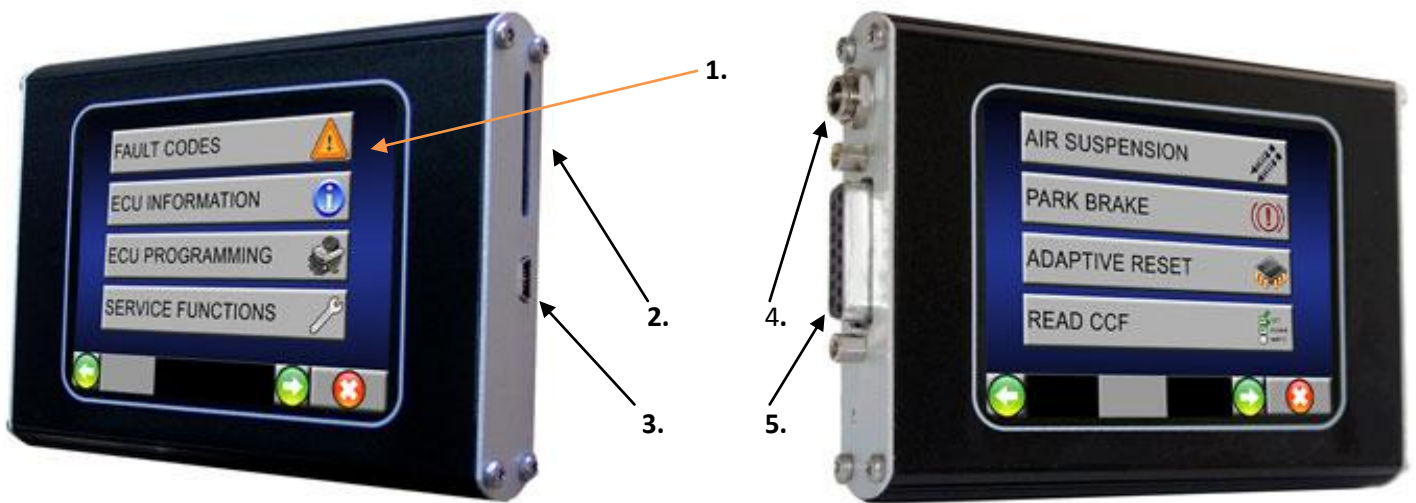


INTRODUCING THE NANOCOM EVOLUTION



- 1 - Touch Screen Display
- 2 - SD - Card Slot
- 3 - Mini - USB Connector
- 4 - 12v Dc Socket
- 5- OBD Cable Connector

Dimensions:

- Length - 11.3 cm.
- Width - 1.9 cm.
- Height - 8.4 cm.
- Weight - 221 gr.

***For security, all Nanocom units are dispatched without the Unlock Codes!
How to activate a new Nanocom unit and obtain the Unlock Codes please read and follow the steps presented in this guide.***

! IMPORTANT- CONNECTION METHOD: !

To avoid damaging your unit and the possibility of invalidating your warranty, you must connect your Nanocom Evolution in the following way:

- 1. Connect the OBD lead to the Nanocom Evolution and secure it using the fixing screws first***
- 2. Connect the lead to the OBD socket in the vehicle.***
- 3. When you wish to disconnect the Nanocom, you must remove the lead from the vehicle OBD socket first. (Disconnecting from the Nanocom first while the OBD lead is still plugged into the vehicle may blow the vehicles diagnostic socket fuse or internally damage the Nanocom itself)***

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Page 17. Suggestions for getting the best from your Nanocom And Useful support information and link

