



Achieve the impossible

Abrites Diagnostics for Hyundai/KIA User Manual

Version: 1.2

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1. Introduction

"Abrites Diagnostics for Hyundai/ KIA" is a Windows PC based diagnostic software for Hyundai and KIA vehicles. With the help of this software you can perform complete diagnostic operations on all vehicles of the brands.

For proper operation of your diagnostic software you will need a corresponding interface for connection between your PC and vehicle named "AVDI".

AVDI is an interface produced by Abrites Ltd. intended to act as an interface between the PC and the electronic control units. AVDI should be used with ABRITES software produced by Abrites Ltd. ABRITES is a trade mark of Abrites Ltd.

2. Using the Abrites diagnostics for Hyundai/ KIA

The Abrites diagnostics for Hyundai/ KIA is installed together with the rest of the Abrites diagnostic software applications as a part of the Abrites diagnostic suite provided to the user via e-mail. The user can start the software by clicking on the appropriate icon from the Abrites "Quick start" menu.

Once the software is selected the user will see the following screen:

I AD	RULES Diagnostics for Hyundai and KIA 2.5	www.abrites.	com 😐	
#	Unit Name	Protocol	DTC 🔺	
01	Motor Electronics	K / CAN		Previou
02	Engine Control Unit (EOBD)	K / CAN		
03	EDC-15c2	K-Line		
04	Immobilizer	K-Line		Conne
05	Electronic Transmission Control	K / CAN		
06	Anti-Lock Brake System (ABS)	CAN		
07	DOHC Smartra	K-Line		Next
08	Tire Pressure Monitoring System	CAN		
09	Electric Power Steering	K / CAN		X
10	Transmission Control Unit	K-Line		Exit
11	Electronic Suspension Control	K / CAN		
12	Electronic Stability Program	K / CAN		
13	Airbag	K / CAN		
•			•	
	Vehide Selection Special Functions	Options		

This is the main diagnostic screen of the software. It contains the navigation buttons and provides a list of all the electronic modules that March be integrated into Hyundai and Kia vehicles.

2.1 Diagnostics

In order to perform basic diagnostic operations such as module identification, reading and clearing of diagnostic trouble codes (DTC) and live data measurement the vehicle model should be selected.

A A	ABRITES D	Diagnostics for Hyundai and KIA 2.3	www.abrites.c	com 😐	
#	Unit	Name	Protocol	DTC	
01	Moto	r Electronics	CAN KWP	26	Previous
02	Anti	-Lock Brake System (ABS)	CAN KWP	10	
03	Elec	tric Power Steering	CAN KWP	3	
					Connect
					Next
					Exit
-	Vehicle 9	Selection 🛛 👔 Special Functions 🕅 🔞 Options			
De	stination	KIA 🗸	<u></u>	Г	
Mo	del:	Rio (2006-2009)	n for Units	c	lear all DTCs
En	gine:	Diesel 🗸			
Re	ady.				

Once the vehicle is selected the Abrites diagnostics for Hyundai and Kia will display all the possible modules that may be integrated into this specific vehicle. It will display all the protocols in which these electronic components communicate.

In order to begin diagnostics the Scan for units button needs to be selected. Then the software will begin testing all the electronic modules. It will display them and the DTCs they contain.

Once the diagnostics is complete the user can choose to enter each specific electronic module within the tested vehicle.

A Motor Electronics	×
Establishing diagnostic session with selected unit Diagnostic channel is open	Previous
Electronic Control Unit Identification	
CAL No : GAPA-BE52F	[]
Boot Software Number : 17911001	Clear log
ECU Software Number : 9001090358	=
Sys Supplier Software Number : CK410K01	Write log
Fault Codes	
P0122 "Throttle/Pedal Position Sensor/Switch ""A"" Circuit Low" U0155 Lost Communication With Instrument Panel Cluster (IPC) Control Module P0107 Manifold Absolute Pressure/Barometric Pressure Circuit Low Input	
P0626 Generator Field/F Terminal Circuit High	+ Next
Identification Actual Values Read DTCs Reset Custom Memory Read / Write	
Adaptation Actuator tests Clear DTCs Custom Request Close	

- The Identification button will provide full module identification i.e. make, model, date of manufacturing, etc.

