

Event Data Recorder Use in Traffic Crash Reconstruction

Kia/Hyundai Event Data Recorder Technician



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KIA/HYUNDAI

- KIA & HYUNDAI released the ability to read ACM's in vehicles built after 9/1/2012 models to their dealer scan tool maker, GIT Tool Company.
- There is separate kit for each company with different software. Interface module hardware is identical except for color (red for Kia, blue for Hyundai). Direct to module cables mostly overlap (10/15) but each brand has a few unique cables.
- Data is intended to meet the requirements of US 49CFR Part 563 that became effective 9/1/2012.

Officially Supported 2013+ Models V46H/43K

Model KIA	Model Years													
	2010	2011	2012	2013*	2014	2015	2016	2017	2018	2019	2020	2021	2022	
CADENZA (Azera sister)					19(VG)	19	19	13(YG)	13	13				
FORTE	10	10	10	10 (TD)	6 (YD)	6	6	12(YD,YDM)	12	21 or 28 (BDn)				
K5												26(D3LA)		
K900						11 (KH)	11	11	11	21 or 28 (RJ)				
NIRO (DE EV, DE HEV, DE PHEV)								21(DE)	21	21	21	21		
OPTIMA	No	4	4	4 (TF/QF)	4	4	14 (JF,JFA)*	14	14	14(JFA)	14	?		
OPTIMA HYBRID	No	4	4	4 (TF HEV)	4	4	4	23(JF HEV)	23	23	23	?		
RIO	No	No	8	8(UB)	8	8	8	8	21 (SC)	21	21	21		
RONDO (Canada only 2011 MY+)	No	No	9	(not officially supported since non-US, read as a Kia Rio)										
SEDONA	No	No	No	No	10(VQ)	12(YP)	12	12	12	12	12	12		
SELTOS												28(SP2)		
SORENTO	No	3	3	3(XM)	3,7(XM)	3,7	13 (UMA)	13	13	13	13	29+CFCI (MQ4)		
SOUL	¹ see note 1	¹ see note 1	1	1(AM)	12(PS)	12(PSEV)	12	12	12	12,26(SK3 EV)	26 (SK3)	26		
SPORTAGE (SL)	No	Yes	2	2(SL)	2	2	2	13(QL)	13	13	13	13		
STINGER (CK)									21 (CK)	21	21	21		
TELLURIDE (ON)											25(ON)	25		
HYUNDAI	2010	2011	2012	2013*	2014	2015	2016	2017	2018	2019	2020	2021	2022	
ACCENT (RB)	No 10	No?	⁵ see note 2	5(RB)	5	5	5	5	21(HC)	21	21	21		
AZERA (HG)		likely	Yes	7(HG)	7	7	7	7						
ELANTRA Coupe(JK), Sedan(UD/MD)	No	Yes	8	8(JK/UD/MD)	8	8	8	21(AD, ADA)	21	21	21	Hyb 28 (CN7)		
ELANTRA GT (GD) (aka "i30")	old model		new model	6/12(GD)	6,12	6,12	6,12	6,12	21(PD)	21	21	21		
EQUUS (VI)(stretch genesis)	?	yes?	yes?	9,11(VI)	9,11(VI)	9,11(VI)	9,11(VI)							
GENESIS (Coupe BK, Sedan BH/DH)	⁹ shave keyway	⁹ shave keyway	?	9(BK, BH)	9	13(DH)	13							
GENESIS G70										21,25(IK)	21,25	29+CFCI (JK1)		
GENESIS G80								13(DH)	13	13	13	29+CFCI		
GENESIS GV80											29+CFCI	29+CFCI		
GENESIS G90								13(HI)	13	13	13	13		
IONIQ EV and HEV								21(AE)	21	21	21	21		
KONA (i20, Rio sister)small SUV)									24 (OS)	24	24	24		
KONA EV										27 (OS EV)	27	27		
NEXO										26 (FE)	26	26		
PALISADE											25(LX2)	25		
SANTE FE	⁹ shave keyway note 3	⁹ shave keyway	⁹ shave keyway	7(NC,DMA)	7	7	7	7	7	25 (TMA)	25	25		
SONATA		4	?	(YFA, YF HEV)	4	14 (LF) 4 (HEV)	14 (LF HEV)	14	14	14	25(DN8A)	25		
TUCSON	Yes	Yes	2	2(LM)	2	2	13(TL)	13	13	13	13	13	30+CFCI (NX4)	
VELOSTER coupe	out of production			5(FS)	5	5	5	5	5	14 (JS)	14	14		
VELOSTER N										28(JSN)	28	28	4	
VENUE											30(QX)	30		

Hyundai/Kia EDR Tools

- Starting Jan 2022, you may purchase U.S. DLC only kits from Crash Data Group \$4950 per brand.
- Full Hyundai kit comes with 13 DTM cables thru #24, Kia with 15 DTM cables thru #23. 10 Cables are in both. New cables now cost \$300 each . #25-30 for 2019/2020/2021/2022's not yet included in full kits.
- Hyundai full kit: Part G0ZHDMN001 **\$6450**, Kia full kit: Part GIT0ZKDMN001 **\$6950 + tax+ship, +software \$695/brand**
- Software updates **\$695/yr/** brand from GIT Tool Company or Crash Data Group. Current V46 Hyundai/Genesis, V44 Kia.
- CAN-FD (Flexible Data Rate) DTM adapter needed for 2020 HV80 & other new models cost approx. \$1,080
- Contacts: Patrick Dadson pdadson@gitamerica.com
(888)549-4977
- Scott Baker crash@crashdatagroup.com (800) 280-7940

Kit comes in a case w/software USB

Older kits had CD



Kit consists of **Vehicle Communication Interface (VCI)**,
DLC Cable, Direct to Module Cables, Power Source.
You provide the computer.



Hyundai EDR Basic Kit Component

The table below lists all the current Hyundai EDR Basic Kit components.

\$6450.00MSRP

Item		GITA Part Number
VCI Main Body Ass'y		G1CHDMK050
DLC Main Cable		G1CDDCA001
USB Cable (Locking Type)		G1MDDCA105
AC/DC Power Adapter		G1CDDPA013
Power Cable		G1CDNCA001
EDR Software USB		G1ZHNCB001
Carrying Hard Case		G1GKNHA001
ACU Adapter 002	common	G1ZDDPA002
ACU Adapter 004	common	G1ZDDPA004
ACU Adapter 005		G1ZDDPA005
ACU Adapter 006	common	G1ZDDPA006
ACU Adapter 007	common	G1ZDDPA007
ACU Adapter 008	common	G1ZDDPA008
ACU Adapter 009		G1ZDDPA009
ACU Adapter 011	common	G1ZDDPA011
ACU Adapter 012	common	G1ZDDPA012
ACU Adapter 013	common	G1ZDDPA013
ACU Adapter 014	common	G1ZDDPA014
ACU Adapter 021	common	G1ZDDPA021
ACU Adapter 024		G1ZDDPA024

Kia EDR Basic Kit Component List

The table below lists all the current Kia EDR Basic Kit components.

\$6950.00MSRP

Item		GITA Part Number
VCI Main Body Ass'y		G1CHDMK050
DLC Main Cable		G1CDDCA001
USB Cable(Locking Type)		G1MDDCA105
AC/DC Power Adapter		G1CDDPA013
Power Cable		G1CDNCA001
EDR Software USB		G1ZKNDB001
Carrying Hard Case		G1GKNHA001
ACU Adapter 001		G1ZDDPA001
ACU Adapter 002	common	G1ZDDPA002
ACU Adapter 003		G1ZDDPA003
ACU Adapter 004	common	G1ZDDPA004
ACU Adapter 006	common	G1ZDDPA006
ACU Adapter 007	common	G1ZDDPA007
ACU Adapter 008	common	G1ZDDPA008
ACU Adapter 010		G1ZDDPA010
ACU Adapter 011	common	G1ZDDPA011
ACU Adapter 012	common	G1ZDDPA012
ACU Adapter 013	common	G1ZDDPA013
ACU Adapter 014	common	G1ZDDPA014
ACU Adapter 019		G1ZDDPA019
ACU Adapter 021	common	G1ZDDPA021
ACU Adapter 022		G1ZDDPA022

Hyundai EDR ACU Adapter Information

Software Version 44 August 2021

The table below lists all the current Hyundai EDR Airbag Control Unit adapters along with the corresponding model and applied years.

ACU Adapter Part No	Applied Vehicle Name & Model Year
G1ZDDPA002	Tucson (LM) 2013MY - 2015MY
	Tucson (LM FCEV) 2015MY - 2017MY
G1ZDDPA004	Sonata (YFA) 2013MY - 2014MY
	Sonata Hybrid (YF HEV) 2013MY - 2015MY
G1ZDDPA005	Accent (RB) 2013MY - 2017MY
	Veloster (FS) 2013MY - 2018MY
G1ZDDPA006	Elantra GT (GD) 2013MY - 2017MY
G1ZDDPA007	Santa Fe (NC) 2013MY – 2019MY
	Santa Fe Sport (DMA) 2013MY – 2018MY
	Azera (HG) 2013MY - 2017MY
G1ZDDPA008	Elantra Coupe (JK) 2013MY - 2015MY
	Elantra (UD) 2013MY - 2016MY
	Elantra (MD) 2013MY - 2016MY
G1ZDDPA009	Genesis Coupe (BK) 2013MY - 2016MY
	Genesis (BH) 2013MY - 2014MY
	Equus (VI) 2013MY - 2016MY***
G1ZDDPA011	Equus (VI) 2013MY - 2016MY***
G1ZDDPA012	Elantra GT (GD) 2013MY - 2017MY
G1ZDDPA013	Genesis (DH) 2015MY - 2016MY
	G80(DH) 2017MY – 2020MY
	G90(HI) 2017MY - Current
	Tucson (TL) 2016MY - Current
G1ZDDPA014	Sonata (LFA) 2015MY - 2019MY
	Sonata HEV (LF HEV) 2016MY - 2019MY
	Sonata PHEV (LF PHEV) 2016MY - 2019MY
	Veloster (JS) 2019MY - Current

ACU Adapter Part No	Applied Vehicle Name & Model Year
G1ZDDPA021	Elantra (AD) 2017MY – 2020MY
	Elantra (ADA) 2017MY – 2020MY
	IONIQ Electric (AE EV) 2017MY - Current
	IONIQ Hybrid (AE HEV) 2017MY - Current
	Elantra GT (PD) 2018MY - Current
	IONIQ Plug-In Hybrid (AE PHEV) 2018MY - Current
	Accent (HC) 2018MY - Current
	G70 (IK) 2019MY – Current***
G1ZDDPA024	Kona (OS) 2018MY - Current
G1ZDDPA025*	Santa Fe (TMA) 2019MY - Current
	Santa Fe Hybrid (TM HEV) 2021MY - Current
	Santa Fe Plug-In Hybrid (TM PHEV) 2021MY – Current
	Palisade (LX2) 2020MY - Current
	Sonata (DN8A) 2020MY - Current
	Sonata (DN8) 2021MY
	G70 (IK) 2019MY – Current***
G1ZDDPA026*	Nexo (FE) 2019MY – 2021MY
G1ZDDPA027*	Kona Electric (OS EV) 2019MY - Current

*Adapter not included in initial kit.

