EVC
electronic

Manual for the Online Simulator Module

OLS300

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Program updates as well as an overview of our products are available on the internet at:

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1 INTERFACE

The simulator module has to be connected to the USB- port of your computer.

This port should according the USB conventions describing the USB-Version **USB 1.x** (full speed/ 12Mb/s).

It also provides the OLS300 moduls power supply.

2 FRONT PANEL

The front panel insists of the following parts:

Ignition- / configuration indicator. This LED flashes slowly, as soon as the simulator configuration was loaded (ca.1Hz**). The LED flashes rapidly, if the ignition is switched on (approx. 3Hz).**

External DC socket according DIN 2514, used for fast charging the Li-ion battery. This socket is protectet against wrong polarity connection
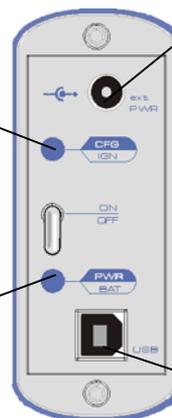
The PWR/BAT- LED begins flashing, as soon as the device has finished power-up and initialising sequence

The OLS300 is now expecting to load the configuration data via USB- interface

The USB type B socket has to be connected to your notebook or PC. If the notebook or the PC is swiched on, the Li-ion battery of the OLS300 will be charged

3 POWER SUPPLY

The power supply of the OLS300 module is provided by a rechargeable li-ion battery having a capacity of 1700 mAh. This type of battery is maintenance-free, nearly age resistant and free of the so called "memory effect". This effect caused rechargeable batteries of former generations to reduce the number of possible charging cycles.

Normaly, the li-ion battery is charged by the USB-Power while the OLS300 module is connected to a switched-on USB host (notebook or PC) . Doing so, a discharged li-ion battery will be totally charged within approx. 8 hours.

Depending on the temperature of the enviroment, the li-ion battery is able to supply the configured OLS300 module with power for 8 to 14 hours.

The li-ion battery of the OLS300 module cannot be overcharged. Permanet charging doesn't matter. Over- discharging the Li- ion battery is also not possible, because an integrated protection circuit will restrain this. When the Li-ion battery is discharged to its minimum, the protection circuit will switch-off the OLS300 module, no matter the position of the power switch. You can simply 'reactivate' the OLS300 module by connecting it to a switched-on PC or Notebook via USB-cable.

3.1 POWER JACK

Considering the case, it becomes necessary to charge the Li-ion battery in the fast charge mode, you can use the DC socket on the front panel, which is according to DIN 2514. A commercial low voltage power supply with an output voltage between 9Vand 24V can be used. Acting so, a discharged Li-ion battery will totally charged within approx. 1.5 hours.

3.2 DISPLAY OF THE CHARGING CONDITION

The PWR/BAT- LED shows the battery condition by its lighting duration: Long lighting means full-condition, short lighting shows nearly-empty-condition.

You can observe the actual battery charging condition exactly when moving the mouse cursor onto the battery symbol in the status line of the WinOLS program.
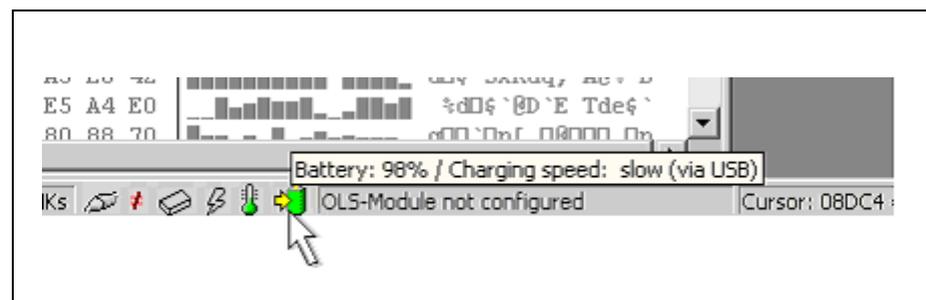
4 CONNECTING TO THE ECU

- The matching adapter cable has to be plugged into the IC socket instead of the EPROM. Eventually a socket has to be soldered into here first. In this case, you must not ignore the location of Pin1.

- In case of an incorrectly applied cable, e.g. the Pin1 is on the wrong side or the cable is pluged lengthwise shifted, the destruction of the control unit and/ or the simulator module may be possible.

