

ABRITES DIAGNOSTICS FOR NISSAN/INFINITI





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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.

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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
24.06.2009		Initial version of the document.	2.0
01.06.2013	ALL	Revised, updated, renewed	4.2
02.03.2014	ALL	Revised, updated, renewed; design up- date; structural and contentchanges	4.3
02.10.2015	ALL	Revised, updated, renewed	4.4
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29.09.2022	ALL	Full Manual Revision	4.6

1. Introduction

ABRITES Diagnostics for Nissan/Infiniti" is a professional diagnostic software, which works together with the Abrites Vehicle Diagnostic Interface (AVDI).

In order to operate, the software requires you to have an AVDI interface, a Windows based PC with Windows 7 or later version of the Windows OS. For optimal operation, it is always recommended to have the latest software version installed, active AMS, and a stable Internet connection.

The tool's purpose is to allow you to perform standard and advanced vehicle diagnostics, starting with module identification, reading and clearing diagnostic trouble codes (DTCs), live data monitoring, actuator testing, as well as advanced operations such as service functionality and other special functions.

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

ABRITES is a trade mark of Abrites Ltd.

2. Abrites Diagnostics for Nissan/Infinity

When you open the Abrites Quick Start menu, you need to fined Nissan logo and click it, and it will open the page that you see on the first sceenshot below. Once the first Nissan/Infinity icon is selected from the Abrites Quick start menu the software will start and you will see the screen from the second screensot below:



▾

Detect

Exit

The ABRITES Diagnostics for Nissan/Infinity consists of two parts:

Standard diagnostic functions like reading/clearing diagnostic trouble codes (DTC), scanning available devices in the vehicle, displaying actual values (measured parameters), performing actuator tests etc. **Special functions** like Key Learning, Memory Manager, and PIN calculator

All devices, which are present in the car are listed in the main screen of the ABRITES Diagnostics for Nissan/ Infinity. If you want to connect to a specific device, please double click on it or select it ant press the "Open" button. The "ABRITES Diagnostics for Nissan/Infinity will try to connect to the device. From this screen you have the option to selec the vehicle in order to complete full vehicle scan, select the special function menu, or set some options and language.

ŧ	All Units	Protocol	DTC	•
1	ENGINE			
2	ABS			Previous
3	INSTRUMENT CLUSTER			Freviou
4	ВСМ			
5	AIRBAG			6
7	INTELIGENT CRUISE CONTROL (ADAS)			Open
в	HEATING VENTILATING AND AIR CONDITIONING			
9	TRANSMISSION			
10	MULTI AV			Next
13	EASY HILL SYSTEM/PARKING BRAKE			
16	MOTOR CONTROL			•
🚘 V	ehide Selection			
Curr	ent context			83
N		<i></i>	V	Options
<	ALL > Scan for Units	Clear all DTCs	Filter	
~	ALL >			

From the first screen you can select the vehicle you are working with, do a Scan for Units (and DTCs) and Clear DTCs. Also, a sub-menu with options is available from this screen. (The modules may vary according to the vehicle specifications.)

The second screen shows the available **Special Functions** in the Abrites Nissan/Infinity software.

A ABRI	A ABRITES Diagnostics for Nissan/Infiniti 5.7				www.ab	orites.com —		
#	Scanned Units f	or QASH	QAI J11			Protocol	DTC	_
1	ENGINE					CAN	46	
3	INSTRUMENT CLUS	TER				CAN	2	Previous
								\$
								Open
								Next
								(¥=
								Options
P	Scan for Units	<i>></i>	Clear all DTCs	a	Vehicle Selection	î:	Special Functions	Exit

A ABRIT	ES Diagnostics for Nissan/Infiniti 5.7	www.abrites.co	om —	×
#	All Units	Protocol	DTC	
				Previous
				Open
				Next
Veh	ide Selection 👫 Special Functions			
Key Le	arning PIN Tool EEPROM NATS2/5		Open	Options
				Exit

2.1 Standard diagnostic functionalities

The "ABRITES diagnostics for Nissan/Infinity" provides the options for detailed module identification, reading and clearing of diagnostic trouble codes (DTC), monitor live data, actuator tests for Nissan/Infinity vehicles. Diagnostics is performed via the OBD-II connector.

