

info@chiptuningshop.co.uk

I/O Terminal Tool - Function Manual.



The I/O Terminal tool can offer functions that normally would normally require the ECU to be opened and a programmer connected, however it can accomplish these procedures without opening the ECU and in some cases all from OBD.

Using this tool you gain full control of the ECU's memories. You can read/write eeprom and internal/external flash memories (where available) All operations are done over K-line or CAN bus without need to open ECU.

In the following pages you will find a manual describing how to navigate and use the basic functions of the I/O Terminal Tool.

To begin using the tool, you will need to download the software. The current release can be found at <u>http://www.chiptuningshop.co.uk/downloads/</u>

1/ Software Licenses and Activations.

Software licenses are held on security SIM cards.

You can access the SIM card by pressing the yellow button on the side of your device, which will release the SIM card tray as shown below:



Bosch, Siemens and Denso licenses must be held on their own individual SIM cards.

Marelli and Easytronic can be either added to a Siemens SIM card in the form of a activation file, or can be supplied on a separate card.

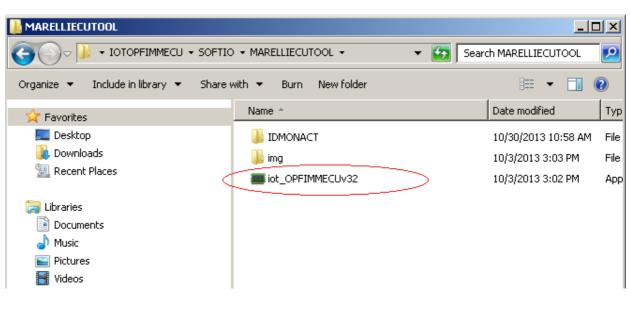
You must insert the corresponding SIM card when opening one of the I/O Terminal Tool software programs.

Adding new licenses via activation file.

Here is a short description of how to add extra activations to an existing SIM card.

First you must read your unit ID:

1. Launch Marelli/Easytronic ECU tool software.



2. Select "Update" and then push "Get Device Info" button. In log window you will see your unit ID.

BUPEL/FIAT MAGNETI MARELLI ELU TUUL	
Main	Misc.
Status Log - Tool Select Memory Dump Wiring Diagrams About	Get Device Info
Update 🗾	Update firmware using file
Update Il:07:08 AM] Status : Finding USB Device Status: OK [11:07:09 AM] Device bootboader version : V0000.0002 [11:07:09 AM] Device application installed : ULTIMA I/O TERMINAL BOOTLOADER [11:07:09 AM] Di : IDMON-BACILA1234 [11:07:09 AM] Status : Waiting For Commands [11:07:09 AM] Status : Device waiting for commands.	Update firmware using file
The second se	

Send the ID to <u>info@chiptuningshop.co.uk</u> and request your desired activation. We will return you a file. Follow the instructions below to activate your new software licenses.

Marelli/Easytronic ECU TOOL folder structure overview.

Here you can see ecu tool folder structure. "IDMONACT" and "img" folders must be in same folder as Marelli/Easytronic ecu tool software.

I MARELLIECUTOOL				1×
G V I VIOPFIMMECU + SOFTIC	👻 🐼 Sear	h MARELLIECUTOOL	2	
Organize 👻 Include in library 👻 Share	with 🔻 Burn New folder		III 🕶 🔲 (2
🙀 Favorites	Name *		Date modified	Тур
🧮 Desktop	🐌 IDMONACT		10/30/2013 10:58 AM	File
Downloads	鷆 img		10/3/2013 3:03 PM	File
🔄 Recent Places	iot_OPFIMMECUv32		10/3/2013 3:02 PM	App
🥽 Libraries				



In "IDMONACT" folder you must have folder with your current I/O TERMINAL unit ID. In this folder all your activations are placed.

📙 IDMONACT		
GOV 🖟 🗸 SOFTIO 🗸 MARELLIECUTO	ool 🕶 Idmonact 👻 🛛 🗸 🚱	Search IDMONACT
Organize 👻 Include in library 👻 Share	with 🔻 Burn New folder	= 🛨 🚺 🔞
🙀 Favorites	Name *	Date modified Typ
Desktop Downloads E Recent Places	IDMON-BACILA1234	10/30/2013 11:29 AM File

Here you can see in your I/O TERMINAL unit ID folder activation files. OPELECU.bin is marelli ecu tool activation file.