- The next step is to connect the adapter cable to the simulator module.

- The EPROM contents are loading down to the module when the configuration file was loaded down automatically first.

- **! Not earlier but now the ignition controls may be triggered!**

- If the OLS300 is configured, the blue IGN/CFG- LED indicates the triggered ingnition controls with flashing rapidly.

5 WHAT YOU SHOULD CONSIDER ABSOLUTELY

SWITCHING ON THE IGNITION WITHOUT PREVIOUS LOADED CONFIGURATION MAY DESTROY THE SIMULATOR MODULE !

This is absolutely necessary, because the loading of the configuration file into the OLS300 simulator module determines which wires will be defined to work like outputs and/ or inputs. Without loading the correct configuration file (considering control unit, EPROM-type etc.), the control unit and/ or the simulator modul may be damaged.

NEVER CONNECT THE ADAPTER CABLE WHEN THE IGNITION IS SWITCHED ON !

First make sure, that the adapter cable is plugged in correctly, at the right position with no disalignemt and the GND- Pin(s) are connected well. You must not switch on the ingnition earlier!

NEVER DISCONNECT THE ADAPTER CABLE BEFORE THE IGNITION IS SWITCHED OFF !

Before picking up the adapter cable from the control unit, make sure that the ignition is switched off !

AVOID TO EXPOSE THE SIMULATOR MODULE EXTREMLY HIGH TEMPERATURES!

In the engine compartment, try to place the OLS300 simulator module at the coolest possible place. Never place the simulator module directly at engine parts wich can become very hot like cylinder head, exhaust pipe, etc..!

WATCH THE GROUND CABLES!

Make sure, that all of the involved conponent are well connected to ground. Never reconnect the assembly during simulation! (e.g. by connecting the notebook to the zigarette lighter receptable sourced notebook power supply while the assembly is runnig).

6 EPROM TYPES AND PROPER ADAPTERS

Classification of adapters according to EPROM types:

Adapter	OLS328	OLS328 + EAD101	OLS328 + EAD100	OLS340	OAD40 + EAD110*	OLS344
Case Kbit	DIL28 + DIL32	PLCC32	PLCC32	DIL40	PLCC44	PSOP44
64	2764					
128	27128					
256	27C256, 87C257, *28F256*	27C256	28F256			
512	27C512, 87C510, 27F512	27C512, 87C510	28F512			
1024	87C110, 27C1001, TI27C010, 28F010, M28F101	87C110	27C1001, TI27C010, 28F010, M28F101	27C1024, M28F102	27C1024, M28F102	28F100, 29F100, M28F110, M28F120
2048	27C2001, TI27C020, 28F020, M28F201		27C2001, TI27C020, 28F020, M28F201			28F200, 29F200, M28F210, M28F220
4096	27C4001, TI27C040, 28F040, M28F401, 29F040		27C4001, TI27C040, 28F040, M28F401, 29F040P	27C4096, M28F402	27C4096, M28F402	28F400, 29F400, M28F410, M28F420
8192						AM29F800

Special adapters:

Adapter	OLS368	
Case KBit	PLCC68	supported operating modes:
384	87BC6QG	all modes
832	CC460	Mode 1 and mode 5

Adapter	OLS356*	
Gehäuse KBit	SSOP56	* still under development.
8192	29BL802, 28F800F3	

