Handbook for *Porsche Diagnostic VCI*

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After Sales Diagnose / VAT3

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Date: 08.10.2008
Last changes: P. Döbler
File: Handbook_Porsche_VCI_de_DE.doc
Version: 1.0
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Content

1 Description of Hardware

In this section, all the components included in the scope of delivery of the VCI will be described, as well as the meaning of the LEDs.

The individual components of the diagnostic VCI are:

- 1 x VCI
- 1 x USB cable

Fig. 1 USB connector

- 1 x OBDII cable

Fig. 2 OBDII connector

- 1 x Loopback connector for self-diagnosis

Fig. 3 Loopback connector

- 1 x adapter for older vehicles

Fig. 4 Adapter for older vehicles

1.1 Meaning of LEDs

The illustration below shows the front view of the VCI. The function of the individual LEDs is described in detail in Table 1.

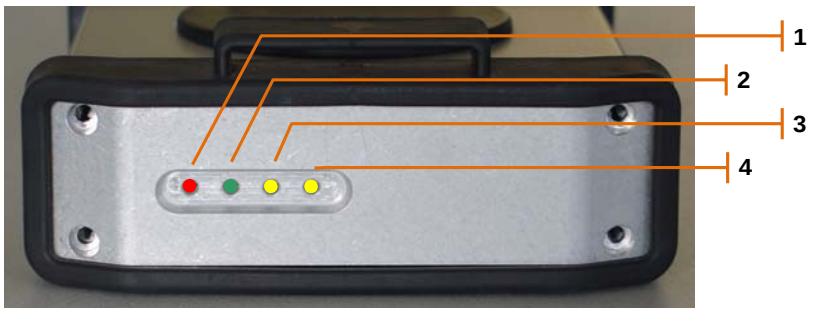

Fig. 5 VCI front view

Item	Description	Colour	Status	Function
1	Status LED	Red	Off	Normal function
			On	Malfunction/repair necessary
2	Power LED	Green	Flashes (1Hz)	Normal function
			Off/On	VCI firmware no longer running Malfunction/repair necessary
3	USB LED	Yellow	Off	USB cable not connected
			Lights up briefly	When USB cable is connected
			Lights up	From first USB data communication
4	wLAN LED	Yellow	Off	No access point nearby – not logged in
			Flashes rapidly at intervals	Access point search
			Flashes rapidly at intervals	Access point found – login phase
			Lights up	Access point found – logged in
			Flashes at high frequency	VCI firmware cannot be started - Malfunction/repair necessary

Table 1 Meaning of LEDs

1.2 VCI connections

The rear of the device features two HRS sockets for connecting the VCI to the PC and to the vehicle respectively.

Incorrect connection is not possible as the sockets have different numbers of pins.

The USB cable is connected on the left and the OBD on the right. For this purpose, the connector must be turned slightly to the right so that the connector latch engages, preventing accidental disconnection.

Fig. 6 VCI rear view

1.3 wLAN cover

Fig 7 shows the top view of the VCI. The wLAN antenna is located under the cover designated as item 2.

The VCI also features two attachment tabs designated as items 1 and 3. The device can be attached e.g. to the vehicle rear-view mirror by means of these tabs.