Important Notes

- **USB lead not recognised:** There are *NO* drivers for the Nanocom Evolution. If when using your USB update lead you receive an error message, this will be an issue with your Operating system and/or your laptop/PC not recognising the lead. Alternatively, the computer/laptops USB port may not be configured to provide a 500mA power supply.
- There is *NO* software pack to operate the Nanocom Evolution via a PC or Laptop, it is, apart from the upgrade software, entirely a stand-alone and independent unit.
- To register your Nanocom Evolution, you must use this link, <http://www.nanocom-diagnostics.com/register> the Blackbox Solutions website has no facility to register the unit or a forum for the Nanocom Evolution, all Nanocom online support and facilities are hosted at the above site address.
- SD cards up to 16GB SD or SDHC can be used with the Nanocom Evolution. Please ensure that the SD card is formatted correctly before use. Further information is available in the SD card section of this guide.
- The only website you'll ever need for the Nanocom Evolution in respect of Downloads, Firmware update access and other information is <http://www.nanocom-diagnostics.com> and our owners-only support forum which is <http://forum.nanocom-diagnostics.com/>
- There has been some confusion over the naming of the Nanocom Evolution as either Mk1 or Mk2. The differences between them being that the Mk1 (both left images) is the bigger, plastic case of the pre-Blackbox Solutions model and up to re-launch in August 2011 (with Nanocom Evolution printed on the front the case) and the Mk2 (both right images) is the slim line, Black Anodised Aluminium casing. They both however use the same Firmware and software modules. If you own a Mk 1 model and have not yet upgraded the Firmware, you should do so, as without the upgrade of Firmware, the P38 options will not be available to you.

Nanocom Evolution Mk1



Nanocom Evolution Mk 2



Powering your Nanocom Evolution

The Nanocom Evolution can be powered by the following methods, which apply to either the Mk1 or Mk2 Evolutions. Please note only the Mk2 model version is shown below, however the connections are the same type, just in different locations on the MK1.

- Connection via the supplied OBD lead from the Nanocom Evolution to the OBD diagnostic port in the vehicle (see correct connection method above). This is the only method of establishing any diagnostics/communications with the vehicle.





- Connection to an external AC adaptor with a 12Volt DC continuous current of 500mA (up to 5A maximum) in the auxiliary DC power socket on the left hand side of the unit. This can also be used as an auxiliary power source for the Nanocom Evolution or simply to power the unit to input licence codes or change backgrounds etc. It cannot be used for diagnostics unless used in conjunction with the OBD lead.



- The Nanocom can be powered via the Mini - USB cable (see image below), but when used in this way, it cannot be used for diagnostic functions or to test the Pins in the Setup section. When the unit is powered by the USB with an SD card inserted, the Nanocom will act like an external memory for a PC/laptop.



The NANOCOM does not have an on/off switch. The unit will power on automatically when any one of the above sources are used and it will then stay active until the source of the power is disconnected. To enter the Nanocom into stand-by mode, You should close the application screens by using the  icons in the bottom right corner until the final screen when you will see , pressing this will put the Nanocom into stand-by mode until the power source is removed or the unit is awoken by a screen touch.

The unit will still stay actively powered but in stand-by mode, which has a very low power consumption (only 6mA). You can re-power the unit from this mode by gently touching anywhere on the screen for approx 8 seconds (**DO NOT** apply excessive pressure to the screen). This reinitiates power to the unit. Alternatively, remove any power source from the unit and reconnect it.

Some applications that give live data will automatically turn the unit to standby mode when the ECU stops communication, so for example, this would happen a few seconds after the ignition is turned off.

⚠ IMPORTANT: Please note that by removing the power to the unit, while it is processing information or communicating with ECU's can, in rare circumstances, corrupt the system and require either a Firmware re-install, or in the worst case scenario, a return to Blackbox Solutions for reprogramming, which regrettably, would be classed as 'caused by user error' and be outside of the warranty coverage.

Online Registration and obtaining your Unlock Codes

The Nanocom is supplied without the unlock codes for security reasons. To obtain your codes, you will need to register the unit as detailed in the Quick Setup Guide, which is included with every new unit sold by us. If you have misplaced your Guide or purchased your unit second hand and so did not receive such a guide, this can be downloaded from

<http://nanocom-diagnostics.com/downloads>

In order to register you will require the Nanocom's ID, a unique case sensitive 6 – digit ID that all Nanocom's have and the order number. The order number it's required only on the first registration of a brand new unit. The Nanocom ID has the licenses (Unlock Codes) computer generated and coded to work with it only, therefore the codes are not interchangeable from unit to unit.

The Nanocom ID is composed of 6 alphanumeric characters, for example **A1b2C3** and **IS** case sensitive, so **A1B2C3** is seen as different from **A1b2C3**.

