850 OBDII APP ANDROID ONLY

Official Website & Google Play App

Shortly this App aims to replace Volvo´s official VST tester (and more?) to diagnose Volvo P80 platform years of 96 to 00 (+growing support for P2 platforms!) through reading, programming parameters, remotes and so on... With Android and ELM327 Bluetooth/Wifi/USB adapter devices. Additionally the universal OBDII standard reading has been included. Read more details below at ´Detailed Function List´ section.

Official Website

https://xiaotec.fi/?lang=en&a=10

Official Google Play App

https://play.google.com/store/apps/details?id=xiaotec.fi.obdii

What scanning (ELM327) device?

> ELM327 must fulfill genuine V1.4b level of the device which many china devices does not fill!

There is a wide range of brands of these so be careful. Volvo needs to have FULL WORKING V1.4b support at minimum!
I ordered two same looking but inside different ELM327 clones and as you can see from picture that other one has two layers of boards.
Other one (left) is not compatible with Volvo as i tested it did crash at ATSI command which it didn´t regocnize and it did send only ? - questionmark.
Most cases is that on not working ones has COB chip (Chip-On-Board) or lamer terms black epoxy glue over unknown chip.
Working ones has original ELM PIC chip or well emulated firmware in PIC18F chip.

Fake VS Real ELM327 PIC18F25K80

The ELM327 is a popular IC developed by Elm Electronics for communicating with the standard OBDII (On Board Diagnostics) protocols through the OBD2 port on your vehicle.
This is used by mechanics and DIY'ers to diagnose and troubleshoot vehicle problems.
It is also used by enthusiasts for getting useful information about your vehicle in real-time, such as speed, revs, temperature, air-flow, fuel consumption, etc.

> Please read the following articles to gain understanding and knowledge.

An article from https://cvtz50.info/en/elm327/

An article from https://timyouard.wordpress.com/2015/09/02/disection-of-a-counterfeit-elm327-obdii-adapter-from-china/

REPORTED WORKING BRANDS

BRAND	WEBSITE	LINK	PRICE	NOTES
OBDLink MX+ OBD2 Bluetooth Scanner for iPhone, Android, and Windows	Amazon	LINK	£149.95 (19/08/2024)	App Developer Recommend
Veepeak OBDCheck BLE+ Bluetooth OBD II Scanner Car OBD Code Reader Auto Engine Diagnostic Tool for iOS & Android	Amazon	LINK	£39.99 (19/08/2024)	App Developer Recommend The Android version is not rec
Viecar ELM327 V1.5 Bluetooth 4.0 OBD2 PIC18F25K80 ELM 327 V1 5 OBDII Car Diagnostic Scanner OBD2 Scan Tool Code Reader	Aliexpress	LINK	□ 2.56 Ex Tax (19/08/2024)	Tested by me (Kyle)
OBD2 ELM 327 Bluetooth Car Scanner for use with Volvo 850 OBD-II app	Ebay	LINK	£19.95 (19/08/2024)	Untested, Ebay has good re

Special case(s)

UCSI-2000 - Slight bugs in firmware.
Tacklife AOBD1B - Firmware has crash/freezing bugs (device goes in total black out) in ELM emulation so better run "No ELM info Scan" - option Enabled in SCAN Options.
Manufacturer answer when reported bugs - "We currently have no intention to cooperate.".

NOT WORKING

Konnwei
BlueDriver OBD2 Scanner (seems only work on their app ex. crashes with ATZ and ATPC commands.)
OBDCheck BLE (Veepeak)
Vgate vLinker FD+
By suggestions and feedback app keeps getting more filled and fixed. Send people log via settings page (bottom) as there is simple button for that. Thank you if you may :)
I don’t have now myself any open inventory as I am in process building new and customised adapter in house as I need ask more from dongle in future coming features what elm327 was not ever designed for.

Remember keep ignition on at (II - position) to have power on ECUs! And dont forget leave ELM327 device plugged when you done.. at least in my Volvo 850 there is always electricity at OBDII port and Bluetooth ELM327 draws 0.04A most of the time.
Remember too that many ELM327 devices may have problem connect when over 1 meter away from your phone.

Bluetooth:

Click Bluetooth icon at the top-right corner - Bluetooth Devices.
Or by going Settings/Bluetooth Devices -page.
Select your device from the list of already paired OBDII device or click Search -button to find your device and select it.
Connect at your device by clicking Play button at top-right corner (changes then to green pause button when connected).
Use the app functions!

Reading the modules (information, parametres, odometer status..) happens At **Service/Scan** and results will be saved at main (summary) page.
Reading sensor data happens at **Live**.
Note! If you select to Scan only OBDII standard to find Fault codes. You will miss a lot as Volvo had most Fault codes report via individual modules via their own codes and not as standard OBDII Pxxx -codes (most modules does not set any Pxxx codes ever!). This option was mostly included if wanted scan any car with OBDII port on this standard way.
Two examples why too need be careful with these "standardized" OBDII reportings due manufacturers having mind of their own in same playfield.. On Live side OBDII ex. Intake Air Temperature PID on Motronic M4.4 ECM is not IAT but Ambient Temp. Sensor output. Another example is possibility get Pxxx fault code on Citröen of bad secondary air valve which that model did not even have.. though main fault ended up being faulty secondary air pump.