**CFCI Module (G1DDDME001) – Necessary for communication with modules using CAN-FD protocol.

*** The correct adapter, being either of the two, should be determined by visually comparing connectors when extracting data directly from Airbag Control Unit.

ACU Adapter Part No	Applied Vehicle Name & Model Year
G1ZDDPA028*	Veloster N (JSN) 2019MY - Current
	Elantra (CN7) 2021MY - Current
	Elantra (CN7A) 2021MY - Current
	Elantra Hybrid (CN7 HEV) – 2021MY - Current
G1ZDDPA029* + CFCI**	G80 (RG3) 2021MY – Current
	GV80 (JX1) 2020MY - Current
	GV70 (JK1) 2022MY - Current
G1ZDDPA030*	Venue (QX) 2020MY - Current
G1ZDDPA030* + CFCI**	Tucson (NX4) 2022MY – Current
	Tucson (NX4A) 2022MY – Current
	Tucson Hybrid (NX4 HEV) 2022MY – Current
	Tucson Plug-In Hybrid (NX4 PHEV) 2022MY – Current
	Santa Cruz (NX4A OB) 2022MY – Current

*Adapter not included in initial kit.

**CFCI Module (G1DDDME001) – Necessary for communication with modules using CAN-FD protocol.

*** The correct adapter, being either of the two, should be determined by visually comparing connectors when extracting data directly from Airbag Control Unit.

Kia EDR ACU Adapter Information

Updated October 2021

Current Software Version: *E-N-K-01-00-0043*

The table below lists all the current Kia EDR Airbag Control Unit adapters along with the corresponding model and applied years.

ACU Adapter Part No	Applied Vehicle Name & Model Year
G1ZDDPA001	Soul (AM) 2013MY
G1ZDDPA002	Sportage (SL) 2013MY - 2016MY
G1ZDDPA003	Sorento (XM) 2013MY - 2015MY***
G1ZDDPA004	Optima (TF/QF) 2013MY - 2015MY
	Optima Hybrid (TF HEV) 2013MY - 2016MY
G1ZDDPA006	Forte (YD) 2014MY - 2016MY***
G1ZDDPA007	Sorento (XM) 2014MY - 2015MY***
G1ZDDPA008	Rio (UB) 2013MY - 2017MY
G1ZDDPA010	Sedona (VQ) 2014MY
	Forte/ Forte Koup (TD) 2013MY
G1ZDDPA011	K900(KH) 2015MY - 2018MY
G1ZDDPA012	Soul (PS) 2014MY - 2019MY
	Soul EV (PS EV) 2015MY - 2019MY
	Sedona (YP) 2015MY- 2021MY
	Forte (YD) 2017MY - 2018MY***
	Forte (YDm) 2017MY - 2018MY
G1ZDDPA013	Sorento (UMA) 2016MY – 2020MY
	Sportage (QL) 2016 MY – Current
	Cadenza (YG) 2017 MY - 2019MY
G1ZDDPA014	Optima (JF) 2016MY - 2018MY
	Optima (JFa) 2016MY – 2020MY
G1ZDDPA019	Cadenza (VG) 2014MY – 2016MY

G1ZDDPA021	Niro HEV (DE HEV) 2017 MY – Current
	Niro PHEV (DE PHEV) 2018 MY – Current
	Niro EV (DE EV) 2019 MY – Current
	Rio (SC) 2018 MY – Current
	Stinger (CK) 2018 MY – Current
	Forte (BDm) 2019MY – Current***
	K900 (RJ) 2019MY – 2020MY***
G1ZDDPA023	Optima Hybrid (JF HEV) 2016MY – 2020MY
	Optima PHEV (JF PHEV) 2017MY – 2020MY
G1ZDDPA025*	Telluride (ON) 2020MY – Current
G1ZDDPA026*	Soul EV (SK3 EV) 2019MY – Current
	Soul (SK3) 2020MY – Current
	K5 (DL3A) 2021MY – Current
G1ZDDPA028*	Seltos (SP2) 2021MY – Current
	Forte/Cerato (BDm) 2019MY-2021MY***
	K900 (RJ) 2019MY-2020MY***
G1ZDDPA029* + CFCI**	Sorento (MQ4) 2021MY – Cuent
	Sorento HEV (MQ4 HEV) 2021MY – Current
	Carnival / Sedona (KA4) 2022MY – Current
	Sorento Plug-In Hybrid (MQ4 PHEV) 2021 – Current

Newly added platforms/vehicles highlighted in yellow.

Note) Kia EDR software is only for vehicles in the United States of America.

For more information or to purchase the ACU adapters, please contact GIT America at 1-888-549-4977

*Adapter not included in initial kit.

**CFCI Module (G1DDDME001) – Necessary for communication with modules using CAN-FD protocol.

*** The correct adapter, being either of the two, should be determined by visually comparing connectors when extracting data directly from Airbag Control Unit.

First time setup: Computer Selection

- Select what computer you will install the software on – WIN7 was originally best.
- The ORIGINAL 2013 software did not work well with Windows 10, you had to get special drivers from GIT. In 2018 GIT upgraded the WIN 10 loading software, available on their website. Contact Dan Portillo dportillo@gitamerica.com.
- Microsoft discontinued support for Win 7 in Jan 2020, shifting to Win 10 and reloading is now recommended.

First Time Setup: Load software from USB or older CD.

Hardware interface MUST be attached to run or update software. Software checks for updates on internet, prompts you to download/install. You must supply username and password that came with specific interface that you are using.



First Time Setup

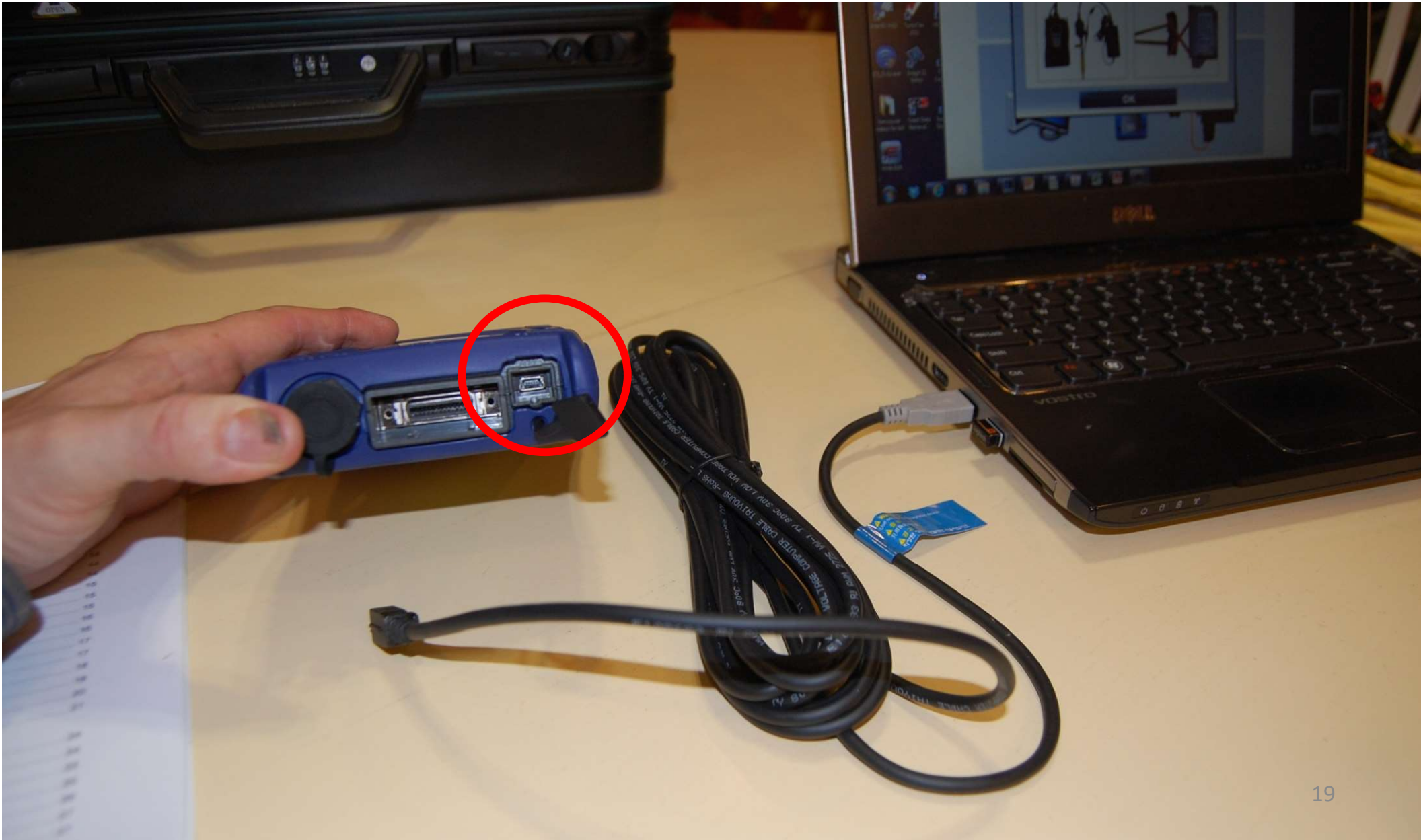
Print “EDR Users Manual” (39 Pgs)

- From USB. Gives complete kit description and instructions how to use it. Save on Desktop so you can refer to it for troubleshooting.
- Tells what cables go with what model codes
- Some models have undergone redesigns and have different codes for later model years.
- Codes also appear to the right of the part number on the ACM itself.