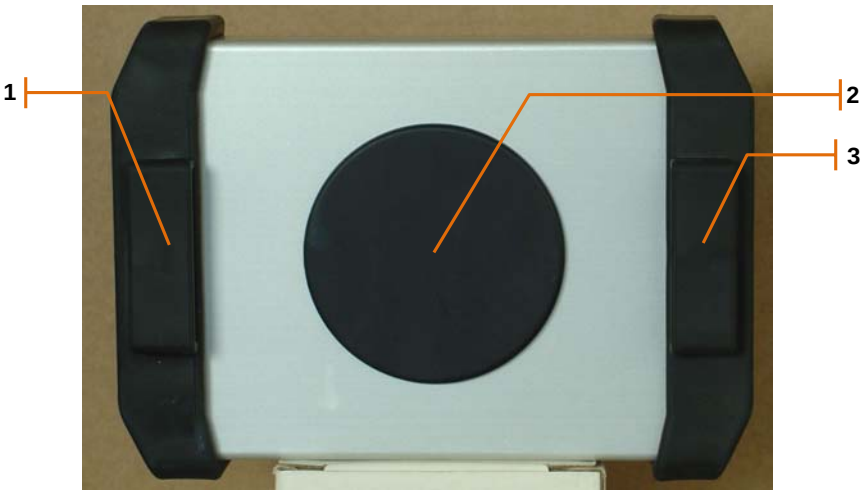

Fig. 7 VCI top view

2 Initial Operation

This section describes the necessary steps for initial operation of the VCI with the tester.

The tester can be connected to the VCI via USB, or optionally via wLAN.

In order to operate the VCI, the OBD cable (see Fig. 2) must first be connected to the vehicle and to the device. Power supply is provided exclusively from the vehicle and is indispensible for operation of the device.

2.1 Connection via USB

Connect the VCI to the PC using the supplied USB cable (see Fig. 1).

The VCI is automatically detected by the tester and can be used immediately without further configuration.

2.2 Connection via wLAN

A prerequisite for using wLAN is availability of the suitable infrastructure. The workshop safety guidelines must also permit the use of radio networks.

Connect the VCI to the PC using the supplied USB cable and start the VCI configuration software.

This can be accessed via the relevant link the basic software.

The necessary setup steps are described separately in the section entitled *wLAN Configuration*.

In order to establish a wLAN connection, the USB connection must be detached once configuration has been successfully completed.

This is because once established, the USB connection is always active.

3 VCI configuration

Immediately after the application starts, the system searches for any devices connected to the USB bus; generally only one VCI can be used with the tester.

The situations listed in Table 2 below may then occur.

Situation	Required action
No VCI detected	A dialog instructs the user to connect the VCI to the tester via USB and then press the "*Find VCI*" button.
Exactly 1 VCI detected	The information is read out from the VCI and displayed as appropriate (see Fig. 2.1). Only in this case will the wLAN configuration input fields be enabled for editing.
More than 1 VCI detected	A dialog instructs the user to connect only one VCI and then press the "*Find VCI*" button.

Table 2 Hardware detection

Following successful initialisation, a user interface like the one shown in Fig. 8 is displayed. The individual elements of the GUI are described in detail in the sections below.

