A·B·R·I·T·E·S
automotive solutions

ABRITES CAN GATEWAY

User manual
version 1.0

Important notes

The Abrites software and hardware products are developed, designed and manufactured by Abrites Ltd. During the production process we comply to all safety and quality regulations and standards, aiming at highest production quality. The Abrites hardware and software products are designed to build a coherent ecosystem, which effectively solves a wide range of vehicle-related tasks, such as:

Diagnostic scanning;
Key programming;
Module replacement,
ECU programming;
Configuration and coding.

Warranty

You, as a purchaser of Abrites hardware products, are entitled of a two-year warranty. If the hardware product you have purchased has been properly connected, and used according to its respective instructions, it should function correctly. In case the product does not function as expected, you are able to claim warranty within the stated terms. Abrites Ltd. is entitled to require evidence of the defect or malfunction, upon which the decision to repair or substitute the product shall be made.

There are certain conditions, upon which the warranty cannot be applied. The warranty shall not apply to damages and defects caused by natural disaster, misuse, improper use, unusual use, negligence, failure to observe the instructions for use issued by Abrites, modifications of the device, repair works performed by unauthorized persons. For example, when the damage of the hardware has occurred due to incompatible electricity supply, mechanical or water damage, as well as fire, flood or thunder storm, the warranty does not apply.

Each warranty claim is inspected individually by our team and the decision is based upon thorough case consideration.

Read the full hardware warranty terms on our website.

Copyright information

Safety information

The Abrites products are to be used by trained and experienced users in diagnostics and reprogramming of vehicles and equipment. The user is assumed to have a good understanding of vehicle electronic systems, as well as potential hazards while working around vehicles. There are numerous safety situations that cannot be foreseen, thus we recommend that the user read and follow all safety messages in the available manual, on all equipment they use, including vehicle manuals, as well as internal shop documents and operating procedures.

Some important points:
Block all wheels of the vehicle when testing. Be cautious when working around electricity.
Do not ignore the risk of shock from vehicle and building-level voltages.
Do not smoke, or allow sparks/flame near any part of the vehicle fuel system or batteries.
Always work in an adequately ventilated area, vehicle exhaust fumes should be directed towards the exit of the shop.
Do not use this product where fuel, fuel vapours, or other combustibles could ignite.

In case any technical difficulties occur, please contact the
Abrites Support Team by email at support@abrites.com.

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List of revisions

Date	Chapter	Description	Revision
24.06.2024	ALL	Document created.	1.0
20.09.2024	ALL	First General Update	1.1

1. Introduction

Congratulations on choosing our wonderful product!

The "Abrites CAN Gateway" is a device designed to work with AVDI, to help connect different modules on bench.

This product can synchronize CAN communication between devices with different CAN speeds. The main need for this product arises from the difficult process of connecting all parts in cars/trucks on bench.

In its first iteration, this device provides the ability for all parts of a Mercedes truck, connected to the immobilizer system, to be easily connected for various diagnostic and advanced procedures, such as virginizing, personalizing a module, and key programming.

In future iterations, this product may also be used for other functionalities if there is a need for a gateway.

In this user manual, we'll walk you through the process of connecting both AVDI and ZN181 - CAN Gateway Set, using the software and making the right connections to the electronic units you are working on.

AVDI should be used with ABRITES software produced by Abrites Ltd.

2. General Information

ZN081 CAN Gateway developed by Abrites to synchronize the CAN communication of modules with different CAN speeds. First line of development is focused on Mercedes trucks. The device works with the AVDI and Abrites Diagnostic for Mercedes Trucks software and the MN031 license and helps for the following tasks:

- Module replacement
- Read/write coding
- Setting a module to virgin state
- Personalization
- Activation
- Key programming

2.1 Related products

ZN081 CAN Gateway is a device developed to work with other connector cables and devices.