There is an option to read and clear all DTCs or individually clearing them when entering the appropriate electronic module.

The "Standard diagnostic functions" of the software include three separate diagnostic protocols (K-line, CAN and UDS). This provides all the versatility that you may need from a tool. Using these three protocols allows you to work on almost all the cars produced by Nissan/Infiniti due to the fact that the manufacturer often combines various modules using different communication protocols in one vehicle.

The Abrites Vehicle Diagnostics for Nissan/Infiniti is a very strong diagnostic tool, aimed at professionals looking for a multipurpose divece that fulfills all their needs in one place.

All Abrites diagnostic software applications provide an unmatched, dealer level diagnostics, previously available to the OEM services only.

In order to perform module identification you need to select and double-click the module from the main diagnostic screen and a new screen with the available options appear. The first option will be the identification on the selected electronic module. You can choose the "Read DTCs" option to see all the diagnostic trouble codes for the module and you can press the "Clear DTCs" button to remove the temporary or resolved trouble codes. This procedure applies to the selected module. In case you would like to clear all the DTCs from the vehicle's modules, press the "Clear All DTCs" button from the main screen.

ENGINE		×
Establishing diagnostic session w Diagnostic channel is open - High	ith the selected unit Speed CAN bus on OBD pin 6 & 14.	^
electronic control unit id	entification	
MPR REFERENCE SUPPLIER ELECTRONIC VERSION VDIAG NUMBER Software Version PROGRAM NUMBER CALIBRATION NUMBER VIN CODE CYLINDER 1 INJECTOR CODE CYLINDER 2 INJECTOR CODE CYLINDER 3 INJECTOR CODE	: 23701HX47B : Robert Bosch GmbH, VAT ID No DE811128135, S : 237106319R : F1 : 7200 : 170B : 8180 : SJNFDAJ1101543524 : AAIPBA8 : 8113AIB : 8113AIB : 8111E1E	applier
CYLINDER 4 INJECTOR CODE	: BLAIS5D Data Display Actuator Tests Other Urite log Write log	> Close

ENGINE		×
D2452.	CRNT PARTICLE FILTER DIFFERENTIAL PRESS.SENSOR CIRC.	^
F2452.	CRNT	
P2681:	COOLANT CIRC SWITCHING S/V	
	CRNT	
U0121:	MLTIPLXD TRACTION CNTRL CONN	
	CRNT	
U0315:	VEHICLE SPEED	
	CRNT	
P060A:	COMPUTER	
100000	CRNT FUEL SUPPLY HEATER CONTROL	
P2688:	CRNT	
	CRNI	
	46 DTCs found	
1000011	10 biob iouna	
	clear diagnostic trouble codes	
DTCs c	leared	
		~
<		>
	Clear log	
Identifica		X
Tuenulica		
	Write log	Close

When an electronic control module is selected you can also monitor live data values. This allows you to perform detailed diagnostics and analyze the behavior of the vehicle in real time. The values can be viewed in a list form, as well as a graph. If you would like to see the details about the vehicle in a graph you can select the graph button on the right of the screen:

Current Data		×
ALL SIGNALS		-
Data	Value	
COMP + AFTER IGNITION	PRESENT	Previous
AIR CONDITIONING AUTHORISATION	NOT DONE	
THERMOPLUNGER1 RELAY	Deactivat	
THERMOPLUNGER2 RELAY	Deactivat	Next
THERMOPLUNGER3 RELAY	Deactivat	
MOTOR	Off	
BRAKE PEDAL	PRESSED	
GEARBOX RATIO	DCLTCH	
CC/SL LMTR	Deactivat	
CRUISE CONTROL	CORRECT	Ш
DPF REGENERATION PERMIT	1.DEF	Pause
PREHEATING REL CNT	Deactivat	-
EGR FUN PROG	Yes	Graph
CLUTCH PEDAL SWITCH	ACTIVE	Show all
CRUISE CONTROL/SPEED LIMITER OPERATION	Off	×
LOW FUEL LEVEL INFORMATION	Low	✓ Exit



Actuator testing is very important when a fault within the vehicle needs to be found, the option can also be used when enabling or disabling features on the vehicle. From the list of items that is displayed when selecting the "Actuator Tests" button you can select the appropriate actuator and perform the test needed. motor is being tested.

