

Technical Service Bulletin



00 Software Version Management (SVM), operating instructions

00 14 65 2011732/10 July 15, 2014. Supersedes Technical Service Bulletin Group 00 number 12-32 dated February 7, 2012 for reasons listed below.

Model(s)	Year	VIN Range	Vehicle-Specific Equipment
All	2002 - 2016	All	Not Applicable

Condition

REVISION HISTORY		
Revision	Date	Purpose
10	-	Revised entire bulletin to include ODIS information
9	2/7/2012	Revised header data (Added model years) Revised <i>Technical Background</i> Revised <i>Service</i> (Added image)
8	3/24/2010	Revised <i>Technical Background</i> Revised <i>Service</i> (Added <i>Response Codes</i> section)
7	5/13/2009	Revised <i>Service</i> (Step 6)
6	12/15/2008	Revised <i>Service</i> (Step 3 – added information concerning use of wireless VAS 5054A transmitter head)
5	11/17/2008	Revised Title to include Repair Group
4	10/21/2008	Revised <i>Service</i> (Step 3 – added information concerning Windows power savings settings)

This Technical Service Bulletin (TSB) details the general process for carrying out a Software Version Management (SVM) software update for any TSB or Update.

Troubleshooting information is included in the *Additional Information* section.

Technical Background

Glossary of Terms & Acronyms used in this service bulletin

SVM: Software Version Management	ODIS: Offboard Diagnostic Information System
ECU: Electronic Control Unit (i.e. ECM, TCM, BCM, gateway, cluster, etc.)	ECM: Engine Control Module
TCM: Transmission Control Module	CARPORT: The database that stores the last known good configuration for each VIN.
XCHG: Abbreviation for “exchange” or replacement (i.e. SVM Code XCHG15A005)	ASAM-MCD: ASAM - Measurement, Calibration, and Diagnostics
ETKA: ET = Ersatzteil (Spare Parts) & KA = Katalog (Catalog)	MMI: Multi-Media Interface
ASAM: Association for Standardization of Automation and Measuring Systems	MIB: Modular Infotainment System (ENG) Modularer Infotainment Baukasten (GER)
MOST: Media-Oriented System Transport	Service42: Server hosting the SVM application
VAS: Volkswagen Automotive Service Equipment	Version42: Engineering database hosting the ECU data and configuration files
ZUG: Refers to the software package, or train, of an ECU. “Zug” is a German word for train.	

Technical Service Bulletin



SVM Basics

SVM was developed to ensure that the hardware and software of each ECU is correct before the vehicle leaves the dealership repair facility.

A VAS 5051B, VAS 5052A, VAS 6150(A/B/C) or VAS 6160 diagnostic tool is required for reading the vehicle control unit data and sending it to the SVM server (also called an “SVM communication”). The SVM communication data flow is illustrated below (Figure 1).