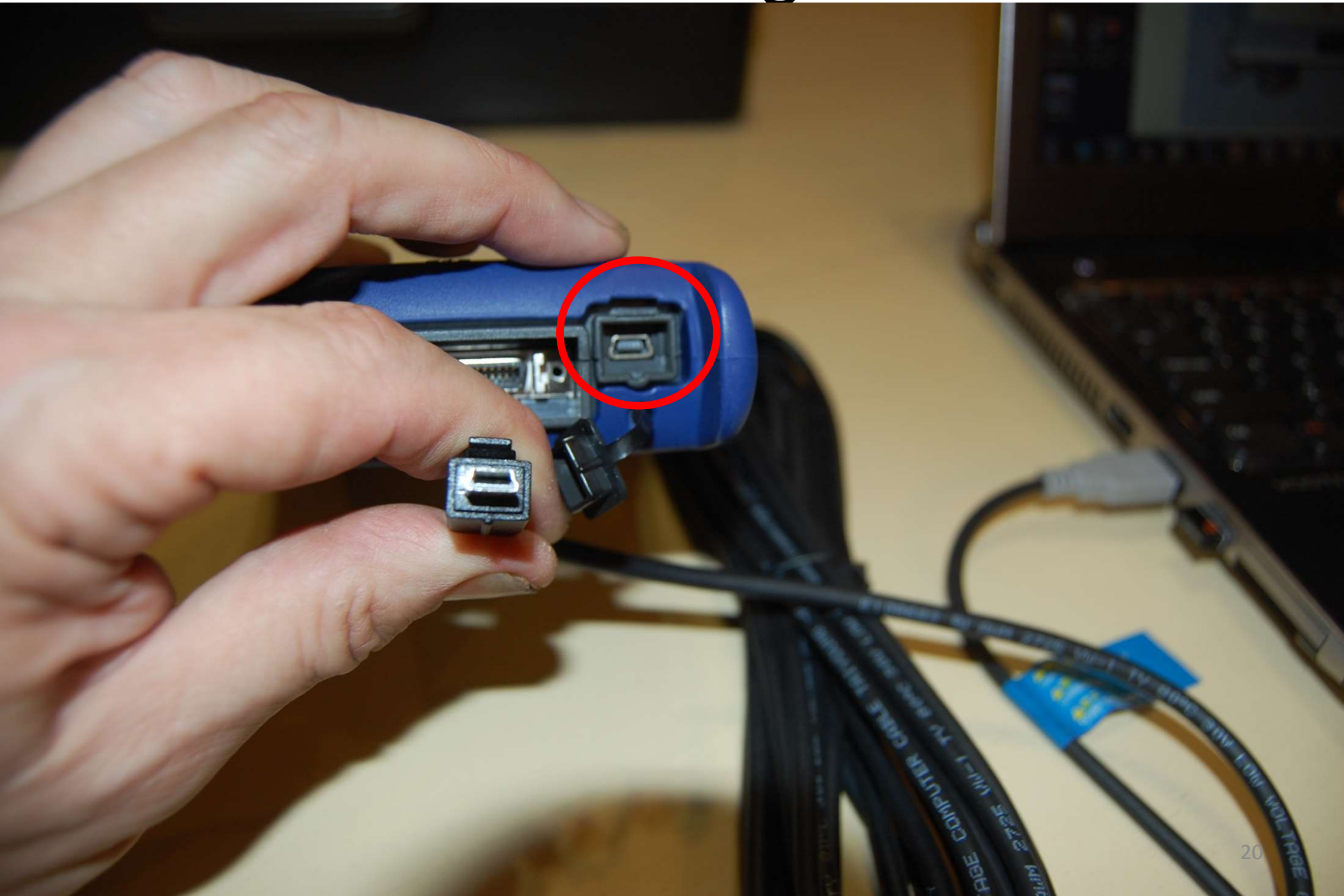
Attach one end of USB to Laptop



Attach other end (mini USB) to VCI



Mini USB Plug in VCI



Laptop connected to VCI



Locate VCI to DLC cable



Attach DLC VCI Connector

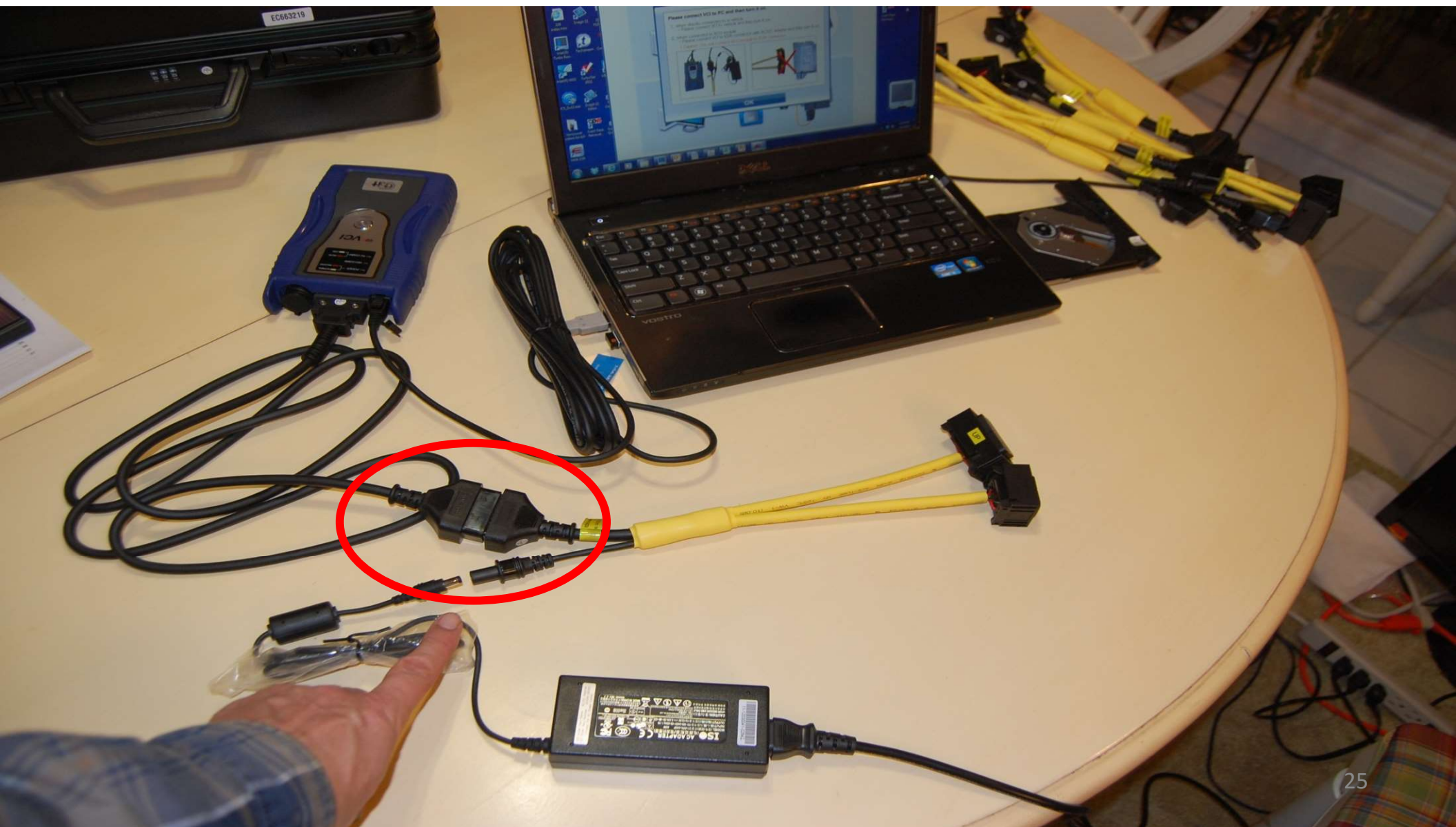


FIRST TIME SETUP,
attach any yellow cable into DLC

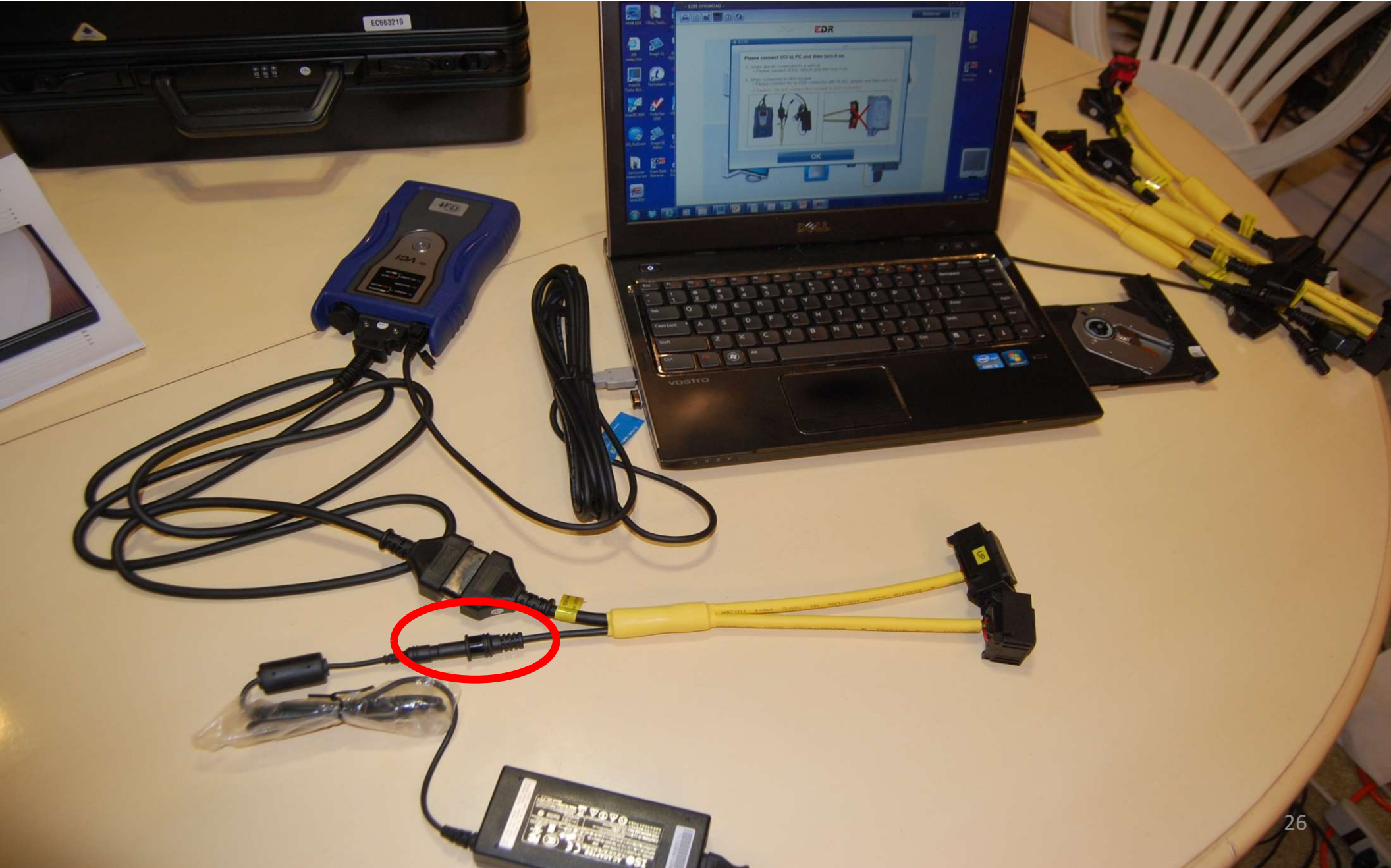


Plug in 12V power brick and plug 12V input into jack in yellow cable.