- The Actual values button will show the actual values of the current vehicle in real time.

- "Read DTCs" will show the current diagnostic trouble codes for the selected electronic module.

- The Adaptation button will show the options for unit adaptation.

- -" Actuator tests" will allow the user to test various actuators within the selected electronic unit.
- Clear DTCs will clear the diagnostic codes present in the module.
- "Custom request" allows advanced users to send binary signals to the modules.
- "Custom Memory Read/ Write" lets the user update the configuration of the unit.
- "Reset" will reset the module.

3. Special functions

111

The Special functions included in the Abrites diagnostics for Hyundai and Kia are designed to assist the user to perform specific operations also known as advanced diagnostics.

000		2	<u></u>	and the second s	010110 110011 101000 0001	(C)		60000	
ey Learning	PIN by VIN	Read PIN Code	Read PIN from working key	Program Remote	Dump Tool	ECU Flasher	Cluster Calibration	Read/Update ConfData	
36									Open

3.1 Key Learning

This special function allows the user to perform key programming for the vehicles from the Hyundai and KIA brands. It is used with or without the PIN by VIN function (which allows the PIN code for key learning to be calculated using the VIN number of the vehicle) or using the Read PIN code function (which extracts the PIN code from the vehicle). The functions allows key programming on cars equipped both with keyless or mechanical keys.

- PIN code extraction by VIN.

Input the last 6 digits of the VIN number of the vehicle and press "CALCULATE".

VIN (last 6 digits)	189915
PIN Code	034368
······	ı 1
Calculate	× 1

- PIN code extraction from the vehicle.

When this function is selected the user should selct the key type of the vehicle:



When the Smart Key type is selected, you need to follow the software onscreen instructions:

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If the mechanical key type is selected, ensure that the message is read and that its content corresponds to the vehicle:

0	This function should be used when the PIN code is unknown. It will read, verify and display the PIN code from the	
	Immobilizer control unit.	
	function.	
	Currently supported ECUs for automatic PIN code reading:	
	- KEFICO (WITH Flash ST 10F275) - Bosch EDC17C57	
	- Bosch EDC17C08	
	- Bosch ME17.9.11	
	- Bosch EDC16C39	
	- Bosch EDC15C2	
	- Delphi DCM3.7	
	Do you want to attempt to read the Pill code?	

After that is done the software will calculate the PIN code and provide it to the user.

- Key learning.

Once the PIN code of the vehicle has been retrieved the user can proceed to perform key learning. When the key programming option is opened the user should see the following screen:

			×
Code 03	4368		
			7
ch		X	
	Code 03	Code 034368	Code 034368

At this point the user should place the key in the ignition and press "Teach". Once that is done the user should follow the onscreen instructions closely and read each message that comes up carefully.

3.1.1 Key programming and reading PIN using a working key, ProTag and TA31 extractor.

You can also read the PIN and program a key if you have a working key to the car. In this scenario, you can use the TA31 extractor together with the working key to switch IGN on and obtain the PIN.

You can follow these steps to read the PIN from a wokring key and program a new one: 1. Open your Abrites Diagnostics For Hyundai/Kia Software:

#	Unit Name	Protocol	DTC 🔺	
01	Motor Electronics	k / CAN		Previo
02	Engine Control Unit (EOBD)	K / CAN		
03	EDC-15c2	K-Line		
04	Immobilizer	K-Line		Conne
05	Electronic Transmission Control	K / CAN		
06	Anti-Lock Brake System (ABS)	CAN		
07	DOHC Smartra	K-Line		Next
08	Tire Pressure Monitoring System	CAN		
09	Electric Power Steering	K / CAN	-	X
•	Vehicle Selection		•	Exit
Pro	Key PIN by VIN Read PIN Read PIN from Program Dump Tool ECU Flasher (Gramming Code working key Remote Ca	Cluster Read/U alibration ConfL	pdate bata	Dpen

2. Insert a working key TA31 into the PROTAG programmer 3. Remove the TA31 extractor when prompted and (must be directly connected to the PC via the USB cable). If not recognized, this means the key is not supported.