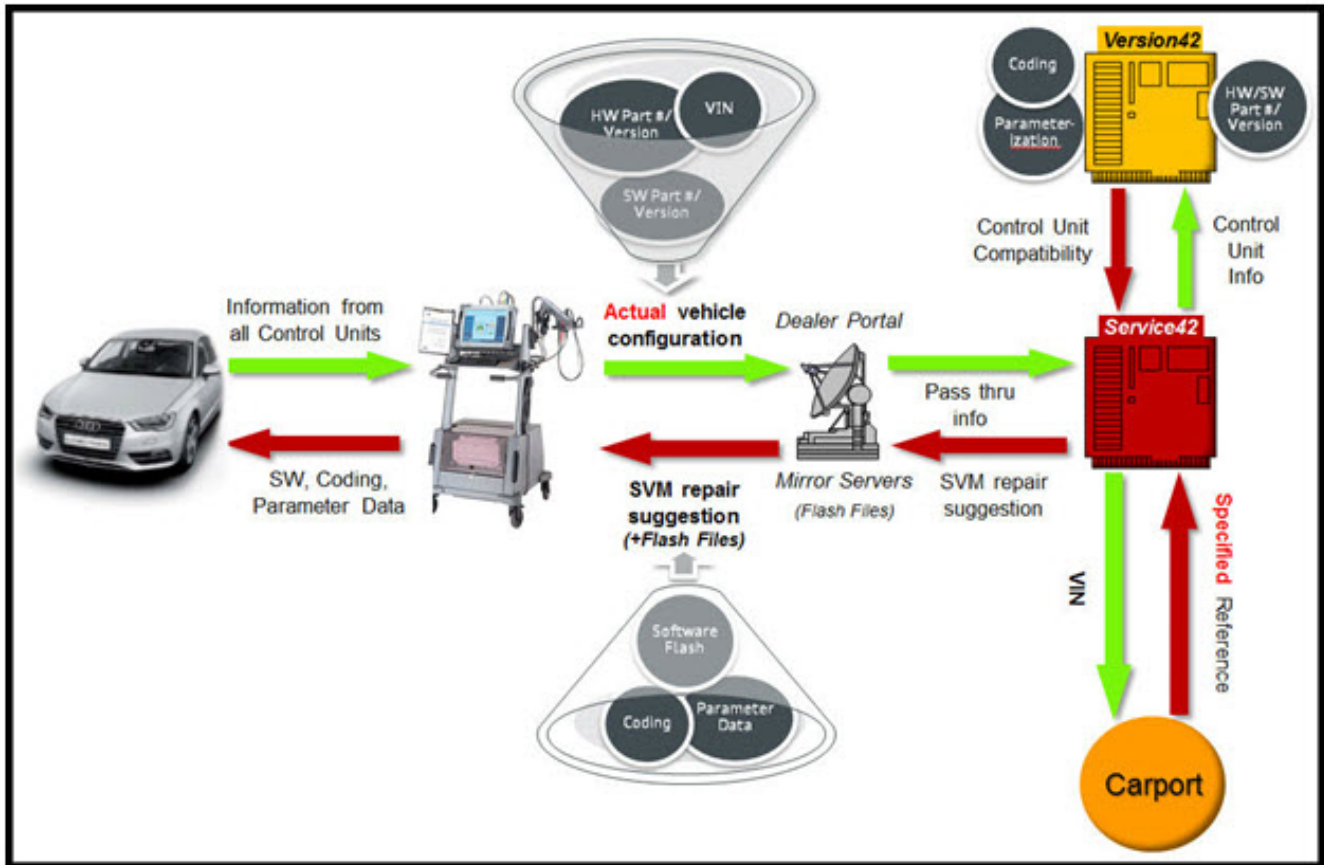


Figure 1. SVM communication data flow.

SVM Menu Options

There are five main menu options (Figure 2). The display order may vary:

1. **SVM - Activations**
2. **SVM - Code input**
3. **SVM - Direct input: SVM code for vehicle conversion**
4. **SVM - Specified/actual comparison or SVM - Check vehicle configuration** (This function is named differently depending on the type of vehicle connected).
5. **SVM - communication, checking**



Figure 2. Five SVM main menu options

See the corresponding section below for an explanation of each menu option.

SVM - Activations

Purpose: Used to recover existing activations or to activate new features/functions in an installed control unit.

- When used to recover an existing activation, no activation code is required because the license authorization is already on the server.
- When used to activate a new function/feature, a new activation code (and possibly a PIN or customer code) may be required.

How it works: Currently, SVM activation codes are only being used with navigation map data updates for vehicles with MMI3G/3G+. Recovery activation is also used with MIB systems.

Instead of purchasing navigation map data, the customer must purchase an “activation packet” to unlock the map update in the MMI system. The activation packet consists of an activation code, activation number, and PIN. Once the activation packet information is used on a vehicle, it is permanently connected to that vehicle in the SVM database and cannot be used on any other vehicle.

SVM - Code input

Purpose: Code input is used to update the software in the vehicle. It is used for any updates that cannot be performed with SVM - Specified/actual comparison (or SVM - Check Vehicle Configuration, depending on model).

How it works: When an SVM code is entered, a “Quick Test” is automatically performed. This test immediately verifies whether or not the SVM code is valid (before the update is attempted) by sending the VIN and SVM code for rough verification before other information is read out of the car and sent to SVM.

- If a hardware change is necessary, the software update will not be performed and a response of “the SVM code is not valid for the vehicle” or “check hardware against ETKA” is provided.