You can also use your Bosch CDR cigarette lighter plug with a jump pack



Plug power jack in to module cable
Setup does not require an ACM attached



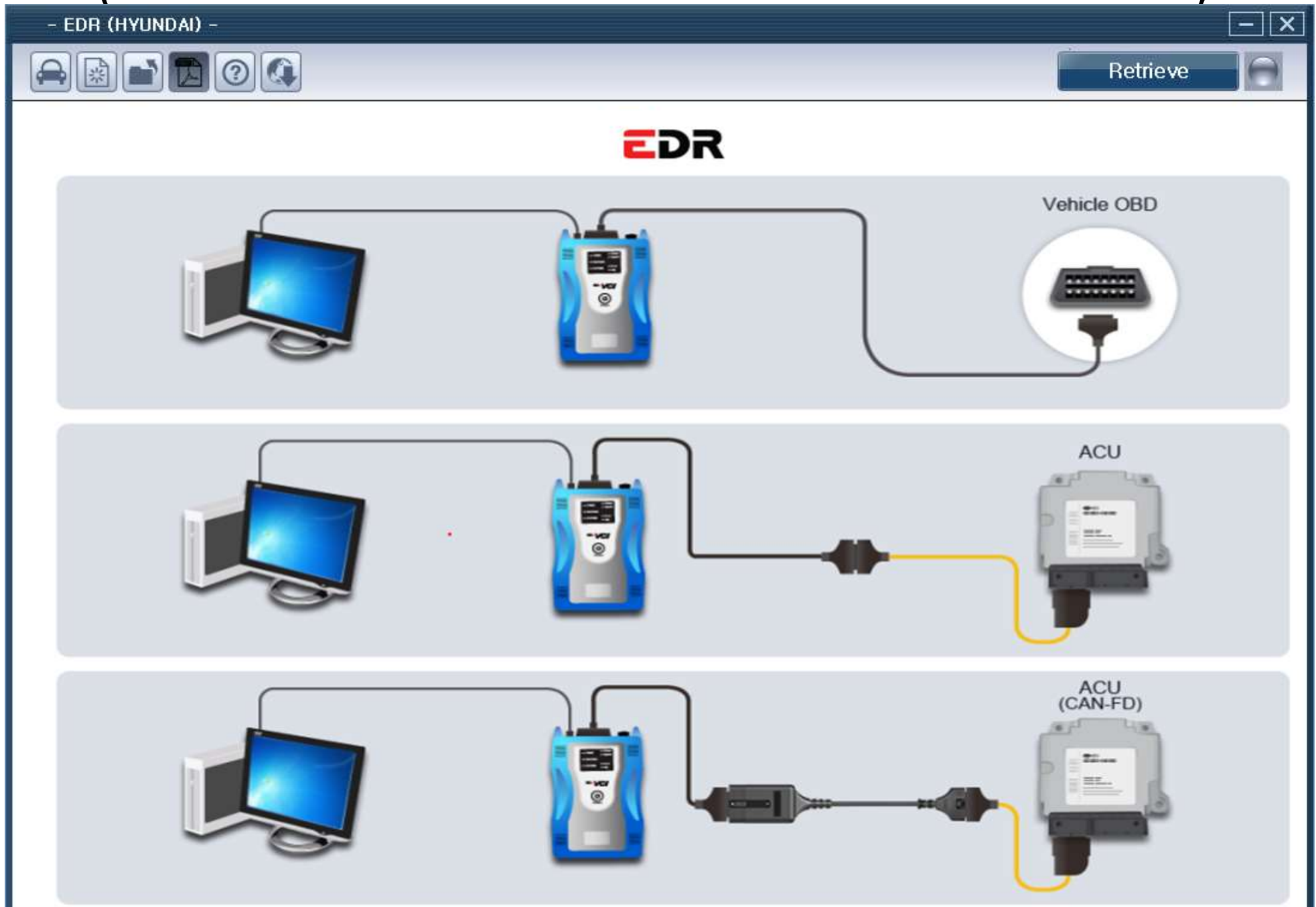
(DLC& DTM) Turn Power Button on VCI on



VCI has lights for power, PC Com, Veh Com



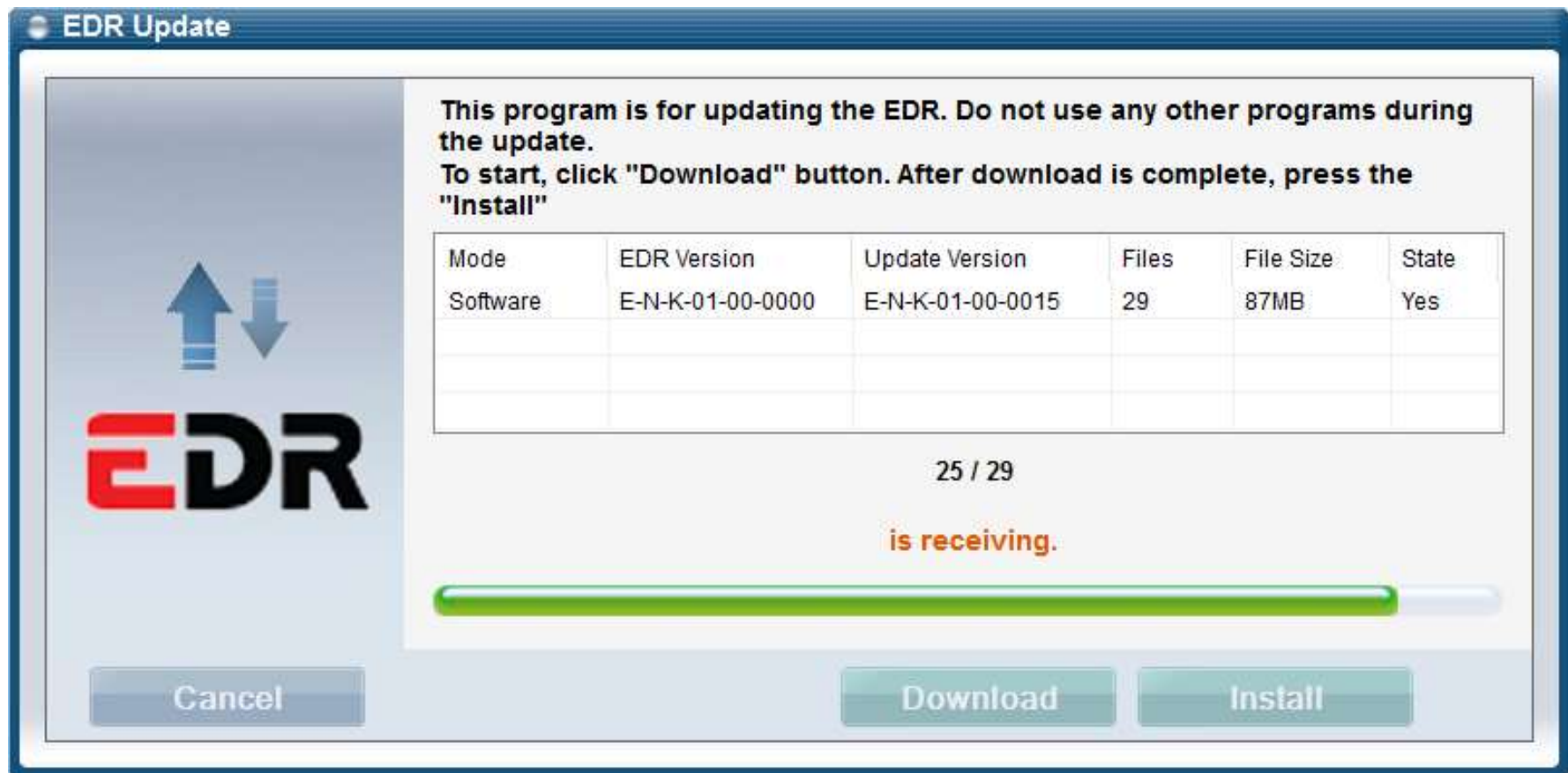
Open Software – See Initial Screen (VCI must be connected & ON for software to run)



INITIAL SETUP SOFTWARE UPDATE

- When connected to internet, software will automatically scan and prompt for software update. Agree to this.
- Software will prompt for USER ID (example **HYUNDAIEDR110** or **KIAEDR113**) and PASSWORD (8 letters, example **GBEYDSCL** or **MMYN5L8H**). **Capitalization is necessary.** Type them in and enter. The password only works on the *specific* interface module the software license is for.