Detecting the key		X
Insert working If the key is no not supported	key in the prograr t recognized for s for PIN code read	nmer everal seconds then it is ding
		X Cancel

insert

the working key into the PROTAG programmer

ŧ	Unit Name	Protocol DTC	-
1	Motor Electronics	K / CAN	Previo
2	Engine Control Unit (EOBD)	K / CAN	
3	EDC-15c2	K-Line	
4	Immobilizer	V / CAN	Conne
5	Electronic	^	_
6	Anti-Lock B: Insert sniff key (TA31/TA26) in the programme	ər	
7	DOHC Smartra		Nex
в	Tire Pressu:		
9	Electric Por		- ×
1			Exi
	Vehide Selection	Cancel	
1		-	
(ey	y Learning PIN by VIN Read PIN Read PIN from Program Dump Tool ECU Flasher	Cluster Read/Update	
	Code working key Remote	Calibration ConfData	Open
-	9 fé		
leu	utralization		

- 4. Remove the working key and switch the IGN ON 3 times together with the working key and TA31:
- 5. The TA31 extractor can be placed together with the working key as shown in the photo below:



6. The software will prompt you to insert the TA31 extractor into the PROTAG programmer once it is ready and will display you the PIN code. This will allow you to program a spare key to the car.

3.2 Remote programming

In some cases the remote control cannot be programmed with the key. It is then when the remote programming function is most helpful.



When the function is selected the user you will see the following screen. Once it comes up the user should follow the on-screen instructions closely:

~

3.3 Dump tool

The Dump tool special function allows the user to read, save and modify Configuration data, read pin codes and others using a programmer to read the dumps from different units.

Dump Tool	-						-																		-		-			<u> </u>	3
Dump Type:																															
Cluster	c	al	ib	rat	io	n	Нуι	ınd	ai	93	3c5	6	(20	04	-2	008) -	Ac	cer	nt,	Vera	a (Cruz	z,	ŀ	•			r.	7	
																													Loa	d	
00139BF0	89	3F	11	80	D9	44	C4	75	09	21	44	80	DF	11	12	00	.?	.D.u	u.!D		•					*					
00139000 0	0C	3F	09	30	C4	08	03	F1	0A	00	09	3F	CO	80	91	00	.?.0	·	• • • •	?	•										
00139010 0	00	2D 2E	52	OF	D9	22	FC	85	86	1F	10	21	09	15	CO	08	R.	• " • •	• • • •	/	•										
00139C20 8	82	31	09	34	20	20	60	10	CE 01	rD 00	88	AZ	20	10	AB	OF	.2.4	m.	• • • •	· "·	•								_		
00139030 0	00	22	DO	90 64	10	AU	00	10	91	00	55	10	20	10	91	45		····	 Ат	····											
00139040 0	51	08	פע	04	10	81	0.9	15	58	FO	10	10	38	60	09	10	a		er	·	·										
00139060	51	10	00	80	Q1	00	00	ED TO	00	11	D4	65	00	00 न म	C0	08	×	• • • •		., .	•								Sav	e	
00139070	AE	34		17	5F	FO	DC	80	D9	32	10	95	00	2F	8B	4F	_4				0										_
00139080	02	FO	91	00	00	2D	D9	22	10	95	10	2F	00	FO	DF	3F		-11		/	2										
00139090	1B	80	3B	50	01	00	09	2F	54	08	7E	03	82	01	28	01			 /т.~												
00139CA0	3B	60	01	00	7E	03	82	11	28	01	3B	70	01	00	7E	0B	÷	~	. (. :	ъ~											
00139CB0 8	82	20	00	2F	8B	4F	02	FO	91	00	00	2D	D9	22	10	95	/	.0		".									9	È.	
00139000 3	10	2F	28	00	91	00	00	5D	99	56	D4	65	09	60	CO	08	./ (.		ı.v.	e.`.									- 두	2	
00139CD0 (6F	80	6B	80	37	00	E1	F3	91	00	00	4D	EE	3A	D9	33	o.k.	7		м.:.	3							Swa	ap Byt	tes L/I	нL
00139CE0 3	1C	95	BB	C0	FF	1F	91	00	00	5D	09	60	45	80	8F	CO].	`Е											
00139CF0 (0F	01	0C	3F	86	2F	D9	55	C4	75	91	00	00	3D	01	50	?	./.t	J.u.	=.	P										
00139D00 (00	26	8B	8F	02	F0	D9	44	FC	85	D9	33	1C	95	54	20	.٤	I	D	3T											
00139D10 3	10	3F	68	00	0C	65	16	FC	92	4F	10	5F	48	00	59	30	.?h.	.e	0.	_H.Y	0										-
00139D20 3	34	00	91	00	00	3D	09	60	44	80	86	10	0C	65	16	FC	4	.=.`	`D	e.	•										
00139D30 I	D9	33	CC	75	C2	10	10	32	26	10	DF	00	33	00	8F	E0	.3.u	2	28	.3	•							Pa	ramet	ers	
00139D40 3	1F	FO	60	F3	D9	3F	FF	FF	44	2F	64	4F	FC	FE	3C	29	··`·	.?	.D/d	0<)										
00139D50 9	91	00	00	2D	D9	3F	1C	95	91	00	00	5D	D9	55	CC	75	•••-	• ? • •].0.	u								_	_	
00139D60 I	D9	22	C4	75	0C	FF	86	2F	D9	44	FC	85	19	20	04	00	.".u	/	/.D.	•••••	•										
00139D70 9	54	21	8B	8F	02	FO	68	DO	BB	C0	FF	0F	91	00	00	FD	T!	h.	••••	• • • •	•										
00139D80 1	D9	FF	1C	95	10	FF	68	01	0C	64	86	1F	92	1F	26	OF	• • • •	h.	d.	••••	•					Ŧ					_
•																									÷				×	-	
																													-	N	
																													Clos	e	
																													0.00	-	