IDMON-BACILA1234		
GOV J · MARELLIECUTOOL · IDM	ONACT - IDMON-BACILA1234	👻 🛃 Search IDMON-BACILA1 👂
Organize 🔻 Include in library 👻 Share	with 🔻 Burn New folder	III 👻 🗔 🔞
🙀 Favorites	Name +	Date modified Typ
💻 Desktop	📥 OPELECU	9/7/2012 5:30 PM VLC
Downloads		
Secont Discos		

If the software does not see the activation file it shows an error.

Error : IDMON File C:\Users\Chiptuningshop\Desktop\IOTOPFIMMECU\SOFTIO\MARELLIECUTOOL\IDMONACT\ID MON-IDMON-BACILA1234\OPELECU.bin does not exist

2/ Reading memories from the ECU.

Select the desired ECU type from the drop down list:

ULTIMA I/O TERMINAL ECU TOOL V0000.0050 - [VAG Siemens SIMOS 3PA]	
Main	Connect
Status Log - Tool Select Memory Dump About	Disconnect
VAG Siemens SIMOS 3PA	
VAG Siemens SIMOS 3PA	Read 29F400BB Flash
VAG Siemens SIMOS 3PB	Write 29F400BB Flash
VAG Siemens SIMOS 3PC VAG Siemens SIMOS 6.2	Read 93C76 EEPROM
VAG Siemens SIMOS 7.1	Write 93C76 EEPROM
VAG Siemens SIMOS 7.1A	WHILE 93C/6 EEPROM
VAG Siemens SIMOS 9.1 Ford Siemens SIM210 ECU Tool	

Now you can establish communications with the ECU using the "Connect" or "Enter Superv. Mode" button. The tool will start communicating with the controller and pass security to gain access to the memories as shown below:

ILTIMA I/O TERMINAL ECU TOOL V0000.0050 - [VAG Siemens SIMOS 3PA]	
Main Status Log - Tool Select Memory Dump About VAG Siemens SIMOS 3PA • [14:12:19] Device Status : device disconnected • [14:12:19] Device Status : device connected • [14:12:19] Device Status : device connected • [14:12:19] Device Name : USB_FT232RL • [14:12:19] Status : Finding USB Device Status: OK • [14:12:19] Bootloader version : V0000.0002 • [14:12:19] Bootloader ID : ULTIMA I/O TERMINAL BOOTLOADER • [14:12:19] Application installed : ULTIMA I/O TERMINAL V0000.0011 • [14:12:28] Status : Finding USB Device Status: OK •	Connect Disconnect Disconnect Read 29F400BB Flash Write 29F400BB Flash Read 93C76 EEPROM Write 93C76 EEPROM

Once you are connected to the ECU, you can proceed to read/write the available memories.

We recommend that you read and save a backup of all memories before making any changes!

Press the "read" button for the desired memory and the software will begin reading the data. Once complete it will alert you in the dialogue window.

In the image below we have read the eeprom memory and you can see that the software reports to us once the process is complete "**Reading 93C76 EEPROM OK**". Also there is a progress bar at the bottom of the window which indicates the status of the reading operation.

Please note, on this ECU, the software has also automatically identified the immobiliser PIN code once it has read and parsed the eeprom data. Where available, the software will also offer other immobiliser, VIN and mileage functions after the reading of memory containing this info is completed.

🗱 ULTIMA I/O TERMINAL ECU TOOL V0000.0050 - [VAG Siemens SIMOS 3PA]	
Main Status Log - Tool Select Memory Dump About	Connect
	Disconnect
VAG Siemens SIMOS 3PA	Read 29F400BB Flash
[14:12:19] Device Status : device disconnected [14:12:19] Device Status : device connected	Write 29F400BB Flash
[14:12:19] Device Name : USB_FT232RL [14:12:19] Status : Finding USB Device Status: OK	Read 93C76 EEPROM
[14:12:19] Bootloader version : V0000.0002 [14:12:19] Bootloader ID : ULTIMA I/O TERMINAL BOOTLOADER	Write 93C76 EEPROM
[14:12:19] Application installed : ULTIMA I/O TERMINAL V0000.0011	
[14:12:28] Status : Finding USB Device Status: OK [14:12:28] Status : Executing RAM_IMG	
[14:12:29] Ram Image App Name : 2XCAN KLINE RAMEXE [14:12:29] Ram Image App Version : V0000.0001	
[14:12:30] Status : Connecting OK [14:12:31] Status : S1 1000	
[14:12:33] Status : S3 OK [14:12:33] Status : S4 OK	
[14:12:36] Status : S5 OK	
[14:12:36] Status : R/W functions aivalable [14:12:36] Status : Device waiting for commands.	
[14:13:06] Status : Finding USB Device Status: OK [14:13:09] Status : Reading 93C76 EEPROM OK	
[14:13:09] PINCODE : 08934 [14:13:09] Status : Device waiting for commands.	