CB601 - CAN GATEWAY Connection Cable

It is used to connect the CAN Gateway to the AVDI and is sold in the ZN181 Set

CB602 - TRUCK EZS/EIS Connection Cable

It is used to connect TRUCK EZS/EIS to ZN081 - CAN GATEWAY when working on bench, and with the use of MN031 license, and is sold in the ZN0181 Set

Supported Brands, Models, Years of Production:

- Mercedes-Benz Actros
- Mercedes-Benz Arocs
- Mercedes-Benz Antos
- Mercedes-Benz Travego
- Mercedes-Benz Tourismo 3rd Generation
- Setra with IR keys

(and other models from the buses range with IR keys)

CB603 - TRUCK MCM Connection Cable

This cable is used for connecting the ZN081 - CAN GATEWAY or AVDI truck Master Control Modules (MCM) and working with them.

Supported Brands, Models, Years of Production:

- Mercedes-Benz Actros
- Mercedes-Benz Arocs
- Mercedes-Benz Antos
- Mercedes-Benz Travego
- Mercedes-Benz Tourismo 3rd Generation
- Setra with IR keys

(and other models from the buses range with IR keys)

CB604 - TRUCK TCU Connection Cable

This cable is used for connecting the ZN081 - CAN Gateway device (part of the ZN181 CAN Gateway Set) or AVDI truck Transmission Control Units/Modules (TCU/TCM) and working with them on bench.

Supported Brands, Models, Years of Production:

- Mercedes-Benz Actros
- Mercedes-Benz Arocs
- Mercedes-Benz Antos
- Mercedes-Benz Travego
- Mercedes-Benz Tourismo 3rd Generation
- Setra with IR keys

(and other models from the buses range with IR keys)

ZN084 - 24V/4A DC Power adapter

This product is compatible with ZN051 DS-BOX and ZN081 - CAN GATEWAY when working with modules that require 24V power supply.

Included in the package:

- Power Supply: Desktop, mains 80/264VAC to 24VDC
- Mains Cable: Uni-Schuko to IEC C13
- Adapter cable: DC-Jack to Banana Plugs

ZN181 CAN Gateway Set includes:
ZN081 CAN Gateway
CB601 - CAN GATEWAY Connection Cable
CB602 - TRUCK EZS/EIS Connection Cable
DC Jac adapter F 5.5x2.1 to M 5.5x2.5
Fuse - 5A

The ZN181 CAN Gateway set, together with the ZN084 24V/4A DC Power adapter, and the CB603, and CB604 give you the full capabilities of the device in its current state, and lets you work with all supporter Mercedes Trucks modules.

Below you may see a picture of the ZN181 CAN Gateway set:

3. Connections

ZN081 CAN Gateway allows you to work on bench with the Mercedes Benz Trucks immobilizer related parts. Here is how to use the ZN081 CAN Gateway:

3.1 MCM (ECU) Bench connection:

To make the required connection to the MCM unit, follow these steps:

1. Use the CB0603 Cable from the ZN081 set , to connect it to the MCM small socket
2. Connect the CB603 Cable to the ZN081 CAN Gateway (Connectors “C” or “D”)
3. Insert the 5A fuse into the dedicated socket
4. Connect the DC jack of the 24V power supply unit
5. Connect the AVDI Interface with the help of CB601 cable to the “A” connector of the CAN Gateway

Once the connections are done, you can work with the Mercedes Trucks software to complete tasks such as: read, save data, set to virgin state, and personalize the MCM unit

3.2 TCU Bench connection:

To make the required connection to the TCU unit, follow these steps:

1. Use the CB0604 Cable from the ZN081 set , to connect it to the TCU socket
2. Connect the CB604 Cable to the ZN081 CAN Gateway (Connectors “C” or “D”)
3. Insert the 5A fuse into the dedicated socket
4. Connect the DC jack of the 24V power supply unit
5. Connect the AVDI Interface with the help of CB601 cable to the “A” connector of the CAN Gateway

3.3 EZS Bench connection:

To make the required connection to the EZS unit, follow these steps:

1. Use the CB0602 Cable from the ZN081 set , to connect it to the EZS socket
2. Connect the CB602 Cable to the ZN081 CAN Gateway connector “B”.
3. Insert the 5A fuse into the dedicated socket
4. Connect the DC jack of the 24V power supply unit
5. Connect the AVDI Interface with the help of CB601 cable to the “A” connector of the CAN Gateway