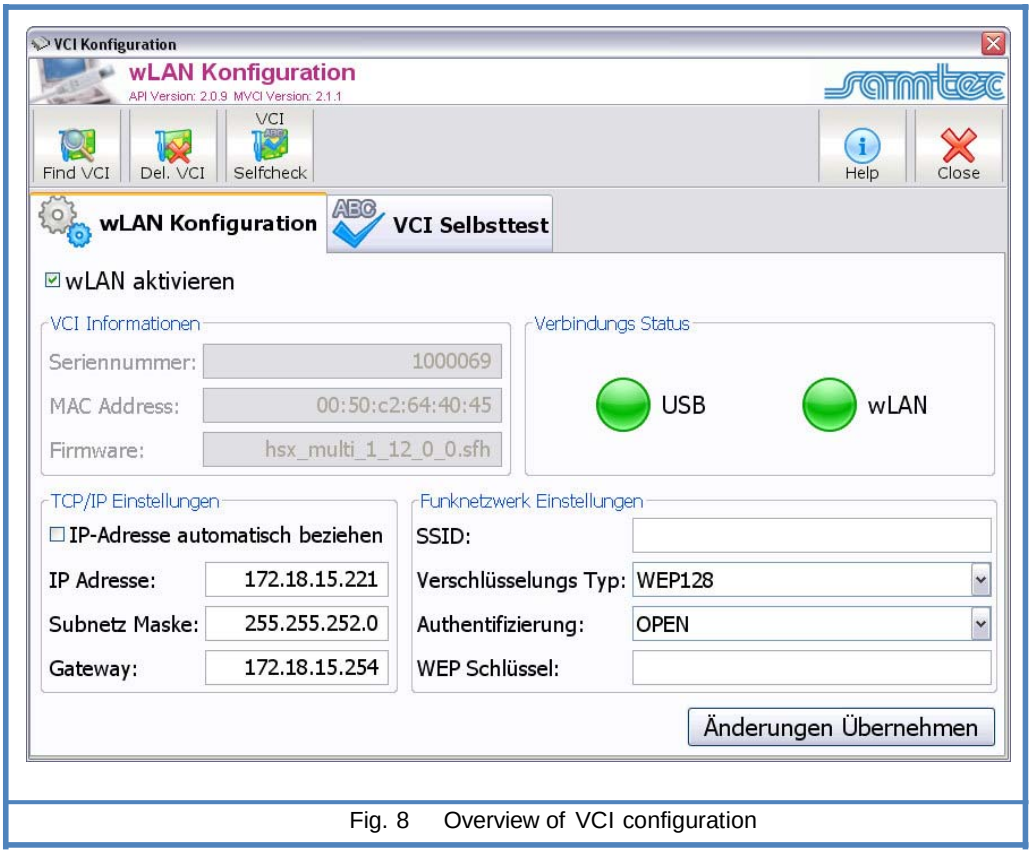

Fig. 8 Overview of VCI configuration

3.1 Toolbar functions

The functions of the buttons in the toolbar are listed in the following table.

Button	Function
Find VCI	Starts the device search and finds all VCIs connected to the PC via USB.
Del. VCI	Removes the VCI from the configuration. The VCI can no longer be accessed by the tester via wLAN.
VCI Selfcheck	Starts the selfcheck. (refer to section *VCI selfcheck*)
Help	Starts the online help.
Close	Saves all changes and closes the application.

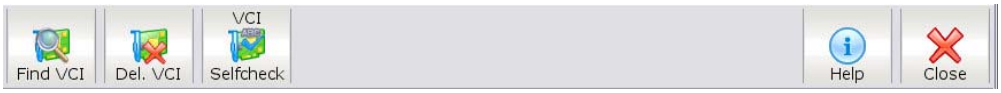

Table 3 Device search

3.2 wLAN configuration

Here, all necessary settings can be made for configuration of a wireless LAN (wLAN) connection.

The wLAN in the VCI is switched on or off via the *"Activate wLAN"* checkbox.

Changes to the settings are written to the VCI by pressing the *"Accept changes"* button. In addition, all wLAN settings are saved when the application is closed. The tester can use the VCI via wLAN with immediate effect.

The user interface is divided into various areas, the functions of which are described below.

3.2.1 VCI information area

This area is used exclusively for the display of information with which the VCI can be unambiguously identified. This includes the serial number, the MAC address and the currently loaded firmware. These fields are read-only and cannot be edited.

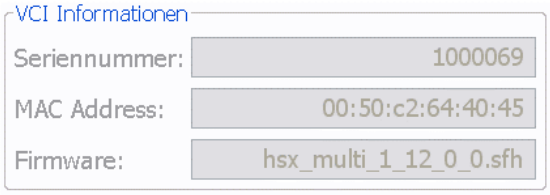

Fig. 9 VCI information area

3.2.2 VCI connection status area

The GUI contains a graphic traffic light component, by means of which the VCI connection status is displayed. There is one display for the USB connection and one for the wLAN connection.

As soon as the VCI is accessible via a medium, the relevant component is displayed in green. If no connection is established, the display is red.

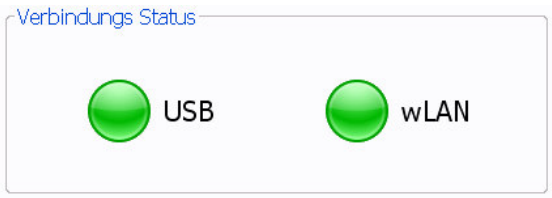

Fig. 10 Connection status

New wLAN settings usually only take effect after several seconds.