- If SVM determines that it will not be able to code and/or parameterize the control unit after the update, it will indicate that the SVM code is valid for the vehicle, but the update cannot be completed. (In such cases, contact TAC for assistance).
- If no issue is found, SVM will perform the update.
- After the update is complete, a specified/actual comparison is performed for the updated diagnostic addresses in order to calculate the new coding and parameter data¹ set for the control unit, and to set a new reference in the CARPORT database.

Additional Information:

- Before an SVM code input is attempted, it is important that the condition is correctly diagnosed and that only a valid code from an applicable TSB is used. Incorrect SVM codes can cause conflicts in the SVM database.
- SVM codes can be used to document manual software updates (which are performed with a CD, DVD, or SD card), such as MMI software package (ZUG) updates. An SVM code for an MMI update will document changes in the SVM database and provide coding and/or parameterization suggestions, but it does not perform software updates. SVM codes for MMI software package (ZUG) updates will only be successful if all control units are already updated to the correct level (including those that were recently replaced).
- SVM exchange codes (XCHG) may be used to aid in the installation of new service parts when a specified/actual comparison cannot code or parameterize the replacement control unit (such as with all Audi airbag control units). XCHG codes can be found with the parts bulletin listed in ETKA, or in an applicable TSB. It is critical that the XCHG code is run *immediately* after a new control unit is installed in the vehicle. If a specified/actual comparison is performed instead of the XCHG code, an invalid vehicle reference can be created in the SVM database which can prevent the XCHG code from functioning. (In such cases, contact TAC for assistance). Typically, GFF runs the XCHG code in the control unit replacement routine automatically, or it will ask if an XCHG code was provided.

SVM - Direct input: SVM code for vehicle conversion

Purpose: Allows for a factory-approved retrofitting of additional control units by using a valid SVM code for vehicle conversion. This option is only used when a new control unit is added to the vehicle. It is not used for spare parts needed at repairs.

How it works:

- When a code for vehicle conversion is entered, SVM performs a check of all hardware. It is important to note that ALL hardware is checked. This is to ensure there are no incorrect ECU's installed in the vehicle prior to the retrofit. An incorrect ECU in the vehicle can potentially create unwanted functionality or behavior of the newly retrofitted ECU.
- The installation instructions for the new control unit contain information about the SVM code for vehicle conversion. This code is typically documented in the last installation step.

Additional Information: SVM codes for conversion are typically named "050XXX".

SVM - Specified/actual comparison

Purpose: (Note that this option is not available on model year 2015 and newer A3 vehicles -- see SVM - *Check vehicle configuration*, below, for A3 information).

- By comparing the current vehicle data with the stored server data, a specified/actual comparison ensures that all control units that are installed in the vehicle have the same part numbers, software versions, coding, and parameter data that were last recorded. If any discrepancies are found, SVM displays a notification.
- Specified/actual comparison does not suggest software updates; it only looks for the last recorded hardware/software part numbers and last recorded software versions.

How it works:

- When a specified/actual comparison is performed, the actual part numbers and actual software versions in the vehicle (the “actual” data) are sent to the servers. This “actual” data is compared to the “specified” data stored for the vehicle in the CARPORT database.
- The specified/actual comparison will document any changes that have been made to a control unit’s hardware part numbers and software versions, if they are valid supersessions. It will also inform the user if the changes are accepted or rejected.
- When a new control unit is installed, the specified/actual comparison calculates the coding and new parameter data set. If a “hardware change suggestion” is given, a conflict exists within the vehicle reference for the control unit (SVM expects a different part number or software version).

Additional Information:

- SVM will not allow a new control unit to be installed if it has an older version of the software, even if the control unit has the same hardware/software part numbers. In this case, SVM will suggest a hardware change, and a CARPORT reference must be manually set by an Audi Product Support Engineer but only if an SVM code for software update is available after the reference is manually updated. (In such cases, contact TAC for assistance).
- If any hardware changes are suggested as a result of an SVM code being executed, a new vehicle reference will *not* be set in the CARPORT database (in order to prevent any bad data from being documented). As a result, repeat coding and/or parameterization suggestions may be given with all subsequent SVM communications. It is recommended that all hardware change suggestions be resolved *before* any SVM codes are entered. Once the hardware change issue is resolved, the SVM code must be run again in order to set the reference. This process is complete when a message appears explaining that no further actions are needed.