Current Data		×
ALL		-
Data	Value	T 🕆
COOLING FAN 2		Previous
COOLING FAN 1		
EXHAUST THROTTLE		
EGR VOLUME CONTROL VALVE		Next
THROTTLE VALVE		
TURBOCHARGER BOOST PRESSURE		
COOLANT FLOW VALVE		
GLOW PLUG		
A/C COMPRESSOR		
THERMO PLUNGER		
FUEL PUMP RELAY		Run
AUTO STOP START		
FUEL PUMP		
ACTIVE GRILLE AIR SHUTTER		Show all
STARTER RELAY		×
FIRST EGR COOLING PUMP		▼ Exit

2.2 Special Functions

The software provides special diagnostic functions in order to assist the user to perform advanced diagnostics on Nissan/Infinity vehicles. This option from the main screen opens the special function menu of the ABRITES Diagnostics for Nissan/Infinity. The required special function is opened by selecting it from the menu box and double-clicking on it.

From the main screen of the software you can select the "Special functions" tab and see the available special functions:

The available special functions in ABRITES Diagnostics for Nissan/Infinity software are:

- Key Learning
- PIN Tool
- EEPROM NATS2/5 Memory Manager

A AB	RITES Diagnostics for Nissan/Infiniti 5.7	www.abrites.com	- 🗆 X
#	All Units	Protocol DTC	
			Previous
			Open
			Next
	/ehicle Selection		
Key	Learning PIN Tool EEPROM NATS2/5	Open	Options
			Exit

3. Special Function "Key learning"

This function allows you to perform key learning of Nissan vehicles with Immobilizer systems – NATS-2, NATS-4, NATS-5, NATS5+. After the vehicle is selected the PIN code must be entered, as well as the number of keys to be learned and then you need to press the "Learn keys" button. When you selec a vehicle, there is a winwod with suggestions on the right side of the window on what needs to be done for the key learning procedure for the selected vehicle.



4. Special Function "PIN Code"

The PIN Code function allows the reading or the calculation of the PIN CODE for the vehicle. It has the following options:

PIN Calculator by ICU or SEC numbers

PIN Calculator by BCM number

PIN Code extraction by OBDII

PIN Calculator by 12 digit Glovebox label

PIN Calculator by 20 digit PIN

Once you have the PIN Code you can than proceed to the key learning procedure, explained in the previous section 3. Key Learning.

ssan/Infinity PI	V code tool						
	e SEC Label Europe 1212	VICU or SEC num Pil	N Code				
BCM	PIN Calculat Number	tor by BCM numb	er Code				
12345Image: Constraint of the second sec							
PIN code (extract by DLC/	OBDII					
PIN code extract by DLC/OBDII							
Extract		PIN Calculator by 12 digit Glovebox Label					
	 N Calculator by	12 digit Glovebo	× Label				
	12312	23123123	+				
Pl Glovebox	12312	23123123	× Label tabel Calculate				
Pl Glovebox	12312	23123123	+				
PIN PIN Pre-PIN 11	12312 11021 Calcula 111 2222 333	23123123 0105890 nte 20 digit PIN	+				

5. Special Function "EEPROM NATS2/5"

This function allows you to read the Configuration data from the Nissan Anti Theft System (NATS). It will allow you to read the data, save it to a file on your computer in order to use it later, update it back to the vehicle. Here are the functionalities of the buttons explained:

When pressing the "Read" button the Data will be displayed.

