern vehicles. Bosch system testers (e.g. FSA 720/740) permit the exact localization of faults and testing of vehicle components even when they are installed in the vehicle.

## Modular expansion in the Bosch system: the KTS series is totally combinable

- ▶ With the universal measurement module FSA 720 as an inexpensive entry level solution
- ▶ With the complete system, the FSA 740, for comprehensive component testing, ECU diagnostics and convenient troubleshooting with ESI[tronic]
- ▶ With the Bosch Emission Analysis system, BEA 850, for statutory exhaust-gas testing and diagnosis of gasoline and diesel vehicles
- ▶ KTS 540, KTS 570, KTS 670 are Awn-compatible



### asanetwork

This device uses the professional network standard for workshops, which facilitates and accelerates repair processes through networking of incoming order and workshop



# KTS 200: as if made for the tough workshop environment



The workshop pro KTS 200: Compact, fast and tough

## Easier to check, target achieved faster

ECU diagnostics directly at the vehicle becomes easier than ever before: at a weight of less than one kilogram, the compact KTS 200 combines extremely high performance with almost completely intuitive handling. Operation requires only one hand, which is a particular advantage in many work situations.

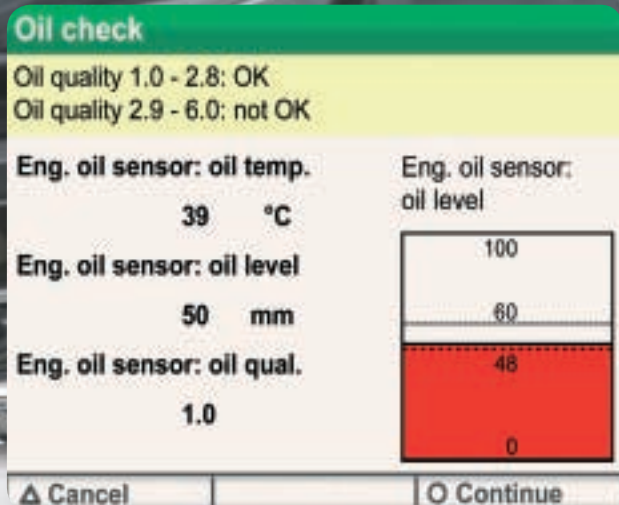
For reliable, fast and comprehensive ECU diagnostics of all electronic systems in modern vehicles, the workshop has all necessary interfaces and data at its disposal. The KTS 200 offers a simple and inexpensive introduction to the ECU diagnostics from Bosch.

## KTS 200 from Bosch: the right testing device for every workshop

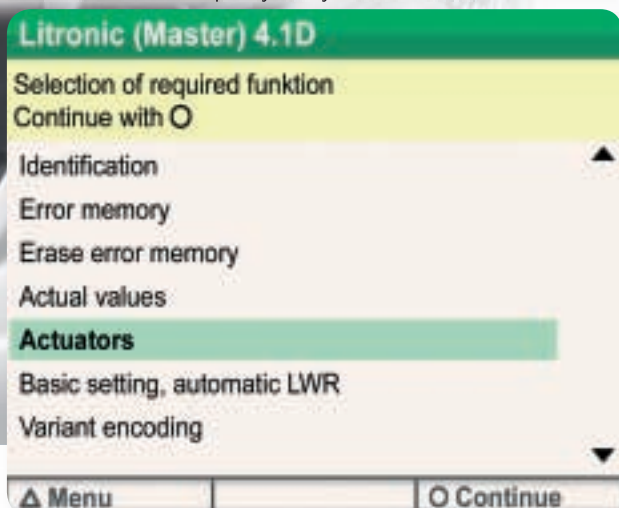
Today's daily workshop operation is impossible without an efficient and easily handled testing device. The new KTS 200 is light, robust and compact and, at the same time, provides complete ECU diagnostics. Its strength lies in fast and reliable testing of modern vehicle technology.

**Particularly practical:** the KTS 200 can be connected directly at the vehicle. This facilitates and accelerates the vehicle receiving inspection. This type of mobility alone makes it an ideal secondary device for every workshop. For workshops with tight work processes, in particular, such as immediate service, oil service, light service, tire services, etc., it proves to be perfect test equipment.

# Comprehensive software packages for individual workshop requirements



Oil check: Level and quality always under control



Precise adjustment of the automatic headlamp leveling control



Without ECU diagnostics, the modern workshop would come to a standstill.

## Perfectly tailored to your Service profile

For systematic Service and cost-effective repair, whether in tire service or mechanical operation, every workshop needs important information from the vehicle's control units.