SVM - Check vehicle configuration

Purpose: (Note that this option is only available on model year 2015 and newer A3 vehicles -- see SVM - *Specified/actual comparison*, above, for other vehicles).

- This function ensures that all control units that are installed in the vehicle have the correct part numbers, software versions, coding, parameter data, and adaptation values by comparing the current vehicle data with the stored server data.
- Check vehicle configuration does not suggest software updates; it only looks for the last recorded hardware/software part numbers, last recorded software versions, and performs all necessary adaptations.

How it works: The functionality is the same as that of a specified/actual comparison (see above), but there are separate communications from each control module, rather than one communication from the entire vehicle.

Additional Information:

- When a new control unit is installed, this function calculates the coding, the new parameter data set, and any applicable adaptations required for the control unit. (Not all control units will support the setting of adaptations in SVM; ensure that the proper GFF replacement test plan is followed).
- If only one control unit is being replaced, it is possible to check the configuration of that unit only by performing **SVM - Check module configuration**, which can be found under the Control Modules tab in ODIS.

SVM – communication checking

Purpose: This function tests the communication of the VAS tester to the SVM server in Germany.

How it works: The VAS tester performs a quick check to see if the SVM server can be reached.

Additional Information: If an issue is found, check all connections to ensure that the tester has a sufficient internet connection. Check with IT to make sure that the tester can reach the internet. If the issue appears to be unrelated to the dealer IT infrastructure, call tester support.

¹ Parameterization (or parameter data) is data that is written into the control unit by SVM that configures the software functionality for the specific vehicle or country of operation. To ensure proper function of the control unit, it is critical that parameterization is executed when it is suggested by SVM. Not all control units support parameterization by SVM. Parameter data may be referred to as “calibration data”.

Production Solution

Not applicable.

Service

1. Before beginning the SVM code update, check the system for DTCs that are not related to the update. If unrelated DTCs are found, resolve them before proceeding. If that is not possible, write down the DTCs (to investigate later) because they may be erased during the update.



Tip: Sporadic communication DTCs will be created during the flash procedure and will be automatically erased along with all other pre-existing sporadic DTCs at the end of the SVM test plan.

2. Check the vehicle for evidence of a tuned ECM or TCM (A tuned control module has been modified to perform outside of the normal parameters and specifications approved by Audi of America). If evidence of tuning is found, do not proceed with any procedure that updates ECM or TCM programming until the following are completed:

- The vehicle owner must be notified that the vehicle was found to have been tuned.
- The vehicle owner must be notified that any damage caused by the tuning (including adverse emissions consequences) will not be covered by Audi of America warranties. If tuned control units are updated, they may become unusable and require replacement.
- The vehicle owner must provide written consent (see attached Control Module Tuning Form) for any requested repair (whether or not it is under warranty) that requires flashing that will automatically overwrite the tuned program.



Tip: Any programming update could overwrite any tuned ECM or TCM programming.

3. Confirm that the TSB being used for the update applies to the customer complaint, and perform only those operations explicitly stated in the TSB.
4. Ensure that the person operating the VAS tester has a valid GeKo user ID and password, and that no more than one active tester session with this user ID is in progress.
5. Verify that all of the following requirements are met:
 - The tester is VAS 5051B, VAS 5052A, VAS 6150(A/B/C), or VAS 6160 with the latest ODIS base and brand updates installed.
 - The tester must be plugged into an 110V AC power supply at all times.
 - The tester must be plugged into the local network via a LAN Ethernet cable. (It is possible to connect via Wi-Fi with the VAS 6150 and 6160 testers, but a Wi-Fi connection is not recommended due to the possibility of signal drop-outs).
 - The VAS 5054A transmitter *must be connected* with a USB cable to the tester. The Bluetooth connection *must be disabled* in the Windows system tray. If the Bluetooth connection is not disabled, Windows will default to using Bluetooth even though the cable is connected.
 - Ensure that the Windows power-saving settings are all disabled on the VAS tester (including Bluetooth power-saving). This requirement is especially important during an SVM software update in which the 110V AC power supply is interrupted. If power-saving settings are on, the VAS tester may shut down during the SVM software update. (Refer to service circular AVT-12-02 VAS Diagnostic Devices - Recommended Windows® Settings for more information.)