3.2.3 TCP/IP setting area

Here, the values for the *IP address*, *subnet mask* and *gateway* can be set, which are to be used by the VCI for wireless communication.

When using a DHCP server, the *"Obtain IP address automatically"* checkbox can be activated. In this case, the VCI obtains this information automatically when logging on to the network and no further manual settings are necessary in this area.

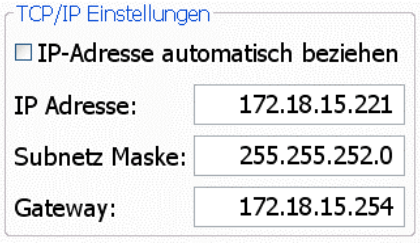

Fig. 11 TCP/IP settings area

3.2.4 Radio network settings area

All the security-related settings for the radio network must be made here. This includes entry of the network name (*SSID*), which has a maximum length of 32 characters, as well as selection of the type of data encryption.

The desired type of encryption must be selected via the "*Type of encryption*" drop-down list. All the available types of encryption are outlined in the sections below. The default setting is *WPA_LEAP*.

3.2.4.1 No encryption

In this case, the data is transmitted unencrypted and can be intercepted by third parties. This setting should never be selected.

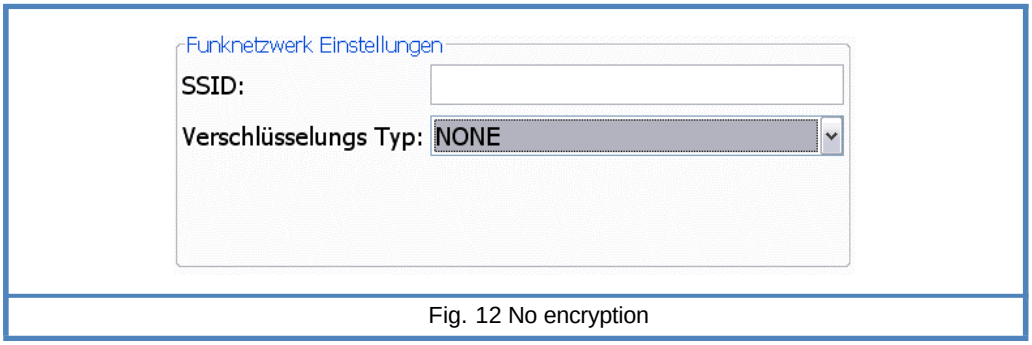

Fig. 12 No encryption

3.2.4.2 WEP128 encryption

The encryption algorithm selected here is *WEP128* (Wired Equivalent Privacy). Required settings are the type of authentication and the WEP key.

The possible *Authentication* settings are:

- The *WEP key* to be used for AUTO (default)
- OPEN (recommended)
- SHARED

encryption must have a length of exactly 26 characters (13 hexadecimal values).

Permitted values are:

- Numbers from 0 to 9
- Lower-case letters from a to f
- Upper-case letters from A to F.

E.g. 0102030405060708090A0B0C0D would be a permissible value.

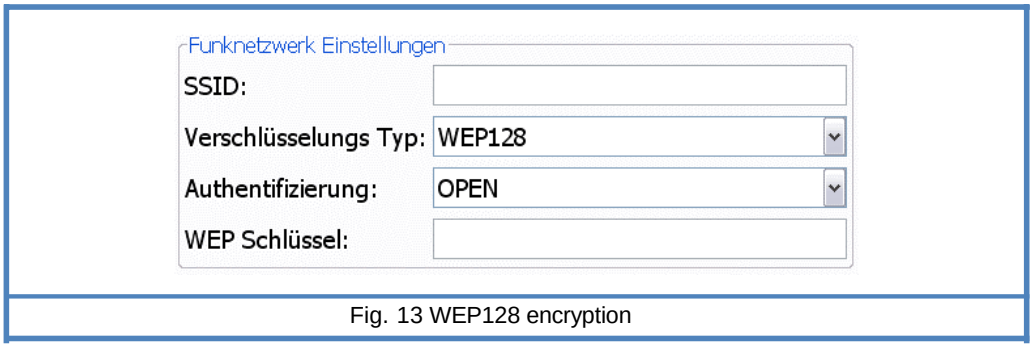

Fig. 13 WEP128 encryption

3.2.4.3 WPA PSK encryption

The WPA (Wi-Fi Protected Access) encryption method is significantly more secure than WEP128 and is therefore preferable.