The "New" button has the ability to create a new conf data file.

"Program" updates the file to the NATS system.

"Save" saves the conf data file locally on your computer.

Manager					
					New
					Read
					20
					Program
				_	Program
	I EEPROM of TMS			J	
	Read options	P. N.A.	rogram options Diagnostic	-	
ATS2 interna	Read options		rogram options		Load
ATS2 interna	Read options	N.A.	rogram options Diagnostic	•	Load
	Read options Diagnostic Start	N.A.	rogram options Diagnostic Start	•	Load

ory Manager	
	New
	ead
	Program
ptions	Coad
NAT52: Internal EEPROM of TMS NAT52: Internal EEPROM of TMS NAT54: Internal EEPROM of TMS NAT55: Internal EEPROM of TMS NAT55: Internal EEPROM of ST Read/Write Memory 23/36 + 4 bytes address + 1 byte length Read/Write Memory 23/36 + 4 bytes address + 1 byte length Read/Write Memory 23/36 + 3 bytes address + 1 byte length	<u>S</u> ave
Image: Trick Memory 23/36 + 3 bytes address + 1 byte length Johnson 31 FB/FA 00 + 4 bytes address + 1 byte length Image: Imag	<mark>0</mark> E <u>x</u> it

6. Pinouts

Here you can find the Pinouts of the NATS immobilizer modules for the cases when they need to be connected on a bench.

The version of the NATS can be determined by the label on the immobilizer unit itself.

6.1 NATS 2 Siemens:

Immobilizer version: 5WK4593, 5WK4640, 5WK46472, 5WK4825, 5WK48642



6.2 NATS 4 Siemens:

Immobilizer version: 5WK4738, 5WK4750, 5WK4803, 5WK48543A, 5WK48543B, 5WK48692.

Vehicle models:

- NISSAN Micra MY 1998-2000
- NISSAN Primera MY 2000-2003
- NISSAN Almera MY 1998-2000

Below you may find the pinout of the AVDI



AN001 – Base Interface OBDII Male Cable	NATS – 4
Pin 7	Pin 1
Pin 4	Pin 4
Pin 16	Pin 8
	Switch between Pin 7 and Pin 8 for Ignition ON/OFF



6.3 NATS-5, NATS-5+ Siemens:

Immobilizer version: 5WK48041, 5WK48042, 5WK48042, 5WK48643, 5WK48643, 5WK48644, 5WK48644.

A full list of supported models can be found at <u>abrites.com</u>.



AN001 – Base Interface OBDII Male Cable	NATS – 5, 5+
Pin 7	Pin 1
Pin 4	Pin 4
Pin 16	Pin 8
	Switch between Pin 7 and Pin 8 for Ignition ON/OFF

7. ESL emulator (EM002)

The Abrites EM002 emulator for Renault/Nissan supports all ESL types (old 6 pins (Renault), new 6 pins (Renault), 8 pins (Nissan).

7.1 OLD type ESL diagram (Renault):

Connection to old ESL :

- 1 BLACK (-)
- 2 RED(+)
- 3 GREEN (CAN H)
- 4, 5 NOT USED
- 6 BLUE (CAN L)



7.2 NEW type ESL diagram (Renault):

Connection to new ESL :

- 1 BLACK (-)
- 2 RED(+)
- 3 GREEN (CAN H)
- 4 Connect pin 4 of the ESL to pin 2 of

the ESL through 100 Ohm resistor.

- 5 NOT USED
- 6 BLUE (CAN L)

7.3 8 pins ESL diagram (Nissan):

Connection to new ESL :

- 1 BLACK (-)
- 2 RED(+)
- 3 GREEN (CAN H)
- 4, 5, 7 NOT USED

6 - Connect pin 6 of the ESL to pin 2 of the ESL

- through 100 Ohm resistor.
- 8 BLUE (CAN L)





Example new type ESL diagram (Renault):

*The white wire is used to update the emulator but at the moment there are no updates available.



Note:



The green square respresents the position of the toggle switch