To obtain your Nanocom ID please do the following:

- Power on the Nanocom Evolution via one of the following methods:
 - OBD lead in the vehicle (see connection sequence above)
 - 12V DC power supply via the DC socket on the Nanocom Evolution
 - Via the USB lead and a laptop/PC. If using this method you will see 4 icons on the screen. Select the "Nanocom Diagnostic" icon.
- From the Nanocom home screen, scroll to the right and you will see a menu item called "Nanocom"
- Follow this menu sequence: **NANOCOM → SETUP → NANOCOM ID** and make a note of the ID number shown, please remember the ID is case sensitive and must be written exactly as it is shown on screen.




You can find the order number of your NANOCOM order received the confirmation email of your order, on the email, and link that you received when your order was paid. If this is a second hand unit that was already registered this field is not required. For any problems please send an email to support from the contact us page.

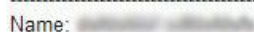
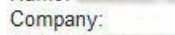
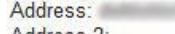
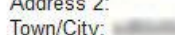

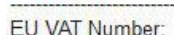
- **Order No. in your order confirmation email:**

NANOCOM Purchase Order **1435570996** 

ADMIN - NANOCOM Diagnostics via nanocom-diagnostics.com

Dear 

Thank you for your purchase order
Order Reference Number: **1435570996** 

Name: 
Company: 
Address: 
Address 2: 
Town/City: 
State/Province: 
Zip/Postal Code: 
Country: Albania
Email Address: 
Phone Number: 
Fax Number: 

EU VAT Number:



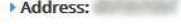












Promo Code: - 0% Discount -

Shipping Method: DHL - Priority International Courier (averages 2-4 business days)
Payment Method: PayPal

- **Order No. in the link we sent to view your order online:**

Order No. **1435570996** 


Date: 29/06/2015 14:43


Customer Info	Order Details
<ul style="list-style-type: none"> Name:  Company:  Address:  Address:  Town:  State:  Zip/Postal Code:  Country:  Email:  Phone:  Fax:  VAT:  Promo:  	<ul style="list-style-type: none"> Order No. 1435570996  Order Date: 29/06/2015 Payment Method: PayPal Total Weight: 665g Shipping Method: DHL Tracking Number: N/A Order Status: 

- **Order No. when the status of your order was changed to Paid:**

NANOCOM Order Status Update  Inbox x

Admin - Blackbox Solutions via nanocom-diagnostics.com

Order Reference Number: **1435570996** 

Dear customer we would like to notify you that the status of your order has changed to 
To proceed with your payment and to view your order please visit the following [link](#)
If you have problems with the link copy and paste the following to your browser [http://www.nanocom-diagnostics.com/order/1435570996](#)

To register the unit with your Nanocom ID, please go to <http://www.nanocom-diagnostics.com/register> and enter the mandatory information required, denoted by a *, and any additional information you wish to input. You can edit your own information at any time while logged onto the site.

An automated email will then be sent to the email account used in your registration, containing your computer generated password. Once you receive your login details and password, you can then login to the Restricted members only area at <http://www.nanocom-diagnostics.com/register> to obtain your unlock codes.

NOTE: Please ensure that you input a **valid email address** when registering or you will not receive your login details. If you have not received an automated response within 24 hours of registration, please check your Spam or Deleted items folders to check that the email has not been classed as **SPAM** or **JUNK**. If you are sure that every detail provided is correct, only then should use this link to report any problems, <http://www.nanocom-diagnostics.com/contact> If there has been a delivery issue, we will have received notification and the reason for the undelivered email and can advise you.

In your new personal area you will now have a single screen showing your details, your Unlock Codes and at the bottom of the screen, any restricted downloads for members only, such as Firmware updates.

Restricted Area Options

So you have now received your Username and password to the Restricted area. The following shows what you will expect to see when you login to this area (certain information has been removed from the screenshot for security).

All available options are shown in this area which are your login name, password, Nanocom ID (ID's), purchased Unlock Codes and the Restricted area downloads. This is your personal area and cannot be seen by any other members.