The Pre-Shared Key (*PSK*) is used for encryption. This has a maximum length of 64 characters.

This maximum length should always be used in order to ensure a particularly secure key. Moreover, it should comprise an arbitrary combination of numbers, upper-case and lower-case letters, as well as special characters.

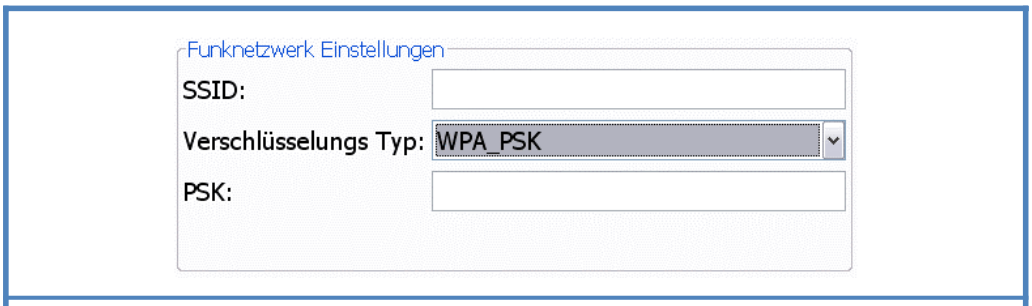

Fig. 14 WPA PSK encryption

3.2.4.4 WPA LEAP encryption

WPA LEAP (Lightweight Extensible Authentication Protocol) is a special version of EAP developed by Cisco Systems.

A p*assword* and *user name* must be entered for authentication. Both of these have a maximum length of 63 characters and may comprise a freely-selectable sequence of numbers, upper-case and lower-case letters, as well as special characters.

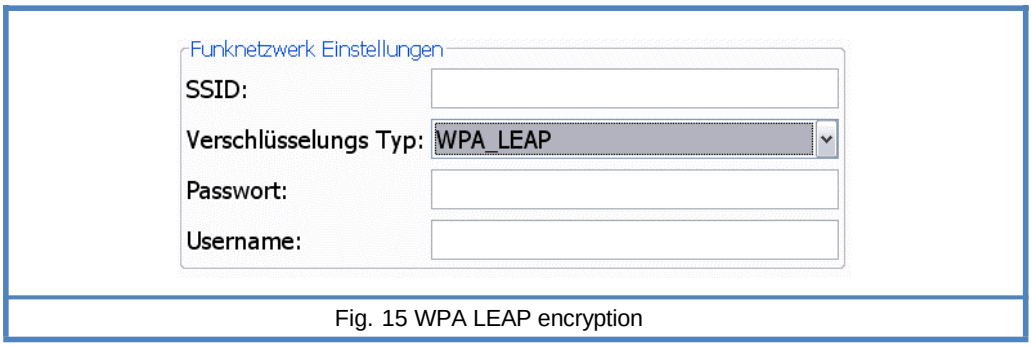

Fig. 15 WPA LEAP encryption

3.2.4.5 TKIP encryption

TKIP (Temporal Key Integrity Protocol) encryption is similar to WEP128 encryption; here, the *Authentication* must also be selected and a *WEP key* entered. The same conditions as in the case of WEP apply for this purpose (see section 3.2.4.2)

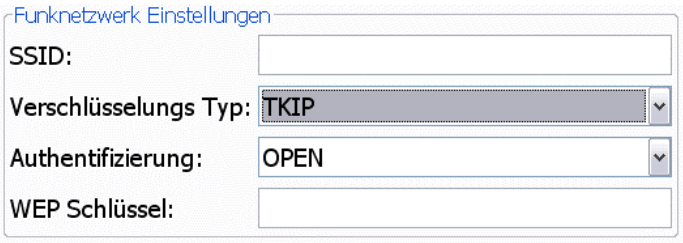

Fig. 16 TKIP encryption

3.3 VCI selfcheck

In this area, the selfcheck for the VCI can be performed. The connection to the VCI is checked, as are consistency of the software etc. In addition, a check of the diagnostic cable and all outputs of the VCI is performed. A typical log is shown in Fig. 17.