6.1 ORIENTATION OF PIN1 OF THE OLS ADAPTER CABLES
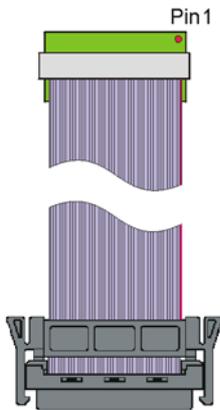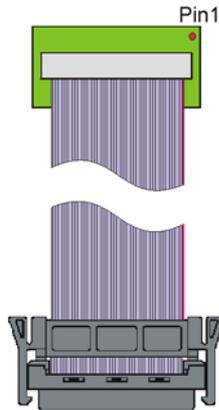
OLS344   OLS328   OLS340
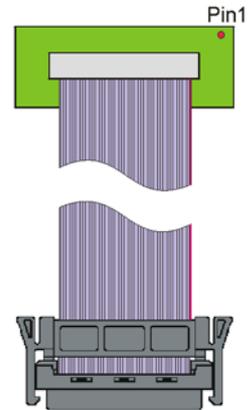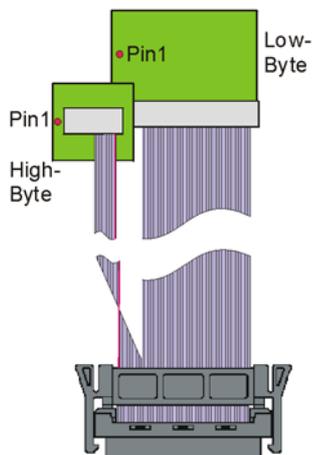
OLS332   OLS368
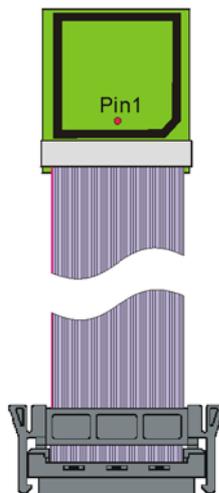
When using an OLS 332 adapter it is important to be aware of the „low"
and „high" byte- EPROM.

The OLS368 adapter has a 68-pin PLCC socket where the previously unsoldered original chip must be inserted. The simulator only plays the part of the EPROM of the chip. All the other functions like ports and RAM require the original chip. **Thus the data content of the inserted chip is not relevant but the configuration of the device.**

7 SPECIAL PARTS 87BC6QG / CC460

When modifying the combination modules 87BC6QG (87M12) and CC460 a few special properties have to be taken into account. Besides the port functions and RAM the 87BC6QG contains a 48 Kbyte UV erasable EPROM and the CC460 a 96 Kbyte sized flash EPROM.

Especially the CC460's flash EPROM is not arranged in one piece but in several blocks, thus the lookup tables are following for reasons of compatibility:

7.1 87BC6QG

As mentioned above, this module contains an UV erasable EPROM, while the usual variant within a plastic case doesn't have a window, of course, thus it is OTP (**o**ne **t**ime **p**rogrammable).

Now, this module features two additional registers, which are LR and CSR. In a HEX window they are displayed at the addresses of 10000h and 10001h. These addresses shouldn't be modified while editing because hereby the memory layout is being switched. When reading out and reprogramming as well as at simulations these data will be transferred automatically, too.

These memory blocks are being displayed at the proper address, too, while the rest is being shown as FF and cannot be programmed.

When working with the simulator the configuration is being loaded automatically. The simulator adapter's ZIF (zero insertion force) socket has to contain a 87BC6QG with the same configuration while the data it contains is irrelevant.

	0, 1	2, 3	4, 5	6, 7
EPROM	4000 – FFFF	2000 – DFFF	0000 – BFFF	4000 – FFFF

7.2 CC460

The CC460's advantage lies at the flash memory, of course, which is deleteable and reprogrammable.

Here the configuration register is called CSR and is located at 1FFFF.

In addition to the fact that a version 1 and a version 2 exists the first version contains 4 and the second one 5 configurations. Nearly all control units which contain this module are using version 2 / configuration 1. In the near past several control units (Citroen, Peugeot, Renault) appeared on the market which use configuration 5.

The OLS system only supports the configurations 1 and 5 at this time. Besides that the EPROMmer is able to program the CSR but it cannot erase it.

Here the simulator adapter's ZIF socket also has to contain a module with the same configuration and the data contents are irrelevant, too.

Configuration	1	5
EPROM1	00000 – 01FFF	00000 – 01FFF
EPROM3A	04000 – 07FFF	06000 – 07FFF
EPROM2	08000 – 0BFFF	0C000 – 0FFFF
EPROM3B	10000 – 13FFF	10000 – 13FFF
EPROM3C	14000 – 17FFF	14000 – 17FFF
EPROM3D	18000 – 1BFFF	18000 – 1BFFF
EPROM3E	08000 – 0FFFF	1C000 – 1FFFD
EPROM3F	–	08000 – 09FFF

8 TECHNICAL SPECIFICATIONS

Interface	USB 1.x Full- Speed min. (12Mb/s)
Simulation memory	4 MByte
Power supply	1.7Ah Li-Ion polymere rechargeable battery
Dimensions (W x H x D)	85 x 35 x 141 mm ($3^1/_2$ x $1^3/_8$ x $5^1/_2$ Inch)
Weight	280 g (9.88 oz.)