Bosch knows automotive technology and is aware of the continuously growing proportion of electronic components. To enhance workshop skills and efficiency, KTS 200 is provided with software packages which comprehensively cover the various workshop focal points:

## Professional package

The ideal package for allrounders with the complete scope and range of ECU diagnostics.

## Service package

Including the daily activities relevant to the workshop:

- ▶ Service interval reset
- ▶ Oil change
- ▶ Tire change
- ▶ Headlight service
- ▶ Air conditioning service
- ▶ Brake service
- ▶ Initializing sensors after chassis examination
- ▶ Installation of accessories (trailer hitch, radio, navigation systems, luggage racks, etc.)



# Powered by ESI[tronic]

## Software for the KTS 200



ESI[tronic] software: specially developed for the KTS 200

### Powered by ESI[tronic] software

The KTS 200 is supplied with the preinstalled, specially further developed ESI[tronic] software. This makes operation of the KTS 200 particularly simple and fast. Key functions are displayed on the screen. For each of the Service package, all essential information about the control units and special functions, e.g. engine/brake systems, are available.

### Order number

KTS 200

0 684 400 210

Technical Data KTS 200	
Computer	Embedded System
Display	3.5" color LCD display 1/4 VGA with 320 x 240 pixels
Operation	Keyboard with 5 selection keys, duplicated for left/right operation, 2 function keys
Housing	Plastic housing with rubber coating
Operating temperature	Functional range 5° – 40 °C
Weight	600 g
Supported diagnostics	ISO 9141-2, K/L lines, flashing code protocols SAE-J1850 VPW (GM, ...) SAE-J1850 PWM (Ford) CAN ISO 11898 ISO 15765-4 (OBD) Highspeed, Middlespeed, Lowspeed and Singlewire CAN
Connections	OBD diagnostics cable, USB, supply voltage
Dimensions	220 x 40 x 140 mm (W x H x D)
Voltage supply	12–24 V via plug, OBD socket or 100–240 V power component
Languages	all 23 ESI[tronic] languages

# Scope of delivery

## of the KTS series



Scope of delivery KTS 670

### **KTS 670: the complete diagnostics device for the workshop and on test drives**

- ▶ Mobile test system
- ▶ Optimized interplay of hardware and software
- ▶ Short access times for rapid diagnoses
- ▶ Brilliant, bright display with large read-off angle
- ▶ User friendly in every way
- ▶ Improved measuring technology of the KTS 570 integrated
- ▶ Optimized measuring technology for complex troubleshooting
- ▶ New adapter concept "Easy Connect", can be connected directly
- ▶ Can be upgraded to FSA 750
- ▶ ESI[tronic] info type A, C and M preinstalled



Accessory kit included with the KTS 570

### **KTS 570: the convenient wireless solution with top measuring technology for even more diagnosis**

The control unit diagnostics device with 2-channel measuring technology for multimeter / oscilloscope

- ▶ Complete ECU diagnostics
- ▶ 2-channel oscilloscopes
- ▶ 2-channel multimeter
- ▶ Diagnostics oscilloscope
- ▶ Other ESI[tronic] info types possible
- ▶ New adapter concept "Easy Connect", can be connected directly



Accessory kit included with the KTS 200

### **KTS 200: entry level version for comprehensive ECU diagnostics**

The proven entry into ECU diagnostics with new menu guidance for simple and rapid diagnoses.

- ▶ Complete ECU diagnostics
- ▶ New adapter concept "Easy Connect", can be connected directly



# Adapter concept

## “Easy Connect”



BMW 20-pin  
1 684 463 631



Daewoo/GM 12-pin  
1 684 463 632



Fiat Group 3-pin  
1 684 463 613



Honda 3-pin and 5-pin  
1 684 463 634



Hyundai/Mitsubishi 12-pin  
1 684 463 638



Mazda 25-pin  
1 684 463 637



KIA 20-pin  
1 684 463 636



Nissan 14-pin  
1 684 463 639



Peugeot 30-pin (PSA 30)  
1 684 465 583



Renault comm. veh. 12-pin  
1 684 465 581



Renault pass. car 12-pin  
1 684 465 582



Toyota without Pin 1/9  
1 684 463 686



Toyota 17-pin  
1 684 463 642



Toyota 23-pin  
1 684 463 643



VW/Audi  
1 684 463 611

### Convincing advantages for the workshop

- ▶ Only one direct connection cable
- ▶ Automatic recognition of the vehicle-specific connections
- ▶ Simple, fast and non-interchangeable adaptation on vehicle
- ▶ Check of connection and matching connection cable
- ▶ Fewer plug connections
- ▶ Simplified and intelligent multiplexer control
- ▶ Software-controlled communication pin selection