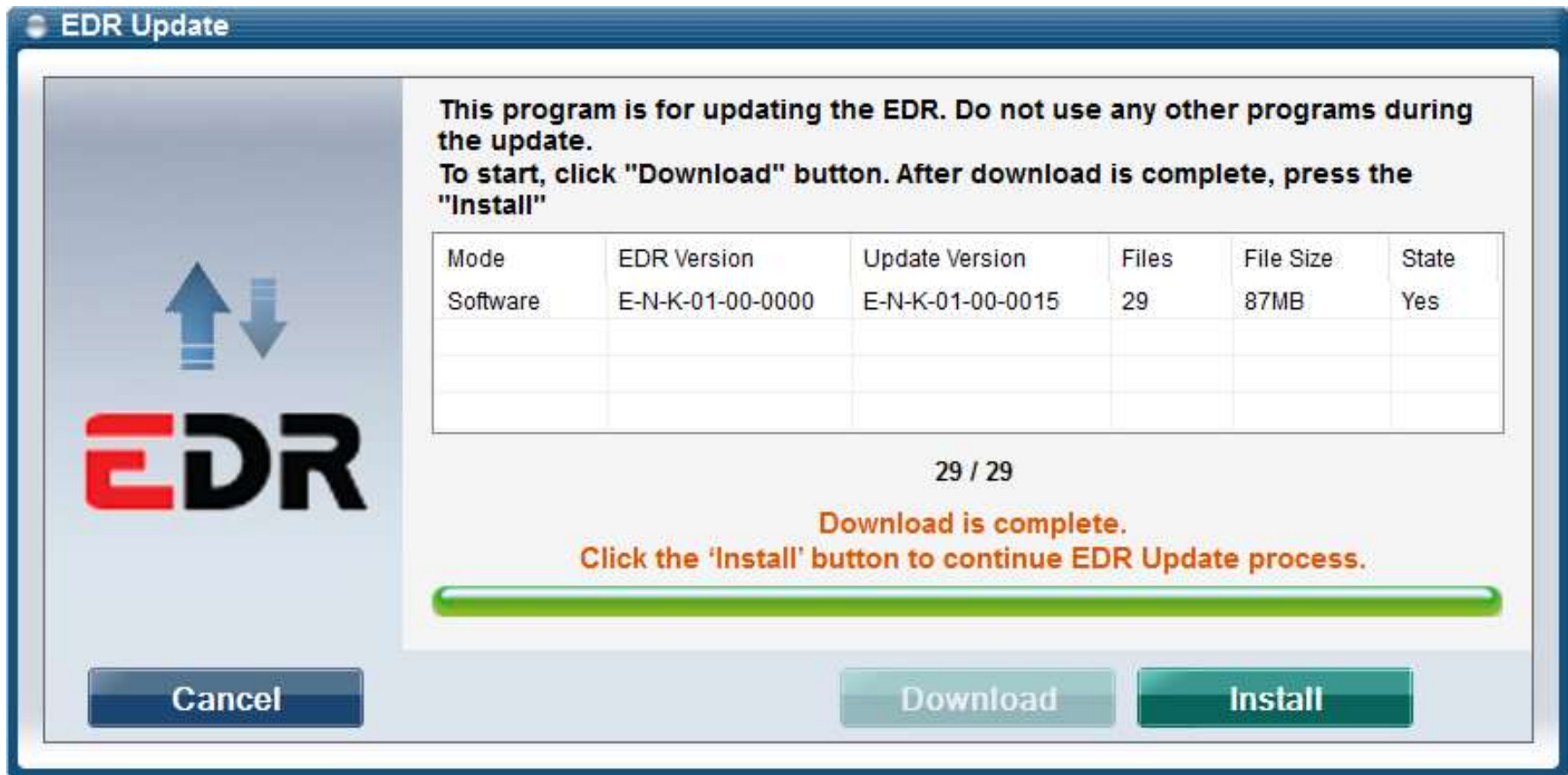
Updates being received



Updates may take 15-45 minutes to download

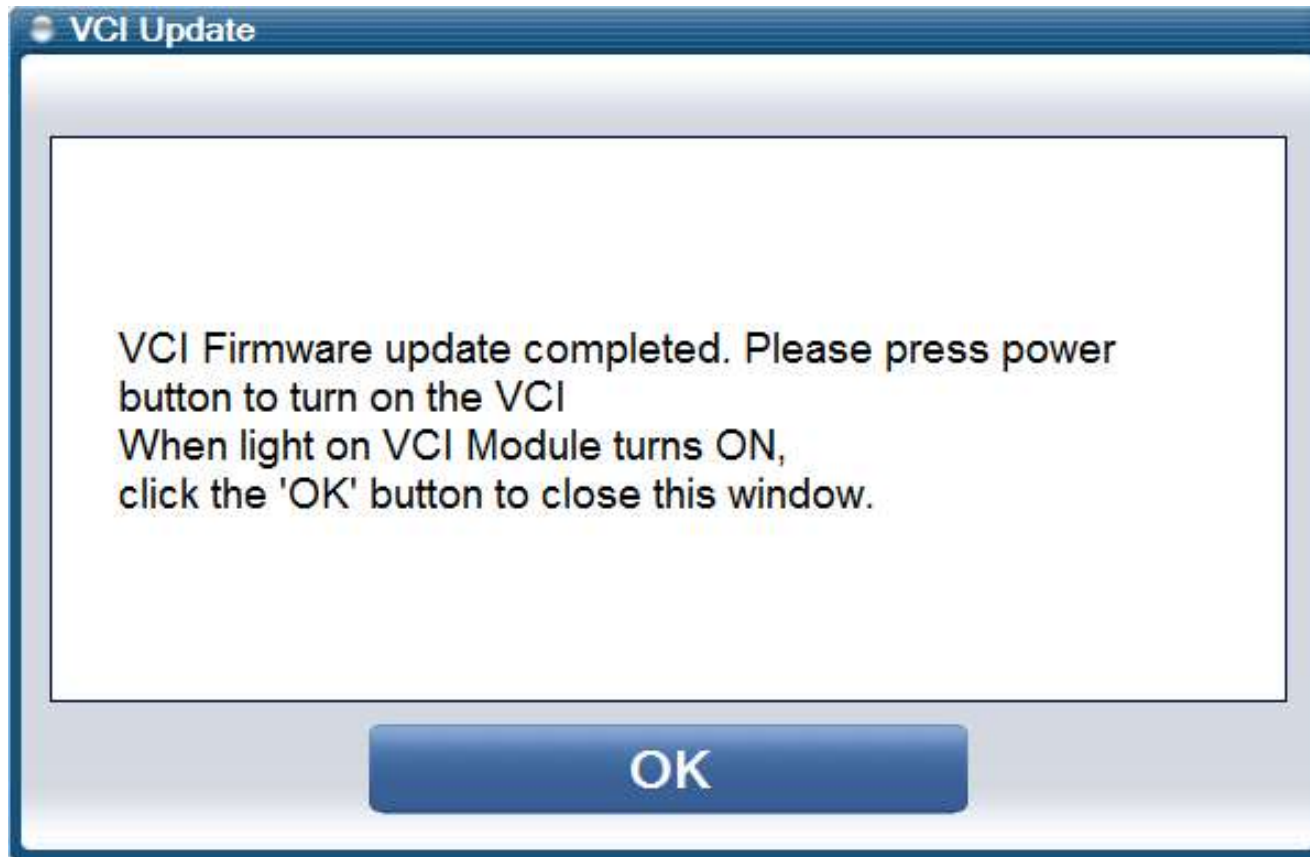
Done receiving, now install

may also take several minutes



- After installation, VCI firmware will update
- VCI will turn itself off when done

VCI update successful screen



Initial Setup Now Complete

Periodic Updates May Be Necessary

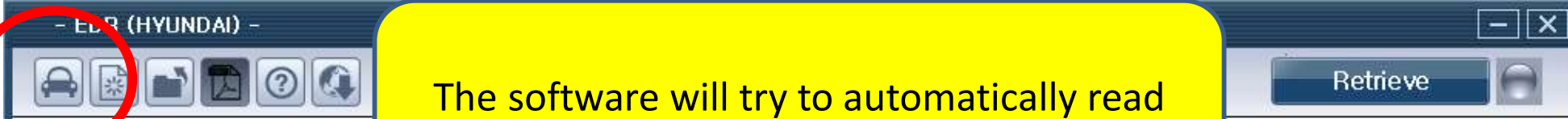
- The license holder will receive an email from GIT saying a new software version is available
- With computer and VCI connected and with an internet connection, software should prompt you to update. If it does not prompt you, click on the “globe” icon and it will check for updates. After initial setup, subsequent updates only take a short time.
- The user name and password are specific to the VCI the license was issued for. You cannot use someone else’s VCI’s username and password. After updating you must restart the software.
- Updating only one level takes only a few minutes, updating from initial installation takes MUCH LONGER

Begin Readout. Select Vehicle Icon

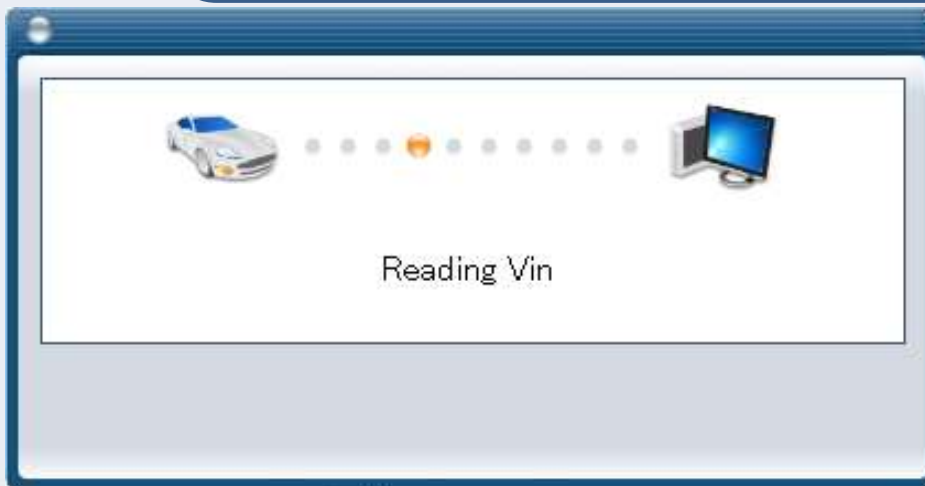
Start the readout process by selecting the car icon in the upper left.



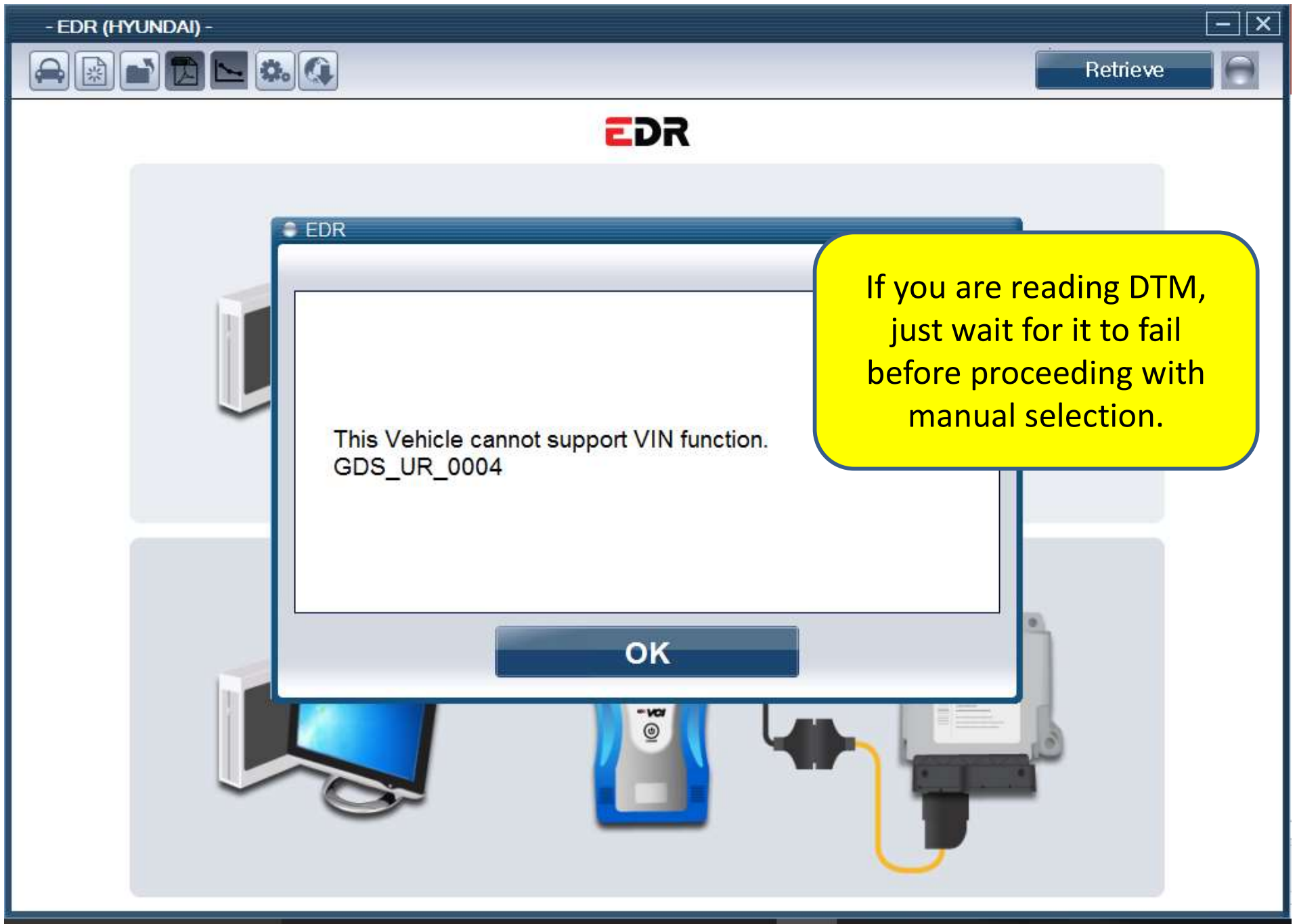
After hitting the vehicle select button



The software will try to automatically read the VIN thru the DLC.



If you are reading DLC on a 2013+, let it proceed. If you are reading DLC on a 2010-2012, be sure to TURN THE KEY OFF so that it will fail and you can enter a 2013 VIN manually. If it auto detects a 2010-2012 VIN it will not allow the readout.



5NPEC4AB1DH652980

Auto VIN Search

Clear

Model

Adapter

- ACCENT(RB)
- AZERA(HG)
- ELANTRA COUPE(JK)
- ELANTRA GT(GD)
- ELANTRA(AD)
- ELANTRA(ADA)
- ELANTRA(MD)
- ELANTRA(UD)
- EQUUS(VI)
- G80(DH)
- G90(HI)
- GENESIS COUPE(BK)

Type 2013+ VIN
VIN must be typed in CAPITAL letters!!

Then hit auto search

After the VIN search fails, you can manually enter a 2013+ VIN and click Auto VIN Search, it will choose the correct model code, and the adapter screen will populate with a picture of the cable and its cable #.

Additional Information

OK

Cancel

VIN must be typed in CAPITAL letters!!