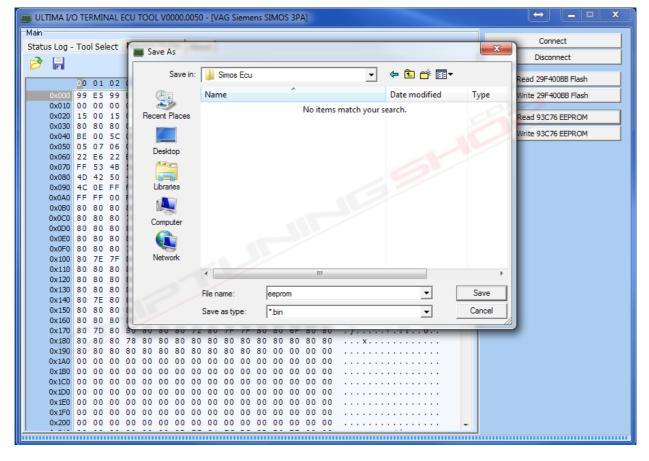
Now the reading operation is complete this file is loaded into the buffer.

To view and save the file, you need to select the "Memory Dump" tab. You will be able to see

the read file in this window. To save the file, click the save icon as highlighted in the image below and save a copy of the data.

ULTIMA I/	O TEI	RMIN	NAL E	CU	тоо	L V0(000.0	0050	- [V#	AG Si	ieme	ns S	IMO:	5 3P/	4]			
Main —	_								. 1									Connect
Status Log	001	I Sel	ect	Mer	nory	Dur	np [Abo	ut									Disconnect
)																	Disconnect
	0.0	01	02	03	04	05	06	07	08	09	0 A	0 B	00	0 D	0E	0F	0123456789ABCDEF	Read 29F400BB Flash
0x000	_					E 5		54		00					00		TTT	Write 29F400BB Flash
0x010	00	00	00	00	00	00	00	00	35	C5	00	00	00	00	15	00	§.	
0x020	15	00	15	00	00	00	00	00	80	00	00	80	80	80	80	80	§.§	Read 93C76 EEPROM
0x030					00	64			00	00	E 5	04	00	00		00	d	Write 93C76 EEPROM
0x040		00	5C	03	1E	01	37	37	37	00	00	08	00	08		08		WITE 93C76 EEPROM
0x050			06	01	05	07	06	01	05	07	06	01	02	02	02			
0x060	EF				22	00			00	00	10	00	00	10	FF		CK7770X04474657	
0x070 0x080	4D		4B 50	5A 42	37	5A 36	30 59	59 36	30 59	34 33	34 30	37 33	34 32	36 39	35 39	31	. SKZ7Z0Y0447465T MBPB16Y6Y3032991	
0x080	40		FF	FF	FF	20	FF		FF	L								
0x0A0			00	FF	00	00	01	00	52	00	53	00	80	80	80		R. S	
0x0B0	80		80	80	80	80	80	7A	80	80	80	80	80	6B	80	80	zk	
0x0C0	80	80	80	70	80	7B	7B	7F	7C	6F	80	80	80	80	80	6F	p.{{I 00	
0x0D0	80	80	80	80	80	6C	80	80	80	80	80	80	80	80	80	80		
0x0E0	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80		
0x0F0	80	80	80	7B	80	80	80	80	80	6E	80	80	80	80	80	72	{nr	
0x100	80	7E	7F	80	7E	77	80	80	80	80	80	79	80	80	80	80	.~I.~wy	
0x110			80	80	80	80	80	80	80	80	80	80	80	80	80	80		
0x120			80	80	80	80	80	80	80	80	80	80	80	80		80		
0x130			80	80	80	80	80	80	80	80	80	80	80	80		80		
0x140			80	80	80	80	-		80	80	80	80		6C		80	· ~· · · · · y · · · · · · ·	
0x150 0x160			80 80	80 80	80 80	80	80	80 80		80 80								
0x160 0x170				80	80	80	80	72	80	80 7F	80 7F	80	80	6F	80		. }r.00o	
0x180			80	78	80	80	80	80	80	80	80	80	80	80		80	· · · · X · · · · · · · · · · · · · · ·	
0x190		-	80	80	80	80	80	80	80	80	80	80	00	00		00		
0x1A0			00	00	00	00	00	00	00	00	00	00	00	00		00		
0x1B0	00		00	00	00	00	00	00	00	00	00	00	00	00		00		
0x1C0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
0x1D0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
0x1E0	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00		
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0x200	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	•••••••	

Choose the folder to save the file and proceed to save. Then repeat these steps for each memory.