# KTS 200/530/540/570/670

## Data and facts

Equipment supplied	KTS 200	KTS 530	KTS 540	KTS 570	KTS 670
Power supply (15 V/1 A)	✓	✓	✓	✓	...
Power supply (15 V/4 A)	...	...	...	...	✓
Power cable	✓	✓	✓	✓	✓
OBD-exchange adapter, interchangeable	...	✓	✓	✓	✓
OBD diagnostics cable 1.5 m	✓	...	✓	✓	...
OBD diagnostics cable 3 m	...	✓	...	...	✓
Uni 4 adapter	...	✓	✓	✓	✓
Measurement cable, 2-wire (red, black) 3 m	...	...	...	✓	✓
Measurement cable, 2-wire (blue, yellow) 3 m	...	...	...	✓	✓
Measurement cable, blue	...	✓	✓	...	...
Measurement cable, yellow	...	✓	✓	...	...
Ground line, black	...	✓	✓	✓	✓
Test probe, red	...	✓	✓	2x	2x
Connection terminal, black	...	✓	✓	✓	✓
DVD drive	...	...	...	...	✓
USB connecting cable 1m	✓	...	...	...	✓
USB connecting cable 3 m	...	✓	✓	✓	...
Bluetooth USB adapter	...	...	✓	✓	...
Touchpen	...	...	...	...	✓
Carrying case	✓	✓	✓	✓	✓
Mounting bracket KTS 540/570	...	✓	✓	✓	...

Special accessories	Order number	KTS 200	KTS 530/540/570	KTS 670
Tire valve activator	1 687 200 663	✓	✓	✓
Monitor / VGA connecting cable	1 684 465 385	...	...	✓
*) Printer PDR 371	1 687 023 435	✓	...	✓
USB connecting cable 1.0 m	1 684 465 491	✓	✓	✓
USB connecting cable 2.0 m (necessary in conjunction with trolley)	1 684 465 507	✓	✓	✓
USB connecting cable 5 m	1 684 465 563	✓	✓	✓
Touchpen (3 units)	1 683 083 004	...	...	✓
Wireless LAN PCMCIA card	commercial-type	...	...	✓
DVD drive with USB connection	1 687 022 932	...	...	✓
Charging tray	1 687 022 898	...	...	✓
Trolley with charging tray	1 688 003 192	...	...	✓
Modem PCMCIA board,	commercial-type	...	...	✓
Upgrade kit FSA 750 (requirement KTS 670 in the trolley)	1 687 001 593	✓	✓	...
**) USB Bluetooth extension 1 m for Bluetooth PC stick	1 684 465 564	...	✓	...
**) USB Bluetooth extension 3 m for Bluetooth PC stick	1 684 465 565	...	✓	...
FSA current clamp 30 A	1 687 224 969	...	✓	✓
FSA current clamp 1000 A	1 687 224 968	...	✓	✓
Adapter for FSA current clamp of FSA 450 (adapter 1 684 480 125 also required)	1 684 463 522	...	✓	✓
Test shunt 0 to 600 mA	1 684 503 103	...	✓	✓
AC/DC trigger clamp 100/600 A with banana connector	1 687 224 864	...	✓	✓
Mounting bracket KTS 200	1 681 320 082	✓	...	...