In the event of errors, the relevant information and instructions on how to remedy the error are output.

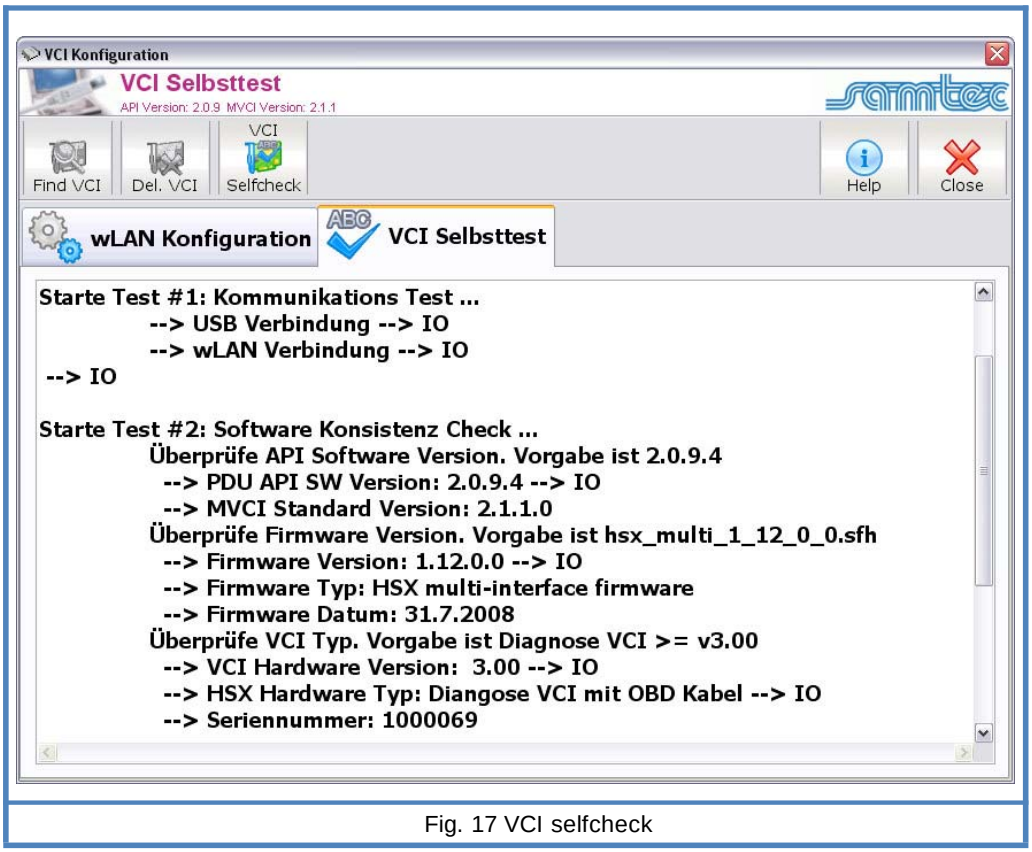

Fig. 17 VCI selfcheck

3.3.1 Performing the selfcheck

The selfcheck is started via the "*VCI Selfcheck*" button.

Immediately after starting, a dialog appears requesting you to connect the supplied loopback connector to the OBD cable. This dialog must be confirmed with OK, otherwise the check cannot be performed correctly.

After completion of the check, another prompt appears requesting you to disconnect the loopback connector.

The result of the selfcheck is saved under C:\UserData\samtec\log\ in the file VCISelftestResult.txt.