Once you have finished reading all desired memories press the "Disconnect" or "Exit Superv. Mode" button.

3/ Writing memories to the ECU.

Similar to the reading operation you will need to select the ECU and connect to it using the "Connect" or "Enter Superv. Mode" button.

Then load the file to be written into the buffer by selecting the "Memory Dump" tab and pressing the load icon as highlighted in the image below:

ULTIMA I/O TERMINAL ECO TOOL V0000.00	150 - [VAG Siemens StiviOS SPA]		
Main			
Status Log - Tool Select	teres and the second	x	Connect
Open			Disconnect
(👏) 🗖			
Look in	🗉 🌗 Simos Ecu 🔹 🔹	← 🗈 📸 📰 ▼	Read 29F400BB Flash
0 01 01			
0x00000 FA 00 26	Name	Date modified Type	Write 29F400BB Flash
0x00010 FA 00 46 🔊	🖻 eeprom.bin	23/01/2015 14:15 BIN File	
0x00020 FA 0 5 30 Recent Places	🖻 flash.bin	23/01/2015 14:17 BIN File	Read 93C76 EEPROM
0x00030 FA 05 40			Write 93C76 EEPROM
0x00040 FA 05 50	🖻 new_flash.bin	23/01/2015 14:17 BIN File	Write 93C76 EEPROM
0x00050 FA 05 60 Desktop			
0x00060 FA 05 /0			
0x00080 FA 0 5 90			
0x000A0 FA 05 B0			
0x000B0 FA 05 C			
0x000D0 FA 05 E1 Computer			
0x000E0 FA 05 FC			
0x000F0 FA 05 00			
0x00100 FA 0.5 10 Network			
0x00110 FA 05 20			
0x00120 FA 05 30	•	•	
0x00130 FA 05 40	Character Real Lin	▼ Open	
0x00140 FA 05 50	File name: new_flash.bin	• Open	
0x00150 FA 05 60	Files of type: *.bin		
0x00160 FA 05 70			
0x00170 FA 05 80 03 FA 05 8	H US FA US 66 US FA US 66 US		
0x00180 FA 05 90 03 FA 05 9	4 03 FA 00 C6 44 FA 05 9C 03	D	
0x00190 FA 05 A0 03 FA 05 A	4 03 FA 05 A8 03 FA 05 AC 03		
	4 03 FA 05 B8 03 FA 05 BC 03		
0x001B0 FA 05 C0 03 FA 05 C			
	4 03 FA 05 D8 03 FA 05 DC 03		
	4 03 FA 05 E8 03 FA 05 EC 03		
	4 03 FA 05 F8 03 FA 05 FC 03		
	4 04 FA 05 08 04 FA 05 0C 04		
0x00200 AA 17 00 00 32 0B 0	0 00 B2 09 00 00 D4 07 00 002	· · · · · · · · · · · · · · · · · · ·	

Select the desired file and switch to the main "Status Log – Tool Select" tab. Press the "write" button for the desired memory and the software will begin writing the data into the ECU.

DO NOT INTERRUPT THE WRITING PROCESS!

The dialogue window will alert you of the status of the operation and the progress bar at the bottom of the window is also functional during the write period, as shown in the image below.