The Parameters button shows the modifications to the different parameters that can be applied.

X
Cancel

3.4 ECU Flasher

The ECU flasher lets the user read and update the Configuration Data and Flash of engine control units. It lets the . bin files read to be saved locally to the user's computer and stored for later usage.

There is also an additional Help button to provide further assistance to the user.

Engine Cor	ntrol	Unit	- Sp	pecia	al Fu	ncti	ons	-	-											×
ECU	ED	c 1	60	:39) B	os	СН	[•	CU type	nelp	Read E2P
00000000 00000000 00000000 0000000 00000				00 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00				00 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00	00 00 00 00 00 00 00 00 00 00			00 00 00 00 00 00 00 00 00			•	Update ConfData Read Flash Write Flash
000000B(000000D(000000E(000000E(000000E(0000010(0000011(0000012(0000013(0000014(0000015)	0 00 0 00 0 00 0 00 0 00 0 00 0 00 0 0																		E	Save to File
00000160 00000170 00000180 00000190		00 00 00	00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00 00 00 00	00	00 00 00 00	00 00 00 00	00 00 00	00 00 00 00			F	Close

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ECU Type Help			X
Manufacturer	Model	Motor	
Kia	▼ Sportage	▼ 2.0 CRDI 16V	
ECU type:			
	Bosch EDC 15C2		
			X Exit

3.5 Cluster calibration

Cluster calibration is a function designed to help the proper functionality of a vehicle after replacing a module with a second hand unit. It assists the user to avoid mismatches in the values of different counters in order for the vehicles to function correctly.

When this function is selected the user will have the option to select the model and year of the vehicle.



The following message is very important and selecting "I confirm" should be in coordination with local regulations.



ATTENTION!
This procedure will change the numerical value in the electronic component that shows the mileage of the car.
Before this procedure, please make sure that you have all the necessary permissions, approvals, and certificates. According to local legislation of your country, you should follow all the established procedures for this service activity, as well as comply with automobile specifications.
In case you have all the necessary authorization, after procedure completion, please do not forget to refer to all performed actions in all required documents: offers, orders for repair, invoices and any other technical, accounting or commercial documents.
Please confirm that you have read and understood this warning and that the subsequent procedure will be done at your request.
I confirm I refuse

From then on the user should get the current vehicle value, place the correct new value and click the "Set" button.