Note:

If the Windows screensaver activates during a control module software update and the hard drive shuts down as a result of the power settings, a control module failure may result. (Refer to service circular AVT-12-02 VAS Diagnostic Devices - Recommended Windows® Settings for more information.)



Note:

Do *not* use a VAS 6017B K-line adapter while using SVM. Doing so may result in complete control module failure if an SVM code for software update is being performed.

- Ensure that the battery has a minimum no-load charge of 12.5V.
- Ensure that the vehicle is connected to an approved battery charger. Do not use a battery maintainer and do not use a trickle charger, as they might not supply enough current.
- The vehicle infotainment system and all other accessories should be switched off. If necessary, turn off the LED daytime running lights (by using the MMI menu or, on older models, by applying the parking brake).

6. Ensure that communication can be established with the control unit. If communication cannot be established, make the appropriate repairs before attempting SVM. If the tester cannot communicate with a module, the tester cannot flash software onto the module.
7. If the vehicle does not have a physical ignition switch for the key, turn on the hazard lights in order to keep the vehicle CAN bus system awake (to prevent the vehicle from automatically shutting down after 30 minutes).
8. On the main ODIS screen, select **Flash** (unless otherwise directed by the bulletin or by TAC) (Figure 3). This is the quickest way to execute an SVM code.

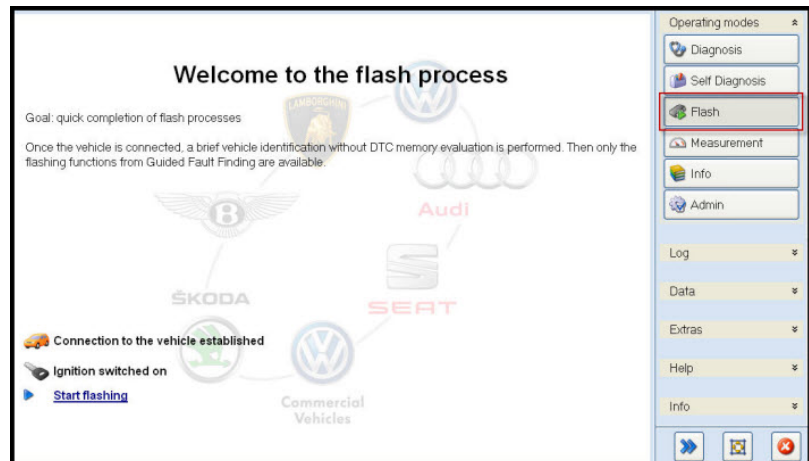


Figure 3. Selecting the Flash option in ODIS.

9. Follow the SVM update procedure, and enter the SVM code when prompted.



Tip: If the latest ODIS update is not installed on the tester, the SVM code may fail and return the following error message: "ASAM-MCD base system error".

10. When prompted, Enter a valid GeKo ID. Data will be transmitted to the SVM server, and the server will respond with instructions to continue (see detailed descriptions in the *Response Codes* table below). The response may include one or more of the following instructions, and the instructions may apply to one or more control modules (as specified in the bulletin):

- Update a control module (flash).
- Code a control module.
- Parameterize a control module.
- Check hardware of a control module.



Tip: A hardware change suggestion occurs when SVM does not recognize the control unit as being valid for the vehicle (there is a conflict between the specified and actual hardware part numbers or software versions). If there is no DTC stored for the control unit:

- First, ensure that the correct part number is installed.
- Next, check for an applicable bulletin with an SVM XCHG code.
- Finally, if the part number is correct and an applicable SVM XCHG code bulletin cannot be found, contact TAC (before contacting TAC, read the Technical Assistance Center Contact Requirements listed in the

Additional Information section of this bulletin).



Tip: With MMI control units, it is possible that the SVM code for feedback documentation was not performed after an update CD was used. Report all MMI issues to TAC before attempting repairs.