\*) Order USB connecting cable, \*\*) Not used on KTS 530



# KTS 200/530/540/570/670

## Data and facts

Special accessories	Order number	KTS 200	KTS 530/540/570	KTS 670
<b>Adapter cables (existing adapter concept)</b>				
*) Adapter cable Daewoo	1 684 463 489	✓	✓	✓
*)/**) Adapter cable Ford	1 684 463 440	✓	✓	✓
*) Adapter cable Ford EEC4	1 684 463 496	✓	✓	✓
*) Adapter cable Ford (adaptation PSG-5 pump unit via CAN)	1 684 463 652	✓	✓	✓
*) Adapter cable MAN 37-pin (EDC, MS 5)	1 684 463 498	✓	✓	✓
*) Adapter cable MAN 12-pin (EDC, MS 6.1, MS 6.4, CR, EDC7C)	1 684 463 499	✓	✓	✓
*) Adapter cable Mercedes-Benz	1 684 447 032	✓	✓	✓
*) Adapter cable Mercedes-Benz (Sprinter, Atego)	1 684 463 494	✓	✓	✓
*) Adapter cable Opel Multec	1 684 463 410	✓	✓	✓
*) Adapter cable Opel Vauxhall	1 684 463 464	✓	✓	✓
*) Adapter cable PSA (+/- clip)	1 684 460 182	✓	✓	✓
*) Adapter cable PSA 3-pin for e.g. ABS (requirement is 1 684 463 399)	1 684 463 400	✓	✓	✓
*) Adapter cable Renault	1 684 463 468	✓	✓	✓
*) Adapter cable Rover	1 684 463 439	✓	✓	✓
*) Adapter cable Scania 16-pin (R 124, R144)	1 684 463 497	✓	✓	✓
*) Adapter cable for power supply connection to cigarette lighter	1 684 460 202	✓	✓	✓
*) Adapter cable for engine management systems (10-branch)	1 684 463 399	✓	✓	✓
**) Power supply banana connector and power supply socket	1 684 460 231	✓	✓	✓
Uni 4 adapter	1 684 463 539	✓	...	...
OBD diagnostics cable 1.5 m	1 684 465 555	✓	✓	✓
OBD diagnostics cable 3 m	1 684 465 557	✓	✓	✓
OBD diagnostics cable 5 m	1 684 465 567	✓	✓	✓
OBD adapter box with OBD connector	1 684 462 514	✓	✓	✓
Level adaptation 12 V/5 V	1 684 463 495	✓	✓	...
*) Test adapter Mercedes-Benz 38-pin	1 684 485 382	✓	✓	✓
Test cable set	1 687 011 208	✓	✓	✓
KTS cable set consists of: Universal connector set and adapter cables for MB, Ford EEC4, Opel Vauxhall, Opel Multec, BMW and VW	1 687 001 855	...	✓	✓
KTS cable set consists of: Uni 4 adapter, universal connector set and adapter cables for MB, Ford EEC4, Opel Vauxhall, Opel Multec, BMW and VW	1 687 001 875	✓	...	...
KTS cable set consists of: Adapter lines for Fiat, MB, Peugeot, PSA 10-pin and 3-pin Renault	1 687 011 361	✓*)	✓	✓
KTS cable set consists of: Adapter cables for Fiat, Ford, MB, Opel Multec, PSA 10-pin and 3-pin Renault	1 687 011 362	✓*)	✓	✓

\*) Only in conjunction with Uni 4 adapter 1 684 463 539 (4-fold KTS 200, 530, 540, 570, 670), \*\*) Only in conjunction with 1 684 460 182 or 1 684 460 202



### Connection to the vehicle depends on the diagnostics socket

Connection possibilities are the OBD diagnostics cable or OBD diagnostics cable plus “Easy Connect” or the OBD diagnostics cable plus Uni 4 adapter with vehicle-specific cable.



### Suitable for the asanetwork

Workshops that use the asanetwork to network workshop information and commercial data can access diagnostics data directly with all units of the KTS series.

# OBD: european On Board Diagnostics



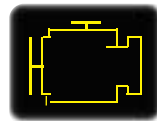
With OBD (On Board Diagnostics), a Europe-wide standard for emission values and their correct testing was introduced.

## **Bosch test equipment makes the perfect diagnosis possible**

- ▶ Standardized diagnosis interface
- ▶ Standardized diagnosis protocol
- ▶ Standardized diagnosis statements
- ▶ Uniform diagnostics connector
- ▶ Since 01.01.2001, new vehicles in Europe fitted with a gasoline engine and since autumn 2004 those with a diesel engine can only be registered if they are equipped with the European On Board Diagnostics system

## **Aims of OBD**

- ▶ Continuous monitoring of components relevant to emissions on all vehicles
- ▶ Immediate detection and display of important emissions increases over the entire service life of each and every vehicle
- ▶ Permanently low exhaust emissions
- ▶ Protection of vehicle components at risk (e.g. catalytic converter)
- ▶ Storage of information regarding faults that have occurred
- ▶ Transmission of stored fault information to the KTS 515/200/530/540/570/670



## **Malfunction indicator (MI)**

The malfunction indicator is a yellow indicator lamp with the symbol of an engine.