VIN you typed

Model it selected

Model it selected highlighted

Click to Proceed when done

Vehicle Selection

5NPEC4AB1DH652980

Auto VIN Search

Clear

SONATA(YFA) Adapter

Check the connector on the ACU side and connect the adaptor accorded with the specifications



Part number : G1ZDDPA004

Additional Information

OK Cancel

GENESIS COUPE(BK)
GENESIS(BH)
GENESIS(DH)
IONIQ electric(AE EV)
IONIQ hybrid(AE HEV)
SANTAFE SPORT(DMA)
SANTAFE(NC)
SONATA HEV(LF HEV)
SONATA HYBRID(YF HEV)
SONATA PHEV(LF PHEV)
SONATA(LFA)
SONATA(YFA)

Alternative to typing VIN: Select Model

The screenshot shows a 'Vehicle Selection' dialog box. At the top, there is a text input field with the placeholder 'To search vehicle, Please insert VIN', an 'Auto VIN Search' button, and a 'Clear' button. Below this is a list of vehicle models under the heading 'Model', with an empty 'Adapter' field to the right. The models listed are: ACCENT(RB), AZERA(HG), ELANTRA COUPE(JK), ELANTRA GT(GD), ELANTRA(AD), ELANTRA(ADA), ELANTRA(MD), ELANTRA(UD), EQUUS(VI), G80(DH), G90(HI), and GENESIS COUPE(BK). At the bottom, there is an 'Additional Information' section and two buttons: 'OK' and 'Cancel'. Three yellow callout boxes provide instructions: one points to the VIN field with the text 'Leave Blank', another points to the model list with 'Select Model by clicking on it', and a third points to the 'OK' button with 'Click to Proceed when done'. A large yellow rounded rectangle on the right contains a detailed instruction: 'After the VIN search fails, look at the application chart (slide 4) and find your model code. You MUST pick the correct generation. Click on it, and the adapter screen will populate with a picture of the cable and its cable #. Make sure that matches the chart.'

Vehicle Selection

To search vehicle, Please insert VIN

Auto VIN Search

Clear

Model

Adapter

ACCENT(RB)

AZERA(HG)

ELANTRA COUPE(JK)

ELANTRA GT(GD)

ELANTRA(AD)

ELANTRA(ADA)

ELANTRA(MD)

ELANTRA(UD)

EQUUS(VI)

G80(DH)

G90(HI)

GENESIS COUPE(BK)

Additional Information

OK

Cancel

Leave Blank

Select Model by clicking on it

Click to Proceed when done

After the VIN search fails, look at the application chart (slide 4) and find your model code. You MUST pick the correct generation. Click on it, and the adapter screen will populate with a picture of the cable and its cable #. Make sure that matches the chart.

Vehicle Selection

5NPEC4AB1DH652980

Adapter

Additional Information

VIN as Programmed into EMS	<input type="text" value="Leave blank"/>
User-entered VIN	<input type="text" value="5NPEC4AB1DH65298"/>
User Name	<input type="text"/>
Case Number	<input type="text"/>
Crash Date	<input type="text"/>
Tire Size(s)	<input type="text"/>
Memo	<input type="text"/>

Re-type VIN here

Box may be barely visible off top of screen, but click in it and it will allow typing

Populates here as you type above

Type the 2013 or later VIN into the upper left box. As you do, it should also populate the User Entered VIN screen. IF you type in the middle box, NOTHING HAPPENS

KMHDH4AE2DU258008

Auto VIN Search

Clear

ELANTRA(MD)

Adapter

Additional Information

VIN as Programmed into EMS

User-entered VIN

User Name

Case Number

Crash Date

Tire Size(s)

Memo

You may now fill in case information. This is simply printed on your report, it does NOT affect the interpretation

OK

Cancel

If you inputted model and not VIN

Vehicle Selection

KMHDH4AE2DU258008

ELANTRA(MD) | **Adapter**

Additional Information

VIN as Programmed into EMS	<input type="text"/>
User-entered VIN	KMHDH4AE2DU258008
User Name	<input type="text"/>
Case Number	<input type="text"/>
Crash Date	<input type="text"/>
Tire Size(s)	<input type="text"/>
Memo	<input type="text"/>

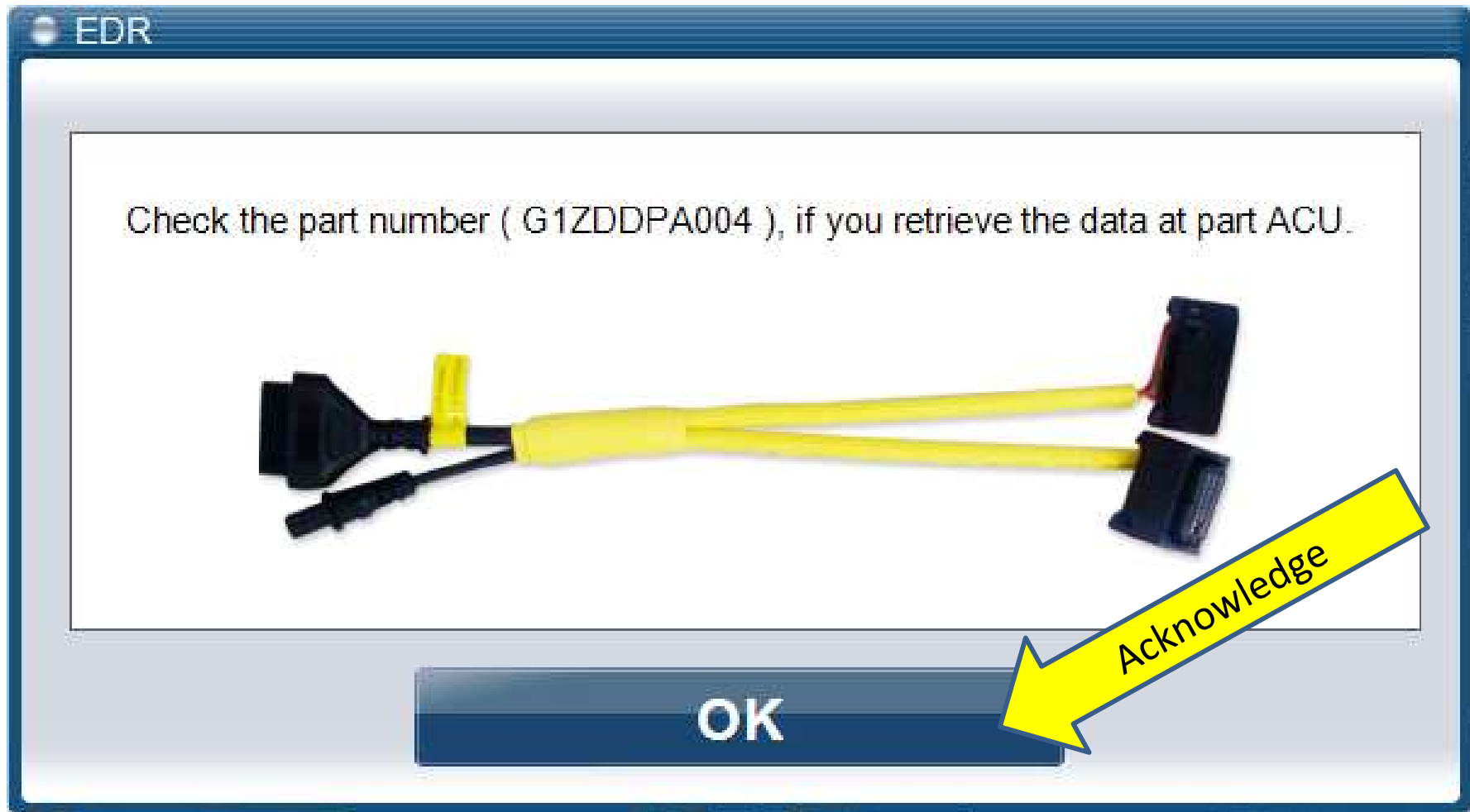
Now Type VIN here

VIN populates here

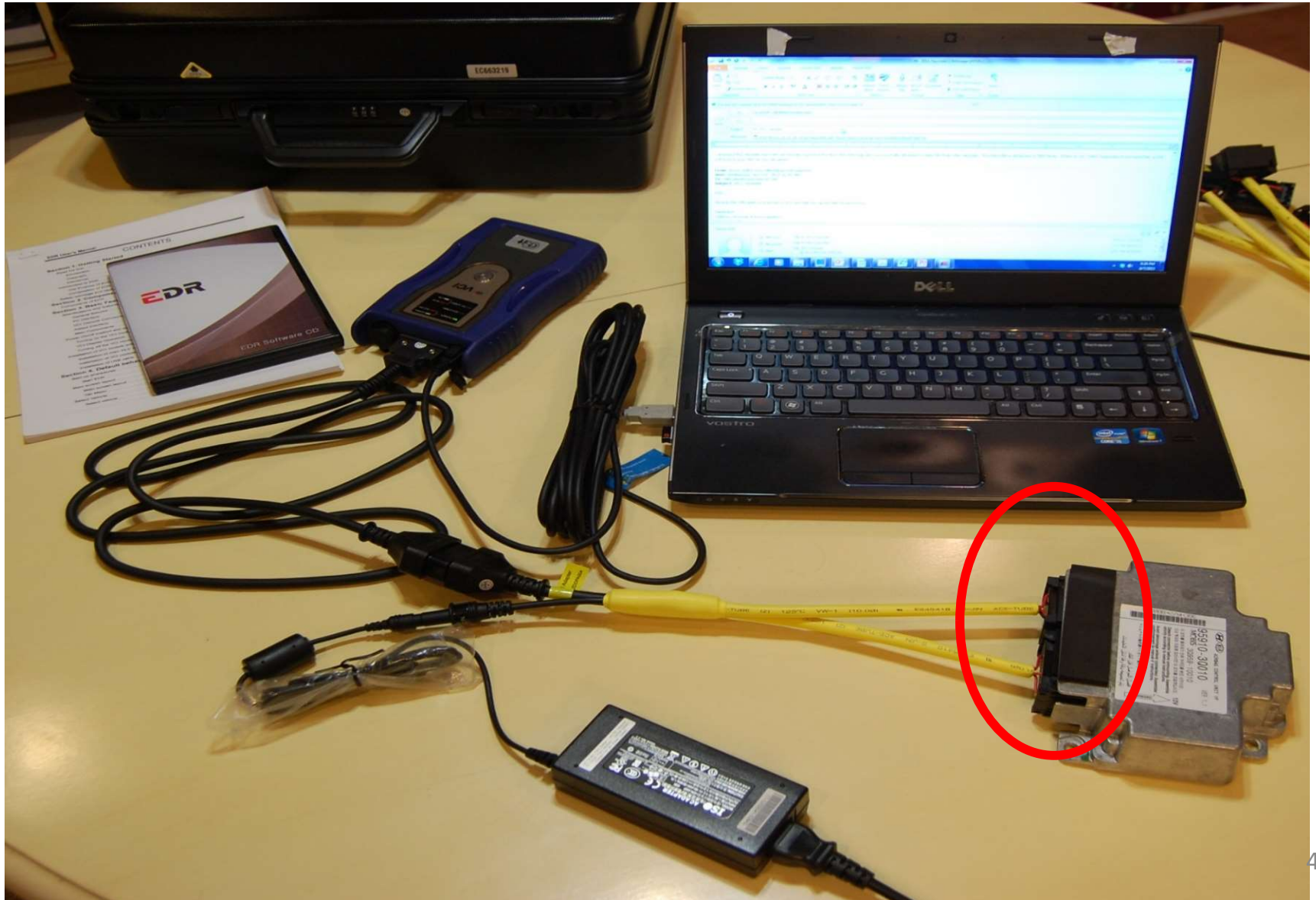
OK when done

For pre-2013's, outside of this program, google a 2013 VIN from the same model and change the last 6 digits to 0's, then iterate check digit 9 (from 0-9 or X) until it passes. (I use CDR to create mine). Example: change VIN 5NPEB4AC7CH657757 to 5NPEB4AC8DH000000. This way it is obvious you are doing a deliberate VIN substitution.