11. Continue until the following text is displayed: "Vehicle conversion/update has been successfully performed. The changes have been stored in the system. Thank you."



Tip: The SVM process must be completed in its entirety in order for the database to receive the update confirmation response. Warranty claims might not be reimbursed if there is no confirmation response to support the claim or if action was taken outside of what was stated in the TSB.

12. Verify that all steps in the TSB have been completed, then finish the test plan and exit GFF. Answer the Warranty questions and print or save the diagnostic log when prompted.



Tip: During the flash procedure, an estimated time is shown. This value is not used for actual SRT calculation.

Basic SVM Response Codes

SVM can provide a response code with a repair suggestion or after a successful repair. The response code will appear in the diagnostic log.

Code	Description	Action to be taken
ERP0031I*	The SVM Code for MMI was successfully processed but a coding or parameterization of a control unit may still need to be performed.	Perform an SVM Specified/Actual comparison and carry out the coding or parameterization suggestion, if not already prompted. If the parameterization fails, check to ensure that the part is correct for the vehicle. If the part is correct for the vehicle, contact TAC.
ERP0032I*	The control unit(s) to be updated does not match the requirements for the SVM code for MMI.	The control unit installed in the vehicle is not part of the SVM code for MMI, the control module installed on the vehicle is not talking on the CAN bus, or a replacement part is older than the original part. Ensure that the correct SVM Code was entered, ensure that the TSB applies to the vehicle, and check the hardware to ensure it is correct for the vehicle. Perform a hard reset on the module and retry the SVM code. If the hardware/software levels of the replacement part are older than the original part, contact TAC. A new CARPORT reference may need to be created in the SVM system.
ERP0033I* ERP0042I ERP0044I ERP0046I	Additional coding, parameterization, or a software update may need to be carried out as a result of the SVM code.	Follow the software update, new coding, or parameterization suggestion.
ERP0034I*	A hardware change	A control unit installed on the vehicle is not correct for the vehicle for

Technical Service Bulletin



ERP0045I ERP0048I	suggestion from an SVM Code or SVM Specified/Actual comparison.	one of the following reasons: the control unit is incorrect for the vehicle (compare results of ETKA FI Search versus Part Number search) or the control unit is older than the original part installed on the vehicle (old stock service part). Additionally, it is possible that a software update from a CD was performed on the MMI system without the proper SVM Code being executed after the update. If the part is confirmed to be newer than the original part, it is possible that the part being installed can be missing from the SVM system. If this is the case, then a hardware change will be suggested since the part is not known to the system. If this occurs, please contact TAC so the SVM system can be updated.
ERP0038I	The updates to the target control unit(s) were completed but additional actions are necessary for other control units not featured in the SVM code for MMI.	Carry out the SVM suggested actions for the other control units that were not featured in the SVM code for MMI.
ERP0039I* ERP0040I ERP0050I	The SVM Code performed successfully.	All necessary actions taken by the SVM code were performed successfully. Nothing additional is required.
ERP0041I	The SVM Code performed successfully but there are still repair suggestions to other Control Units not featured in the SVM Code update.	Perform an SVM Specified/Actual comparison and carry out the coding or parameterization suggestion, if not already prompted. If the parameterization fails, check to ensure that the part is correct for the vehicle. If the part is correct for the vehicle, then contact TAC.
ERP0043I	Additional coding and/or parameterization needs to be performed.	Follow the new coding or parameterization suggestion.

* The response code is specific to an SVM code that affects the MMI system (i.e., when an SVM code is performed after an MMI CD update, these response codes are returned).

Warranty

This TSB is informational only and not applicable to any Audi warranty.