In accordance with the OBD guideline

(as of EURO 3), the indicator lamp lights up if:

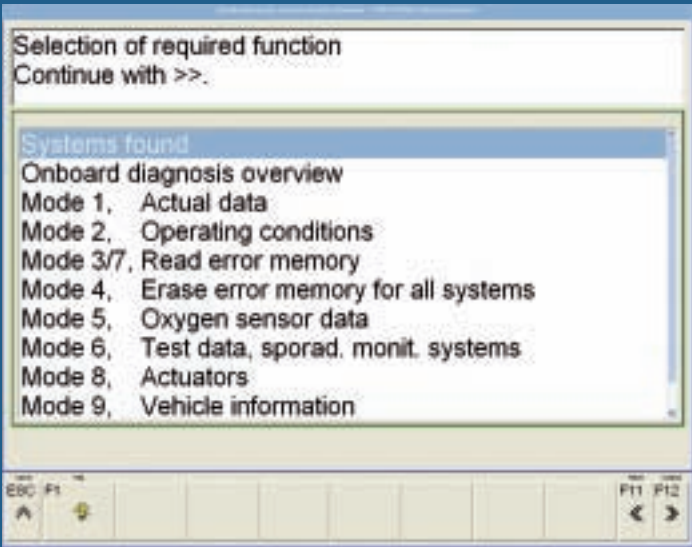
- ▶ A fault occurs that leads to cylinder shutoff to protect the catalytic converter (misfire detection). In this case, the lamp flashes as long as the error is present.
- ▶ An exhaust-gas-related fault occurs in two successive driving cycles
- ▶ The engine management / transmission management detects a “control unit self-test” fault
- ▶ The ignition key is in the ON position without the engine running (lamp monitoring function)

## **OBD operating data**

Mode 1	Exhaust-gas-related actual values, system diagnosis data
Mode 2	Data from the engine environment (environmental conditions during fault detection)
Mode 3	Exhaust-gas-related error codes (debounced)
Mode 4	Deleting exhaust-gas-related error codes
Mode 5	Lambda control loop circuit values
Mode 6 + 8	Can be read out, contents are vehicle-manufacturer-specific
Mode 7	Non-debounced, current error codes
Mode 9	Identification features



# KTS 515: entry level access to onboard diagnostics (OBD)



Simple, fast and workshop-oriented testing of emission values in accordance with the OBD standard: the KTS 115 is the perfect entry level solution for this task, providing connection to an existing PC or laptop. All OBD modes and P0 codes are displayed. When the OBD standard is added to, all that's needed is a software update.

- The ideal OBD solution for the diagnosis of exhaust-gas-related systems**
- Reads out OBD modes 1–9 (current range of functions of the OBD standard)
  - Display of standardized P0 codes
  - Supports all four communication protocols (see “Technical Data KTS 515”)
  - OBD module for retrofitting Bosch exhaust-gas testers (BEA 8xx)
  - The usual, straightforward operator guidance
  - Software update option with extension of the OBD standard

### Equipment supply

Module, OBD diagnostics cable, PC module connecting cable (USB), USB Bluetooth adapter, software exhaust test OBD with KTS 515 PC program, power supply unit, case.

Technical data KTS 515	
Weight	0.33 kg
Function temperature range	0 to 45 °C
Dimension	170 x 35 x 120 mm (W x H x D)
Voltage supply	vehicle battery 12/24 V, power supply unit
Printout	on commercial-type printer (via PC)
Languages	ger, eng, fra, it, esp, fin, dk, ned, cs, por, sv, pol, rum, hun, gr, tr
Diagnostics protocols	ISO* 9141-2 ISO* 14230-4 (KWP 2000) SAE** J 1850 VPW } corresponds to SAE**J 1850 PWM } ISO 11 519-4 CAN*** corresponds to ISO 15 765-4
Connections	OBD diagnostics cable, USB, Bluetooth, power supply unit, operating display

\* ISO protocol installed predominantly by European vehicle manufacturers.  
 \*\* SAE protocol installed predominantly by Ford (EU) , and American and Japanese vehicle manufacturers.  
 \*\*\* CAN protocol implemented in an increasing number of vehicles.

### Accessories

- Longer PC connecting cables
  - USB 2 m 1 684 465 507
  - Adapter cable 5 m 1 684 465 567

### Order number

KTS 515 OBD module 0 684 400 515

For operation of the KTS 515, a PC or notebook with the following features is necessary: CD drive, Win XP, minimum 128 MB main memory, a free USB or serial interface and at least 600 MB hard disk capacity for the software installation.

# Bosch: **skilled partner** for workshop business

## Developments from Bosch stand for innovative progress in automobile manufacturing

Geared to the growing proportion of electronics in the vehicle, Bosch offers workshops the suitable test equipment for all sizes of company and service concepts. Sturdy, innovative, state-of-the-art automobile technology: computer-assisted diagnosis systems help in finding any fault more quickly and more reliably. The modular layout – using future-oriented technologies – enables broad networking and efficient use of comprehensive information from the ESI[tronic] software. Mobility and user-friendly user guidance support the workshop in reliable and timesaving diagnosis.



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