Cluster Calibration		×
Get Current	31508	Get Mileage
New Mileage	32494	Set Mileage

ABRITES Diagnostics for Hyundai and KIA
Mileage Recalibration successful
ОК

3.6 Read/ Update Conf Data



This function allows the Configuration data from the vehicles to be updated via On Board Diagnostics (OBD). The files can be saved locally to the user's computer, updated, viewed and uploaded later.

Custom	n Mer	noŋ	/ Do	wnl	oad	/ U	ploa	d												-	×
Type:	In	st	$\mathbf{r}\mathbf{u}$	me	nt	C	Lus	ste	er	кі	A	so	re	nt	0	201	11+	+	•		Pead
0000E	, 2C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		*		E2P
0000E	2D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				I
OOOOE	2E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00008	.210	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00002	210	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				Update ConfData
00000	320	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000	330	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	340	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	350	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	360	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	370	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				Save to file
0000E	380	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	390	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				~~
0000E	3A0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	3B0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				Load from file
0000E	:3C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••			Load from file
0000E	3D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		Conne	ection
OOOOE	3E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		St Add	
00008	310	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••		St. Add	ress
00000	400	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00002	410	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00000	420	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			Total	Size 10000
00000	440	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
00005	450	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
0000E	460	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			9	20
0000E	470	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00			3	(cp
0000E	480	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00				
•																			Þ		\sim
																					$\mathbf{\wedge}$
																					Class
																					Close
		-	_		-	_			_				-		-	-	-				

NOTE:

For a full list of supported models please visit abrites.com

4.0 Neutralization

The Neutralization function allows the use of second-hand modules in Hyundai/Kia vehicles.

For vehicles with a smart key:

neutralization (allowing adaptation in other vehicles) of the smart system

neutralization (allowing adaptation in other vehicles) of the ECU

neutralization (allowing adaptation in other vehicles) of the ESCL

neutralization (allowing adaptation in other vehicles) of the PDM (for vehicles equipped with PDM) For vehicles with a mechanical key:

neutralization (allowing adaptation in other vehicles) of the immobiliser - this automatically neutralises the ECU as well

neutralization (allowing adaptation in other vehicles) of the Smart module (for vehicles that are equipped with one)

Live data demonstrating the state of the modules (neutralized/active) and the number of initialized keys is shown in the function window.

Whenever neutralization is performed, the keys have to be re-learned to the vehicle after installing a neutralized module. To access the neutralization function, you can follow these three steps:

1. Open the Hyundai/Kia software, followed by Neutralization:

A AB	RITES Diagnostics for Hyundai and KIA 4.7	www.abr	- [×
\$	Unit Name	Protocol	DTC 🔺	
01	Motor Electronics	K / CAN		Previous
02	Engine Control Unit (EOBD)	K / CAN		
03	EDC-15e2	K-Line		
04	Immobilizer	k / CAN		Connect
05	Electronic Transmission Control	k / CAN		
06	Anti-Lock Brake System (ABS)	CAN		
07	DOHC Smartra	K-Line		Next
08	Tire Pressure Monitoring System	CAN		
09	Electric Power Steering	k / CAN	-	X
•			•	Exit
-	Vehicle Selection 🕌 Special Functions			
	🥔 🛯 👌 🏠 🖉 🛄 🌄 🗖			
Key	Learning PIN by VIN Read PIN Read PIN from Program Dump Tool ECU Flasher Clus Code working key Remote Calibr	ter Read/U ation ConfD	odate ata	
	a fe		L	open
Neu	tralization			

Neutralization	\times
PIN Code	
Select vehicle's key type	
 Smart key 	
 Mechanical key 	
Read PIN Next Cancel	

2. Enter or read car's PIN:

3. Click next once the PIN is read and follow the software guidance:

	PIN	Code	234556			
г ^{Sele}	ect vehicle	's key t	ype ——			_
6	Smart ke	:Y				
0	Mechanic	al key				
Con	necting	to Sm	art Key	Unit		
		7				_
F	Read PIN	7	Ne	xt	X	