

Pass-Through & J2534 Guide

J2534 and Pass-Through

J2534 is a set of SAE standards that specify a messaging protocol for standardised vehicle communication interfaces (VCIs). These VCIs such as the Autologic Dongle and DrewTech CarDaq are the electronic interface between a PC running a vehicle manufacturer's pass-through application and the car.

The vehicle manufacturers' (VM) pass-through applications are written independently to the VCI, but must adhere to the messaging standard of J2534. Therefore this standard enables workshops to require just one piece of diagnostic hardware through which they could run many VM diagnostic applications. Note, that the content of a VM's pass-through application may differ between the US and Europe.



Legislation

USA – 2004 model year (Emissions only Reprogramming)

The environmental protection agency (EPA) introduced legislation in 2003 that required all manufacturers selling in the US to make available flash programming for emissions-control systems. The flash programming applications had to be compatible with J2534 VCIs.

The legislation came into effect for model year 2004 vehicles.

There was no legal requirement for VMs to provide any enhanced diagnostics or to offer reprogramming outside of the emission-control areas of the vehicle. However, since 2004 many manufacturers have chosen to enhance their pass-through offering beyond the legislated emissions-only reprogramming and offer more diagnostic coverage across the vehicles.

Euro 5 – 2008 (Full vehicle reprogramming)

Euro 5 is a collection of European Commission regulations setting the type-approval conditions for new vehicles in the areas of gas emissions and access to repair and maintenance information (including diagnosis and reprogramming).

Importantly for us, vehicle manufacturers have to offer a subscription based, full vehicle reprogramming application compatible with J2534.

Euro 5 came into force in September 2009 and all new vehicles sold had to be compliant by January 1 2011.

Similar to the USA, there is no requirement for the VMs to offer any diagnostic functionality other than ECU reprogramming. Nevertheless, many VMs have chosen to offer more than the legislated minimum.



Exceptions to the legislation - USA and Europe

The exceptions to both the Euro5 and EPA legislations are in the areas of vehicle security. A VM is exempt from providing reprogramming via J2534 if that particular reprogramming service could facilitate the theft of a vehicle. Therefore, some VMs have withheld applications such as key programming and immobiliser diagnostics.

To compensate for this exception, a body in the US called NASTF was setup to accredit and certify workshops further enabling them to access vehicle-security functionality. In Europe the SERMI initiative is similar, and although approved by the EC has not been formally rolled out across Europe yet.

Massachusetts Right to Repair (Full vehicle diagnostics + Reprogramming)

The right to repair legislation will come into force for model year 2018 passenger cars and will be adopted by all 50 states in the US. The legislation ensures that independent workshops have the same access to repair and maintenance information and diagnostic software as the authorised repairers. The diagnostic software must be compatible with J2534 and includes all diagnostics and ECU reprogramming.

The same exceptions to vehicle security were requested by the VMs, but the secure data release model currently run by NASTF will allow accredited independent workshops to access this information.

VM Application Content

As already noted, most manufacturers are now offering pass-through applications with more content than is currently legislated. Clearly in the US, the VMs who offer emissions reprogramming only will have to enhance their applications in order to comply with Right to Repair in 2018.

Both US and European legislations state that vehicle manufacturer pass-through applications must be offered by subscription for daily, weekly, monthly or annual use and the pricing must be fair and reasonable.

OEM	Model Year Coverage	Diagnostics	Reprogramming
BMW	1996 onwards	Yes	Yes Full
Land Rover	2005 onwards	Yes	Yes Full
Jaguar	1995 onwards	Yes	Yes Full
Mercedes USA	2002 onwards	No	Emissions related only
Mercedes Europe	Approx. 2010 onwards (Euro 5)	Yes	Yes Full
Volvo	1999 onwards	Yes	Yes Full
VAG USA	2005 onwards	Yes	Yes Full
VAG Europe	Euro 5 vehicle only	Yes Full	Yes Full





BMW – Europe and USA

BMW pass-through coverage is from 1996 onwards.

The pass-through application has full diagnostic and reprogramming capability.

The pass-through application is missing both “Ethernet Diagnostics over IP” (DoIP) programming and MOST (fibre optic) programming. DoIP (Ethernet) programming does not offer more functionality than conventional programming, but it is incredibly fast. DoIP will be adopted by J2534 and so this gap is likely to close within the next 2 years.

Minimum Requirements for BMW

Operating system	Microsoft Windows 7 Professional/Enterprise (32 bit or 64 bit)
Processor Speed	Pentium IV or better with 2GHz minimum.
Memory/RAM	2GB or more
Graphic/screen resolution	1024x768 or greater
Hard Disk space	80GB minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	No
Blu-Ray drive required?	No

Subscription costs for BMW*

Time credits				
1 hour	1 day	1 week	1 month	1 year
€6	€32	€120	€400	€3,575

*All prices quoted are exclusive of VAT.





Land Rover

Land Rover pass-through coverage is from 2005 onwards. It offers full reprogramming and diagnostic capabilities. However, in the USA a NASTF registration is required for security related diagnostics.

Models covered:

- Defender (2007 onwards)
- Discovery LR3/LR4
- Range Rover Sport L320
- Range Rover L322 (2005 onwards, limited cover on 2005 and 2006 model years)
- Range Rover Sport L494
- Range Rover L405
- Freelander 2/LR2
- Discovery Sport
- Range Rover Evoque

Minimum requirements for Land Rover

Operating system	Microsoft Windows XP Professional OR Microsoft Windows Vista Business Edition (32 bit only)
Processor Speed	Pentium III with 800MHz.
Memory/RAM	512MB RAM or more
Graphic/screen resolution	1024x768 or greater
Hard Disk space	60GB minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	No
Blu-Ray drive required?	No

Subscription costs for Land Rover*

Document subscriptions					Programming subscriptions				
1 hour	1 day	1 week	1 month	1 year	1 hour	1 day	1 week	1 month	1 year
£23.50	£39.50	£111	£229	£1,325	£143	£167	£292	£480	£725

*All prices quoted are exclusive of VAT.