ILTIMA I/O TERMINAL ECU TOOL V0000.0050 - [VAG Siemens SIMOS 3PA]	
Main	1
Status Log - Tool Select Memory Dump About	Connect
	Disconnect
VAG Siemens SIMOS 3PA	
	Read 29F400BB Flash
[14:12:29] Ram Image App Name : 2XCAN KLINE RAMEXE	Write 29F400BB Flash
[14:12:29] Ram Image App Version : V0000.0001	
[14:12:30] Status : Connecting OK	Read 93C76 EEPROM
[14:12:31] Status : S1 1000	Write 93C76 EEPROM
[14:12:33] Status : S3 OK [14:12:33] Status : S4 OK	WHILE 93C/6 EEPROM
[14:12:33] Status : 54 OK	
[14:12:30] Status : SJ OK [14:12:36] Status : R/W functions aivalable	
[14:12:36] Status : Device waiting for commands.	
[14:13:06] Status : Finding USB Device Status: OK	
[14:13:09] Status : Reading 93C76 EEPROM OK	
[14:13:09] PINCODE : 08934	
[14:13:09] Status : Device waiting for commands.	
[14:15:06] Status : Finding USB Device Status: OK	
[14:17:03] Status : Reading AM29F400BB Flash OK	
[14:22:10] Status : Finding USB Device Status: OK	
[14:22:10] Status : Erasing AM29F400BB Flash Block 0 OK	
[14:22:11] Status : Erasing AM29F400BB Flash Block 1 OK	
[14:22:11] Status : Erasing AM29F400BB Flash Block 2 OK	
[14:22:11] Status : Erasing AM29F400BB Flash Block 3 OK	
[14:22:12] Status : Erasing AM29F400BB Flash Block 4 OK	
[14:22:12] Status : Erasing AM29F400BB Flash Block 5 OK	
[14:22:13] Status : Erasing AM29F400BB Flash Block 6 OK	
[14:22:13] Status : Erasing AM29F400BB Flash Block 7 OK	
[14:22:14] Status : Erasing AM29F400BB Flash Block 8 OK	
[14:22:14] Status : Erasing AM29F400BB Flash Block 9 OK	
[14:22:15] Status : Erasing AM29F400BB Flash Block 10 OK	
[14:24:56] Status : Writing AM29F400BB Flash OK	
[14:24:56] Status : Device waiting for commands.	
· · · · · · · · · · · · · · · · · · ·	

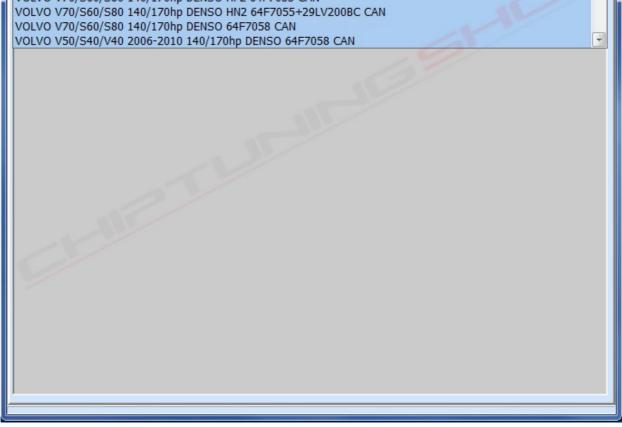
Once you have finished writing all desired memories press the "Disconnect" or "Exit Superv. Mode" button.

4/ Checksum Tool.

In the Denso software, there is a tool for correct checksums in the flash memory. To use this tool, you need to load the file to be repaired into the buffer as described in the previous operation.

Then select the "DENSO CRC CALCULATOR" tool from the main menu.

DENSO ECU TOOL MD2 V00.18	— — X
Main	
Status Log - Tool Select Memory Dump About	
Select Tool	-
Select Tool	<u>^</u>
Update	100
DENSO CRC CALCULATOR	1
JAGUAR/LANDROVER P3.0NA / JAGUAR XF 4.2SC DENSO 64F7058	
VOLVO V70/S60/S80 140/170hp DENSO HP2 64F7055 CAN	
VOLVO VZO/CEO/CEO 140/170ha DENCO UNA E4EZOEE LOUVODODO CAN	



Select the ECU type from the drop down menu of the CRC tool.

I DENSO ECU TOOL MD2 V00.18 - [DENSO CRC CALCULATOR]	
DENSO ECU TOOL MD2 V00.18 - [DENSO CRC CALCULATOR] Main Status Log - Tool Select Memory Dump About DENSO CRC CALCULATOR [14:46:08] Device Status : device disconnected [14:46:09] Device Status : device connected [14:46:09] Device Status : Finding USB Device Status: OK [14:46:09] Bootloader version : V0000.0002 [14:46:09] Bootloader ID : ULTIMA I/O TERMINAL BOOTLOADER [14:46:09] Application installed : ULTIMA I/O TERMINAL V0000.0011	Type Select MAZDA 2 1.5 64#7058 MAZDA 2 1.5 64#7058 MAZDA 2 1.5 64#7058 SUZUKI 1.3/1.5/1.6 64F7058 SUZUKI 1.3/1.5/1.6 64F7058 SUZUKI 1.3/1.5/1.6 64F7058 SUZUKI 1.3/1.5/1.6 64F7058 SUZUKI 1.2/5/3.2 DID L200/PAJERO 64#7 MITSUBISHI 2.5/3.2 DID L200/PAJERO 64#7 HOpel Vectra C/Signum 3.0 64F7058 100pel 1.7CDTI 64F7058 100pel 1.7CDTI 64F7058 2. Select Yupe from Type Select" combobox. 3. Use functions you need. 4. Save file using Memory Dump [*] page. *CRC Check* - checks if CRCs are OK. *CRC Repair* - checks CRCs and repairs if needed.