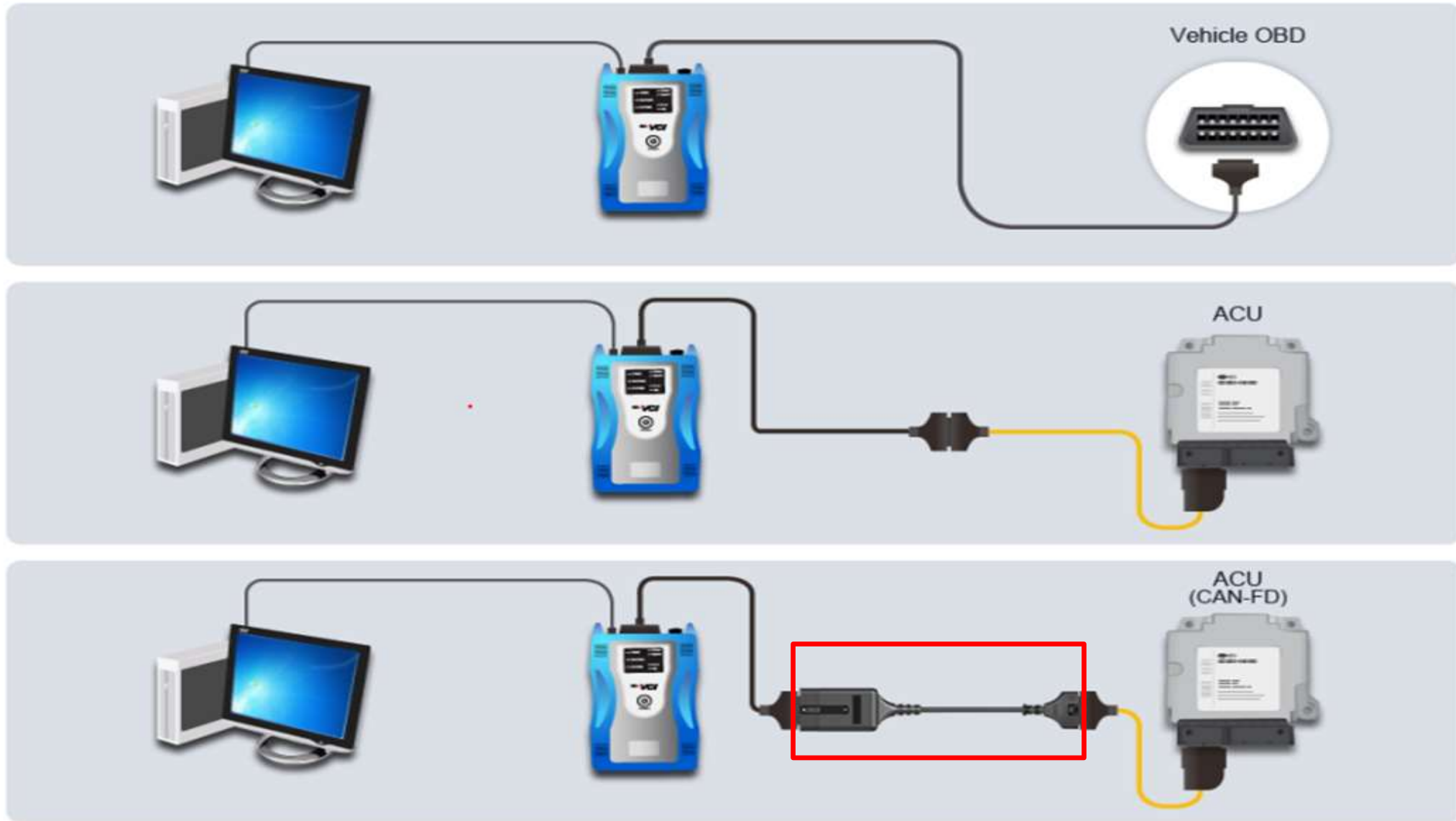
For DLC readout just OK the direct to module cable number (which you don't need) and proceed on to pressing retrieve button.



For DTM, Unplug power.
Insert Connectors into Module.
Replug power and turn VCI on again



New **CAN-FD adapter** required for DTM readouts of 2020 GV80 & other new **EDR**





Retrieve

EDR

Activate Retrieve Button



PC begins communicating thru VCI
Initializing takes a few seconds
then it will go to the next screen



You will usually see this only briefly
before the report appears

A screenshot of a software interface showing a progress message. The text is centered within a white rectangular area that has a dark blue border. The text reads "EDR Report is Writing..." on the first line and "Please wait a few seconds." on the second line.

EDR Report is Writing...

Please wait a few seconds.

IF the writing screen stays on more than 45 seconds, the software may be stuck on it. Click on the save as PDF button and it will force it to finish.



Retrieve



Software will display the first page of your report. You can scroll thru.

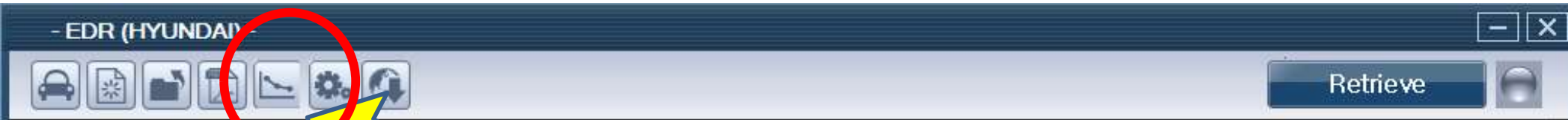
Software will suggest "EDR Report" with date/time as file name. You may want to add VIN or model/model year

Vehicle Information

HYUNDAI ELANTRA(MD) 2013 AIRBAG SYSTEM	
VIN as Programmed into EMS	

Additional Information

User-entered VIN	KMHDH4AE2DU258008
User Name	
Case Number	



Summary Report

There is a second report available that lists only the precrash data graphs (no Delta V) that is shorter. Save this report too. Filename is "Summary Report 1" Add VIN or other identifiers

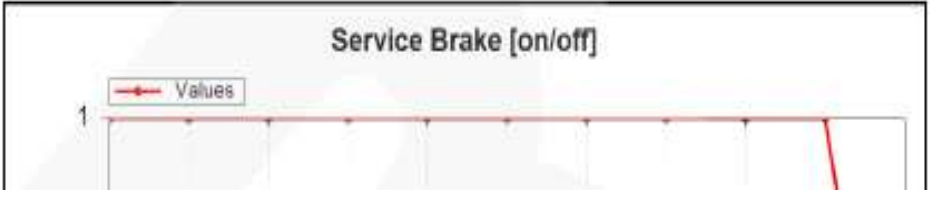
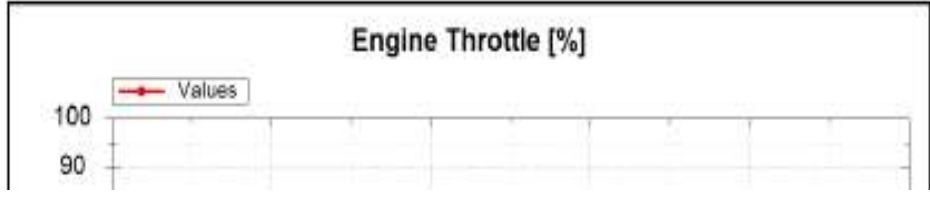
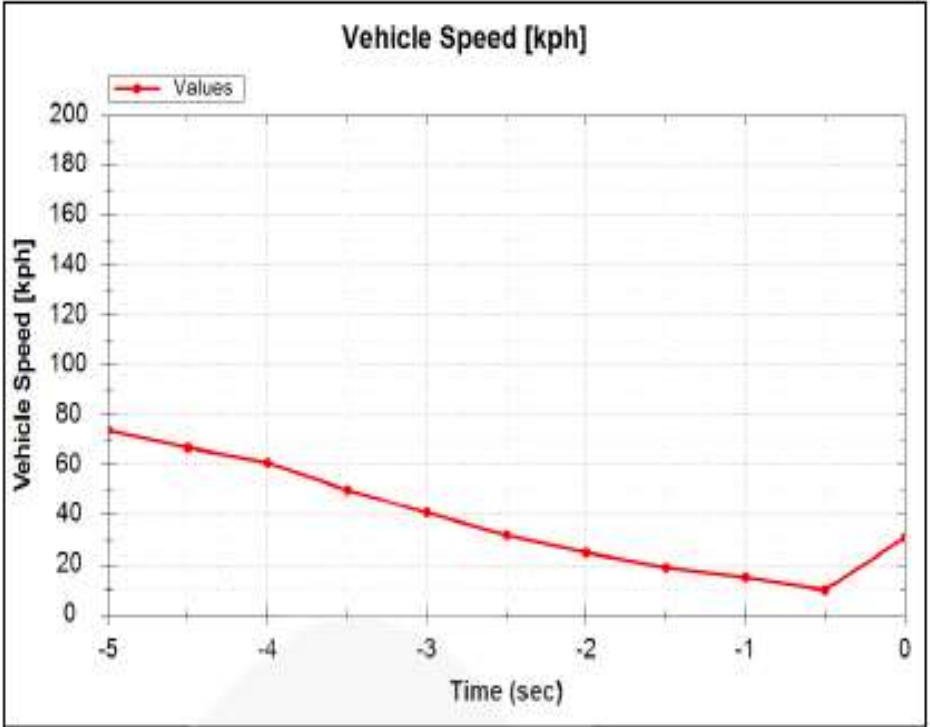
<Event 1>

Vehicle Information

HYUNDAI ΣΟΠΑΤΑ(ΥΦΑ) 2013 AIRBAG SYSTEM	
VIN as Programmed into EMS	

Additional Information

User-entered VIN	5ΠPEC4AB1DH652980
User Name	Richard R. Ruth, P.E.
Case Number	Unified ΠC01-1708341 insured Kuehnert
Crash Date	3/31/2017
Saved-on Date	2017-05-03 17:51
EDR Tool Version	E-Π-H-01-00-0019
EDR Report Version	EDR001-R01
Tire Size(s)	
Memo	



Document Your Readout

- There is no VIN stored in the EDR. There is only the VIN you typed in. You can help tie this ACM to your case by typing **module serial number** in.
- Opposing parties could demand you prove the module and file you got is from vehicle/incident under investigation.
- Photograph module in vehicle, then remove and take photo with VIN plate time stamped soon after first.
- Photograph benchtop setup making sure module serial number is visible in at least one photo.
- Make sure time/date in computer and camera are correct so the file readout time and the time stamp on the picture you took of the setup agree.