You can Export Scan readings too as text file if you have had Datalog on to 850Log.txt via **Settings/EXPORT LOG**.

D5252T MSA15.7 (1997-1998) / MSA15.8 (1999-2000)

MSA15.7
Dynamic FP Timi...

Please refer to manufacturer guidance how to adjust timing.

Requirements:
*No Fault codes.
*Speed is Zero.
*ECT +80C (+176F)
*Engine running between 700-1500rpm
*Fuel Temp between 30-60C (86-140F).

0km/h
ECT:82°C
Fuel Temp:42°C
1 280RPM

Click 'Start'
to check conditions are reached
Button will change to read 'Start Timing'
when they are.

RUNNING

☑ Bypass Conditions

Within limits when Belt is new/old
all values are before TDC

New: 0.1° to -1.0°
Used: 0.2° to -2,0°

Current:7.8°

MSA15.7
-Dynamic Fuel Pump Timing (TDI)
-EGR Valve
-Turbo Regulating Valve
-MIL light
-Heater Relay 1
-Heater Relay 2/3
-Engine Cooling Fans (Low/High speed)
-Low Idle Adjust Parameter
-Start Fuel Adjustment
-EGR Adjustment
MSA15.8
-Programming Low Idle Speed Adjustment

850/900 series

These ECUs can be reached by ELM327 on 850´s:

Motronic M4.4

MSA15.7

AW50-42 (Automatic Gearbox)

ABS

SRS (Airbag)

COMBI (VDO dashboard)

Front Electric Seats

IMMO

But these can not be due being older diagnostic systems:

-Dashboard manufactured by Yazaki

-Motronic M4.3

-MFI system (LH-jetronic 3.2 & EZ129K)

-Fenix 5.2

-ECC(A/C)

-Cruise Control

850 had two dashboard manufacturers VDO and Yazaki which only VDO has OBD diagnostics (COMBI).

C70/S70/V70/XC70, S90/V90

On these mostly all were upgraded to use newer OBD diagnostic system except Fenix 5.2 ECM (10 valve gasoline engines) which all the App supports (list below what all).

So additionally to previous models these are too supported:

DSA, RTI, ROP, ECC, VGLA, Convertible Top Module, 912-D Heater and Yazaki dashboard.

VGLA Remote Programming is supported and can be done fully without Volvo dealership and if ECC is stuck in calibration mode it can be kicked off to return operation as some special functions only found on this App.

S40/V40 models up to year 2004

These has some special attention required like COMBI uses slightly different commands on live data and more fixes for those are coming on later updates or by request and wishes.

V1.7.9 Has brought support for ABS sensors to be readen on Live Data and support for Tire Size and Service light programming on these models.

P80 Year models 1999-2000 (SVXC70 models mostly, not ex. S80)

These were development years for Volvo as V70 models are working partially under CAN Bus like Dashboard (CDM/CEM), Engine ECU (ECM) or ABS.

VGLA (Alarm), Immobiliser, SRS, AW 50-42.. been on older systems still as fully or parallel.

VGLA Remote and IMMO Key Programming is supported on these years as well (reported too working by the users).

CAN Bus support of the App:

+Dashboard (CDM/CEM) has Service Light programming, reading and clearing fault codes, Service Light (SRI) reset and programming and GAUGETEST function.

+ECM (ME7) reading and clearing fault codes and Live Data (since V1.7.9 growing support by the requests).

+ETM reading and clearing fault codes.

+ECM (DENSO) reading and clearing fault codes.

+ECM (MSA15.8) reading and clearing fault codes.

+TCM (Gearbox) module reading and clearing fault codes and Pressure and Oil quality adaptation reset.

+ABS(BCM) module reading and clearing fault codes

C70 year models up to 2004

Additionally to previous listing:

+ROPS reading and clearing fault codes.

+CAB (CCU aka Cab Control System) reading and clearing fault codes.

P2 Year models since 2000 (1998 since S80 models) and XC90 models

Volvo went mostly under multi CAN Bus systems (Slow & High Speed).

ELM327 is hardwired only to High Speed CAN Bus (OBDII 6,14) and you need connect those to Slow Speed CAN Bus side (OBDII 3,11) with a switch or with an adapter on these years to reach some of systems like DIM on this CAN Bus.

DO NOT MAKE SHORT CIRCUIT / JUMP BETWEEN CAN Bus PINS!

App supports at moment Dashboard (DIM) test in Service >> GAUGETEST when done this hardware mod!

CAN Bus support of the App:

+CEM reading information, fault codes and clearing fault codes.