Now press the "CRC Check" button, and the software will check and report on the status of each checksum block in the file.

Confirm	X
2	CRC BLOCK 0 : 00006000 : 000FFAFF : D7D00FA0 : 02A0D42B : FAILED CRC BLOCK 1 : 000FFB98 : 000FFFFF : 44A5AB62 : 527E8E11 : FAILED CRC BLOCK 2 : 00006000 : 0006591F : 25BC3502 : 25BC3502 : OK CRC BLOCK 3 : 00080000 : 000C431F : 2494792B : 9FA992FE : FAILED CRC BLOCK 4 : 000FFC50 : 000FFFF7 : 4C27FD97 : 5A00E046 : FAILED CRC BLOCK 5 : 00006000 : 0007FFFF : 25BC9EBB : 25BC9EBA : FAILED CRC BLOCK 5 : 00006000 : 0007FFFF : 0CB9163F : 3789DACB : FAILED CRC BLOCK 6 : 00080000 : 000FFAFF : 0CB9163F : 3789DACB : FAILED CRC BLOCK 7 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 8 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 9 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 10 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 13 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 14 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 15 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 16 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK CRC BLOCK 16 : 00000000 : 00000000 : 5AA5A55A : 5AA5A55A : OK

If you see "FAILED" in any block then you need to repair these checksums, proceed by pressing the "CRC Repair" button and then a new report is displayed:

Confirm	
	CRC BLOCK 0 : 00006000 : 000FFAFF : D7D00FA0 : 02A0D42B : REPAIRED CRC BLOCK 1 : 000FFB98 : 000FFFFF : 44A5AB62 : 527E8E11 : REPAIRED CRC BLOCK 2 : 00006000 : 0006591F : 25BC3502 : 25BC3502 : OK CRC BLOCK 3 : 00080000 : 000C431F : 2494792B : 9FA992FE : REPAIRED CRC BLOCK 4 : 000FFC50 : 000FFFF7 : 4C27FD97 : 5A00E046 : REPAIRED CRC BLOCK 5 : 00006000 : 0007FFFF : 25BC9EBB : 25BC9EBA : REPAIRED CRC BLOCK 5 : 00006000 : 0007FFFF : 0CB9163F : 3789DACB : REPAIRED CRC BLOCK 6 : 00080000 : 000FFAFF : 0CB9163F : 3789DACB : REPAIRED CRC BLOCK 7 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 8 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 9 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 10 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 11 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 12 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 14 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 15 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK CRC BLOCK 16 : 00000000 : 00000000 : 5A45A55A : 5A45A55A : OK

The software attempts to repair the bad checksums, **however you must verify that they are all fixed by pressing the "CRC Check" button again**. If some blocks still display "FAILED" you must repeat the CRC repair process.

The checksum blocks must be calculated in a certain order, so sometimes it is necessary to carry out the repair function more than once to fix all bad sections.

Once all blocks show as OK the checksums have been repaired successfully, it will show you a window like the one below. You can now save the updated file, and then load this new file into the buffer when you are ready to write to the ECU.

Confirm
CRC BLOCK 0: 00006000: 000FFAFF: D7D00FA0: D7D00FA0: OK CRC BLOCK 1: 000FFB98: 000FFFFF: F8646C6F: F8646C6F: OK CRC BLOCK 2: 00006000: 0006591F: 25BC3502: 25BC3502: OK CRC BLOCK 3: 00080000: 000C431F: 2494792B: 2494792B; OK CRC BLOCK 4: 000FFC50: 000FFFF7: 4C27FD97: 4C27FD97: OK CRC BLOCK 5: 00006000: 0007FFFF: 25BC9EBB: 25BC9EBB: OK CRC BLOCK 6: 00080000: 0000FFAFF: 0CB9163F: 0CB9163F: OK CRC BLOCK 7: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK CRC BLOCK 9: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK CRC BLOCK 10: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK CRC BLOCK 11: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK CRC BLOCK 12: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK CRC BLOCK 11: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK CRC BLOCK 16: 00000000: 00000000: 5AA5A55A: 5AA5A55A: OK

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