Jaguar

Jaguar pass-through coverage is from 1995 onwards. In the USA, a NASTF registration is required for key programming.

Models Covered

- XJ-X351
- XK-X150
- XF
- F-Type

Minimum requirements for Jaguar

Operating system	Microsoft Windows XP Professional OR Microsoft Windows Vista Business Edition (32 bit only)
Processor Speed	Pentium III with 800MHz.
Memory/RAM	512MB RAM or more
Graphic/screen resolution	1024x768 or greater
Hard Disk space	60GB minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	No
Blu-Ray drive required?	No

Subscription costs for Jaguar*

Document subscriptions					Programming subscriptions				
1 hour	1 day	1 week	1 month	1 year	1 hour	1 day	1 week	1 month	1 year
£23.50	£39.50	£111	£229	£1,325	£143	£167	£292	£480	£725

*All prices quoted are exclusive of VAT.





Mercedes

Mercedes Pass-through coverage in the USA is from approximately 2002 onwards. It offers only Engine and Transmission reprogramming and there is no diagnostic capability.

Mercedes Pass-through coverage in Europe is from approximately 2010 onwards. It offers full diagnosis and reprogramming for Euro 5 vehicles. 'Important Note:

Please note that XENTRY Pass Thru EU may only be ordered by users whose location of business is within the European Union (EU). Users whose location of business is in Iceland, Liechtenstein, Norway and Switzerland (EFTA countries) may not acquire XENTRY Pass Thru EU.'

Minimum requirements for Mercedes

Operating system	Microsoft Windows 7/8/8.1 (32 Bit or 64 Bit)
Processor Speed	Pentium i5 hyper-threading or comparable model
Memory/RAM	4GB Minimum
Graphic/screen resolution	1024x768 or greater
Hard Disk space	100GB Minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	Yes
Blu-Ray drive required?	Yes

Subscription costs for Mercedes*

Computer License	Time credits			
1 year	1 hour	1 day	1 month	1 year
€110	€7	€32	€275	€1,904

*All prices quoted are exclusive of VAT.





Volvo

Volvo pass-through coverage is from 1999 onwards. It offers full diagnostic and reprogramming capability. The pass-through application uses the same software that the dealer tool runs.

Minimum requirements for Volvo

Operating system	Microsoft Windows 7/8.1 Professional (64 Bit Only)
Processor Speed	Pentium i3 or above
Memory/RAM	4GB Minimum
Graphic/screen resolution	1280x720 or greater
Hard Disk space	10GB Minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	No
Blu-Ray drive required?	No

Subscription costs for Volvo*

Site License	Subscription			Car software
1 month	1 hour	1 day	1 month	Per car
2,496 SEK	184 SEK	221 SEK	2,863 SEK	Approx. 100-500 SEK

*All prices quoted are exclusive of VAT.

VAG

VAG pass-through coverage is from approximately 2004 onwards.

VW, Audi, Seat and Skoda require individual pass-through licenses. The pass-through applications offer full reprogramming and diagnostic capabilities. In Europe, the software now only works on Euro 5 type approved vehicles.

Minimum requirements for VAG

Operating system	Microsoft Windows 7 (64 Bit Only)
Processor Speed	Any Dual Core Processor with 1GHz Minimum
Memory/RAM	512MB of RAM or more
Graphic/screen resolution	800x600 or better
Hard Disk space	80GB Minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	Yes
Blu-Ray drive required?	No

Subscription costs for VAG*

DVD/ DL FOC	GeKo Subscription	Time Credits (VW and Audi, purchased separately)				
		1 hour	1 day	1 week	1 month	1 year
		€10	€55	€205	€290	€1,760
One off	1 month	Time Credits (SEAT)				
		1 hour	1 day	1 week	1 month	1 year
		€9	€51	€190	€260	€827
€18	£30	Time Credits (Skoda)				
		1 hour	1 day	1 week	1 month	1 year
		€9	€43	€158	€230	€723

*All prices quoted are exclusive of VAT.





PSA – UNDER DEVELOPMENT

PSA pass-through coverage via the Autologic dongle is currently under development. The basic information below shows equipment compatibility and costs.

Minimum requirements for PSA

Operating system	Microsoft Windows XP Professional OR Microsoft Windows Vista Business Edition (32 Bit Only)
Processor Speed	2GHz Processor Minimum
Memory/RAM	512MB of RAM or more
Graphic/screen resolution	1024x768 or greater
Hard Disk space	1GB Minimum
Fast Internet Speed required?	Yes
USB port required?	Yes
DVD drive required?	No
Blu-Ray drive required?	No

Subscription Costs for PSA*

Time Token
One token per car (valid for one week, Peugeot and Citroen purchased separately.)
€30

*All prices quoted are exclusive of VAT.

Disclaimer – This information is provided as a guide only. All prices quoted are estimates and are not controlled by Autologic. As such they are subject to change by the individual vehicle manufacturers. Autologic cannot be held responsible for any errors regarding manufacturer information that leads to diagnosis or programming malfunctions. This document is regularly updated so please check for latest version. E&OE.