+ECM (ME7) reading and clearing fault codes and Live Data (since V1.7.9 growing support by the requests).

+ETM reading and clearing fault codes.

+ECM (MSA15.8) reading and clearing fault codes.

+TCM (Gearbox) module reading and clearing fault codes and Pressure and Oil quality adaptation reset.

+ABS(BCM) module reading and clearing fault codes.

+DEM module reading and clearing fault codes *under testing*.

P2 Platforms, year models since 2005 (SVXC70, S60, S80 etc..)

In App Settings menu you most likely are required change the setting of "CAN Bus year" from "1999 to 2004" to next "2005 up" to get connection on supported modules.

Main features:

+Service Light (SRI) Reset / Programming (COMBI and CDM).

+ DTC / Fault Code Reading and clear (Service >> Scan / ClearDTC).

-SRS light? It will turn off if there is no left any active faults.

+Live Data (realtime sensor data / Scrolling Values).

+Reading info of the car modules (ex. part numbers and parameters).

+Test Functions and programmable parameters or Activations (Service >> Advanced) as example. >> Injector testing (Motronic M4.4)

>> TDi Fuel pump Dynamic Timing (MSA15.7)

>> (VGLA) Remote Programming (P80 platform 70 year models 1997 to 2000, and C70 models up to 2004).

.. and much more!

Detailed Function List

Fault Code Definitions supported:

-Motronic (M4.4)

-EMS2000

-MSA15.7 (only with D5252T engines!)

-DENSO

-AW 50-42 / AW 30-43

-COMBI

-VGLA (Alarm)

-912-D Heater

-ECC (only S40/V40, C70/S70/V70/XC70)

-IMMO

-RTI

-SRS (up to 2000 year models and 40 series and C70 models up to 2004 year)

-Powerseats

-ROP (Roll Over Protection) (only C70)

-CAB (CCU) (only C70)

P2 platform

-CEM

-BCM (ABS)

-ECM ME7

-ETM

-ECM EDC16

-ECM MSA15.8

-DEM

If a module isn't listed here, means it may not have all fault code definitions but App does collect all hex values of D

Live Data:

-OBDII Standard (partly)

-ABS

-SRS (airbag)

-Instrument panel (COMBI)

-AW 50-42 / AW 30-43 (Automatic Gearbox)

-MSA15.7

-Motronic 4.4

-ECM ME7 (CAN Bus)

-IMMO

-VGLA

-ECC (Aircon)

-HEAT (CPM / 912D / Additional Heater)

-Power Seats

Advanced (component test, parameter conf

>>Instruments (COMBI, CDM)
-Service (SRI) light parameters when lights up (mileage, time or use hours)
-Wheel Size parameter (Att! ONLY for 850 models.
There is no yet good reference information of value to wheel size.

Affects Speedo and odometer mileage)
-Country Code parameter (Remember save your original value! V70 dash can transform between miles to km by this

-Speed Warning Program (If Dashboard supports this and or you have done retro fitment.)

Motronic (M4.4)

-Engine Cooling Fans (Low/High speed)

-IAC Valve

-Injector Testing

-Fuel Pump Relay

-SAS Air Pump

-SAS Air Valve

-EVAP Control Valve (Shut-off, Purge)

EMS2000

-Reset Adaption Memory

MSA15.7

-Dynamic Fuel Pump Timing (TDI)

-EGR Valve

-Turbo Regulating Valve

-MIL light

-Heater Relay 1

-Heater Relay 2/3

-Engine Cooling Fans (Low/High speed)

-Low Idle Adjust Parameter

-Start Fuel Adjustment

-EGR Adjustment

MSA15.8

-Programming Low Idle Speed Adjustment

TCM AW50-42 (Non CAN)

-S1 and S2 Solenoids

-Lock-up Solenoid

-Line Pressure Solenoid

-Warning Light

>> TCM P2 Platform (CAN Bus)

-Erase Adaptive Data (Adaptive Pressure)

-Erase Adaptive Data (Oil Quality)

ABS

-ABS Pump

-Valves (Solenoids) Testing

ECC (A/C)

-ECC Activate self-adjustment
*App includes so called Exit Self-Adjustment function to recover ECC back to functional status if ECC is stuck in Self-

-ECC Update

-ECC Configuration (Parametres)

DSA (Dynamic Stability Assistance)

-Reset Wheel Adaption

>> VGLA (Alarm ex. V70 models)

-Add Remote (Remote Programming on 70 Series models for years 97 to 00)

-Retrieve PIN

-Configuration

IMMO

-Key Programming

HEAT (CPM / Additional Heater)

-Configuration

Simple but advanced as possible and expand in future as far i can. Only difficulties for user should be is connecting to your OBDII ELM327 device. Keep Ignition II On position while using App. Note: One tested S60 system ECM stayed off until turned engine On -- possible Ignition wear.

Example of Wifi and Bluetooth connection + reading.

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