Additional Information

Checking for Internet Connectivity

To carry out an SVM communication test, first go to the main ODIS start screen and navigate to (Figure 4): *Extras >> Connection test >> AUDI >> SVMService >> Start.*

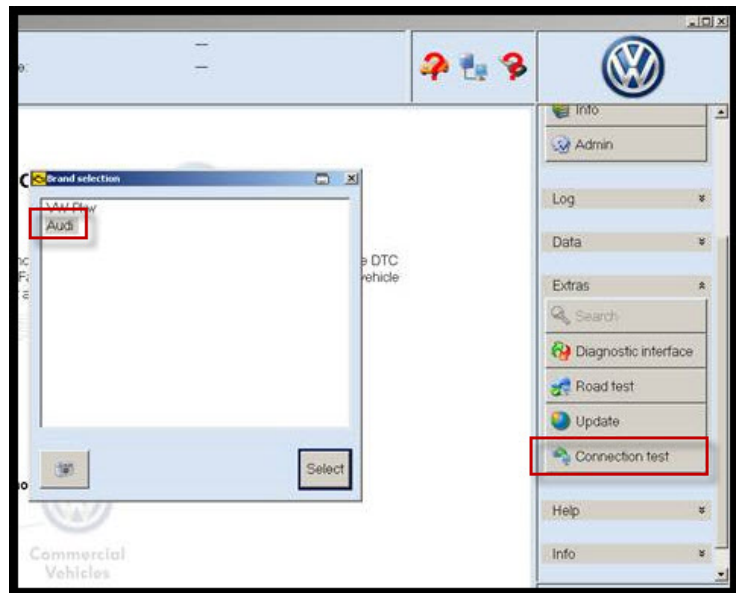


Figure 4. ODIS Connection test

Next, input a GeKo ID and verify the response:

- Green Checkmark = Good Connection
- Red X = Bad Connection

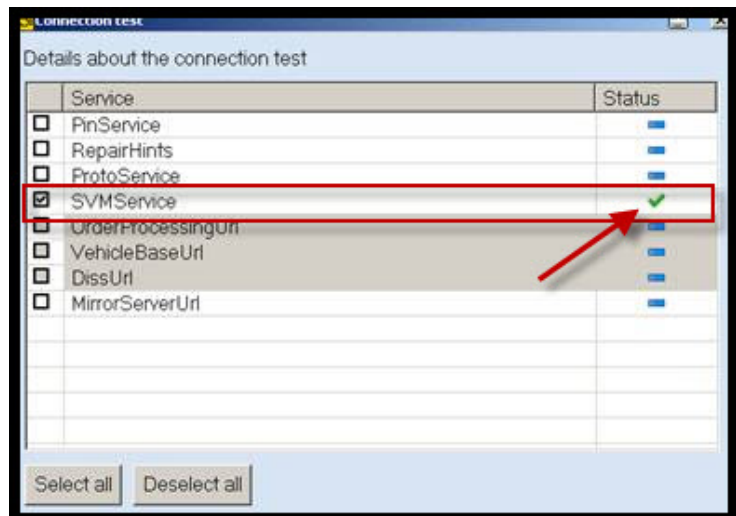


Figure 4. SVM Service Check

GeKo Registration and ID Check

To obtain a GeKo user ID and password:

- Follow the instructions in the GeKo ID Request form found at: → www.audi.techliterature.com >> *Service >> Documents >> Service and Repair >> GeKo ID Request Form* (located on the 2nd page listing)

To check your GeKo ID:

- Perform the following test from the tester startup screen with the tester connected to the internet:
Administration >> Network Settings >> GeKo Test

Testing the SVM Connection

SVM Communication checking:

- Enter a user ID and password. If the test fails, change the port, cord, and/or tester and run the test again.

Additional Tester Assistance

If any of the listed troubleshooting procedures and/or checks result in errors or if further assistance is required, follow these steps:

1. Review the information contained in the *Function Description* button in the tester at the point of the error.
2. Report the problem to the shop network administrator for further investigation.
3. Contact the responsible support team for further assistance:
 - **Service Department Applications** (GeKo, ElsaPro, and ServiceNet): 866-892-3375.
 - **VAS Tester Software Subscriptions:** Orders need to be placed via → www.audi.techliterature.com
 - **VAS Tester Software Support:** 888-896-1298.

Technical Assistance Center Contact Requirements

Contact TAC (via the Technical Assistance Contact system in ElsaPro) for cases in which a technical issue with the vehicle or with the response from the SVM system exists. Include the following information in the ticket:

- SVM Action Code attempted.
- Control module(s) and address word(s) that are in question.
- The *complete* diagnostic log from the GFF session.

All parts and service references provided in this TSB (2011732) are subject to change and/or removal. Always check with your Parts Dept. and service manuals for the latest information.