Additional Kia/Hyundai Issues

- No VIN stored in the ACM. As of March 2016, a user entered VIN prints in the PDF report, –you must document that the report you got came from the module/vehicle you are investigating (pictures or video).
- Reports are PDF's with a minimal security. The other side can claim you **could** have manipulated data. Have other side present at readout and give them a copy onsite, and/or **secure the module into evidence** so it can be read again (if necessary) to prove data validity.
- Software level listed in report said 1.0 through first several changes, but as of April 2014 is updated each time the software is updated. As of August 2021 we are on Version 44 Hyundai/43 Kia software.

Take Equipment Apart

- After saving, push and hold VCI power on button for 3-5 seconds to turn it off.
- Be careful not to disturb module for ??? minutes (not stated in data limitations – est 3)
- Connectors into VCI have “position assurance devices” (releases) on them – be sure to release before trying to pull them out – do not use brute force and break releases.

Any Risk of Spoiling Data?

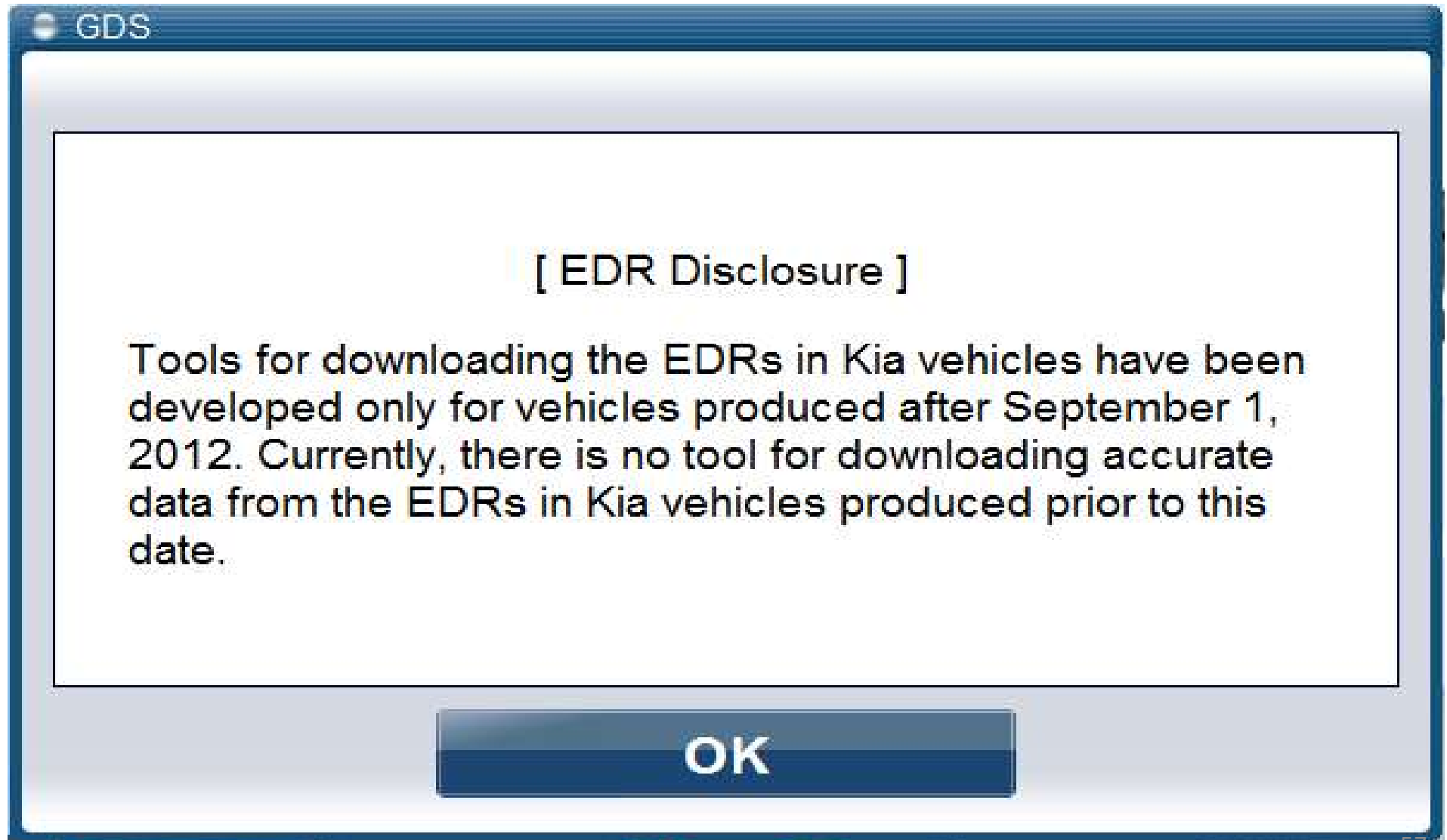
- Just as with Bosch CDR, rough handling of a powered module could set a new event. Clamp module to desk when reading DTM.
- Some cables fit into multiple modules but have different pinouts. Power applied to wrong pins could “smoke” the module – they are NOT diode protected like some GM are.
- Model you enter tells hardware what comm protocol to use – if you input wrong model it may not communicate at all.
- If correct protocol is used ALL hex data is retrieved.
- Early CDR user conference reports said identifying wrong model may result in improper interpretation.

Back Powering Issues

- The VCI module is meant to be powered by the **DLC, or** external power in direct to module cable.
- If the car battery is dead, there is no provision for external power input to the VCI or DLC cable.
- For back powering, you must back power BOTH the ACM fuse and the DLC fuse
- Alternative: Use a DLC to DLC banana plug breakout box and plug power to pin 16 and ground to pins 4&5. Or buy a DLC “Y” connector and cut off one end of the Y, attach external power jack to power and ground on the cut off pigtail (call instructors to pursue making one).

More on Reading 2010-2012 Modules

Remember this Disclaimer?



Choice of Words

- Kia/Hyundai chose to say “**There IS NO TOOL FOR DOWNLOADING ACCURATE DATA**” (before 2013MY). The software will prevent you from reading data if it is given a 2010, 2011m or 2012 model year VIN (10th digit A, B, or C)
- Kia and Hyundai are not required by any regulation to release a publicly available EDR tool for 2010-2012 model year vehicles with EDR, and have not done so.
- **By inputting a 10th VIN digit of D of the same model* to the software, empirical testing shows the hex data of those vehicles equipped with EDR will accurately download**, but because the Part 563 standard was changing, some data storage locations and scale factors changed between 2010 and 2013.
- The 2013 decoder does **not accurately interpret** data fields that changed locations or scale factor in 2013. (Example: 2011 RPM had resolution of 64 rpm per count, 2013 assumes 100 rpm/ct – and the starting memory address shifted by one position)
- The speed and Delta V of greatest interest to recon **are** accurately interpreted in most** 2010-2012 models by the 2013 software.
- **Users must assume responsibility for insuring they understand what data can and cannot be relied upon** if they choose to retrieve and use 2010-2012 data.”

*2020-2012 Hyundai Sante Fe must be read as a 2013 Genesis

** Minor exceptions noted in SAE 2014-01-0502.

2010-2012's with EDR data in pink

Model	Vehicle Size, Descrip	Model Years			
		2010	2011	2012	2013*
KIA		Cable #	Cable #	Cable #	Cable #
CADENZA (VG, 2014) (Azera sister)	112.0" WB	YG requires cable 13 per software			
FORTE (TD 2013, YD 2014))	104.3"WB, compact	10	10	10	10 (TD)
K900 (KH 2015)	119.9"WB				
NIRO					
OPTIMA (2013 TF QF, 2016 JF, JFA)	110.0" WB sedan	No	4	4	4 (TF/QF)
OPTIMA HYBRID	110.0" WB sedan	No	4	4	(TF HEV)
RIO (UB)	94.5"WB, compact	No	No	8	8(UB)
RONDO (Canada only 2011 MY+)		No	No	9	(not officially sup
SEDONA (VQ '14, YP '15)	113.8/118.9" WB miniv	No	No	No	No
SORENTO (XM to 2015)(UMA 2016)	106.3" WB, crossover	No	3	3	3(XM)
SOUL (AM 2013, PS 2014+)	100.4" WB	¹ see note 1	¹ see note 1	1	1(AM)
SPORTAGE (SL)	103.9" WB, crossover	No	Yes	2	2(SL)
STINGER					
HYUNDAI					
ACCENT (RB)	94.5"WB, compact	No 10	No?	⁵ see note 2	5(RB)
AZERA (HG)	109.4"WB, sedan		likely	Yes	7(HG)
ELANTRA Coupe(JK), Sedan(UD/MD)	104.3"WB, compact	No	Yes	8	8(JK/UD/MD)
ELANTRA GT (GD) (aka "i30")	former Elantra Touring	old model		new model	1
EQUUS (VI)(stretch genesis)	119.9" WB, luxury seda	?	yes?	yes?	9(VI)
GENESIS (Coupe BK, Sedan BH/DH))	115.6" WB, luxury seda	9 shave keyway	9 shave keyway	?	9(BK, BH)
GENESIS BRAND G80, G90 MODELS					
IONIQ EV and HEV, 2019 G70(IK)					
KONA (New very small SUV)					
NEXO					
SANTE FE (Sport DMA, NC)	106.3" WB, crossover	9 shave keyway note 3	9 shave keyway	9 shave keyway	7(NC,DMA)
SONATA (YF sedan, YF HEV)	110.0" WB sedan		4	?	4(YF)
TUCSON (LM to 2015)(TL in 2016)	103.9" WB, crossover	Yes	Yes	2	2(LM)
VELOSTER coupe (FS)	104.3"WB, compact	out of productior		?	5(FS)

2010-2012 Santa Fe Use model code BK

Getting accurate 2010-12 data

- Thoroughly brief counsel on issues and get agreement on a plan of action before doing anything.
- Read the module with the 2013 tool as an interim step, to see if speed & Delta V indicate data is important to your case (while it is still in your chain of custody).
- If data is insightful, and you are law enforcement, ask Hyundai to send to supplier in Korea for correct interpretation. Kia typically says it is not possible. If sending, write VIN on housing and back plate, THOROUGHLY document identity and condition of module being sent (take pictures of all sides including back of module).
- Send chain of custody documents with module, request they be filled out at each step. Supplier readouts have been excluded due to loss of chain of custody (which is why you read it with the 2013 tool first).

Handling 2010-2012's cont'd

- If a manufacturer's interpretation is available, rely upon it at trial versus the 2013 tool report.
- Send copies of both 2013 tool readout and supplier readout to Rick Ruth who acts as a Kia/Hyundai pre-2013 database. Hyundai readouts help reverse engineer Kia hex data.
- For Kia, rely upon SAE 2014-01-0502 to establish admissibility of speed and ΔV .
- If steering, rpm, or other data not validated in SAE 2014-01-0502 are important to your case, contact Rick Ruth who has reverse engineered the proper decoder for many models.

Mechanics of a pre-2013 Readout

- Input same model* (just different MY) whenever possible into tool.
- Some models use an “ISO 9141” communication protocol, some use “KPW2000” protocol. If you pick the wrong model it may try to use the wrong protocol and fail.
- *The 2010-12 Santa Fe protocol is different than the 2013 protocol. You must read a 2010-12 Santa Fe’s using the 2013 Genesis model code BK.
- A rib on the 2012 Genesis and Santa Fe top right module side connector must be shaved off for vehicle side connector to fit on.

Event Data Recorder Use in Traffic Crash Reconstruction

Kia/Hyundai Event Data Recorder Technician

END



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