Restricted Area

My Profile Logout

Home News Products Shop Downloads & Support Forum Emulator Genesis Contact Us 0 Item(s)

User Details Edit Details NANOCOM Unlock Codes Add NANOCOM ID

Name	michel
Surname	GERBEAUD
Username	michel@evolution.com
Forum Username	user_7268
E-Mail	m@CUIP1a
Country	France
Postal Code	47300
Town	VERTEUIL D'AGENAIS
Address	104 rue de la Bière
Phone	0079083399

> NANOCOM ID: 616922 Click to view/hide the unlock codes

> NANOCOM ID: 674002 Click to view/hide the unlock codes

> NANOCOM ID: 611551 Click to view/hide the unlock codes

> NANOCOM ID: 2023M Click to view/hide the unlock codes

#Licence	Code	Description
Unlock06	eWJDJh	GEMS Engine (up to 1999) (P38)
Unlock08	ctGNGW	All other P38 ECU's

> NANOCOM ID: 616922 Click to view/hide the unlock codes

> NANOCOM ID: 62160 Click to view/hide the unlock codes

> NANOCOM ID: 61005 Click to view/hide the unlock codes

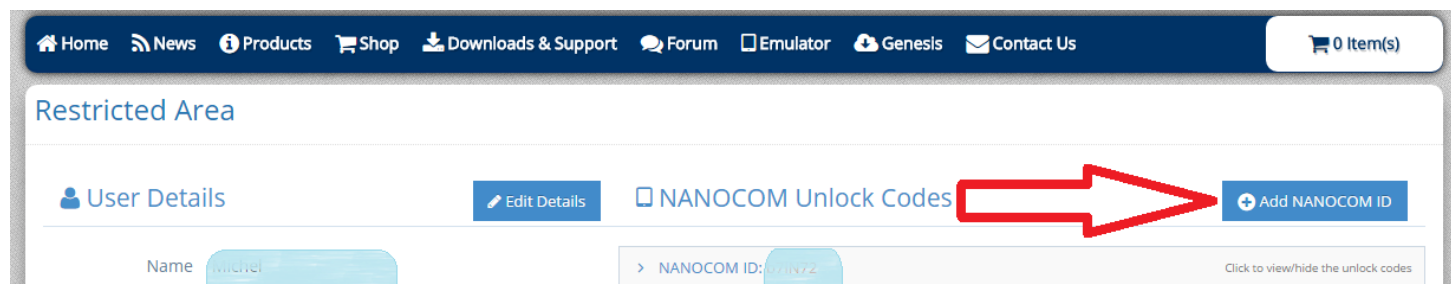
> NANOCOM ID: 61005 Click to view/hide the unlock codes

Red Colour: Capital (Upper Case) Letters
Green Colour: Small (Lower Case) Letters
Blue Colour: Numbers

You also have the ability to amend your own personal details on this page by clicking “Edit my Details” at any time. To view the unlock codes you need to click on the specific Nanocom ID and a dynamic window will enlarge displaying the unlock codes associated (purchased) with that Nanocom ID.

Adding a new Nanocom ID

If you are an existing NANOCOM User and you want to register an additional NANOCOM ID please login to the Restricted Area and click on the "Add NANOCOM ID" button. The registration of additional Nanocom Evolution devices is not longer possible from the main registration page if the user wishes to keep all units under a unique email address.



Once a new Nanocom ID has been added, automatically the associated (purchased) unlock codes for that specific Nanocom ID will be displayed.

Unlock Codes (Licenses)

In the case that you have multiple Nanocom ID's, when retrieving the unlock codes from the restricted area please make sure that you select the proper Nanocom ID that you wish to enter the unlock codes. Inserting and saving the wrong unlock codes will trigger a "Function Locked Error" when a wrongly licensed Nanocom menu is accessed.






The unlock codes are specific for certain vehicle functions/models. The following list shows the current specific functions/models unlocked by each code. As we increase the coverage, further unlock codes will be listed.

- Code 1 - TD5 Engine Management (Defender and Discovery 2)
- Code 2 - Wabco ABS and Lucas 10AS Alarm (Defender)
- Code 3 - Valeo Body Control, ACE, SLABS, Auto box and SRS Airbag (Discovery 2)
- Code 4 - Puma Engine and Instrument pack (Puma Defender 2.4 engine – 2007 - 2010)
- Code 5 - Motronic V8 Engine (Discovery 2 and from 1999 onwards on P38)
- Code 6 - GEMS Engine (up to 1999) (P38)
- Code 7 - EDC Engine (P38)
- Code 8 - All other P38 ECU's
- Code 11 - Discovery 3
- Code 12 - Range Rover Sport 2005 - 2009
- Code 15 - Discovery 4 2010 - 2014
- Code 16 - Range Rover Sport 2010 - 2012
- Code 17 - L322 Range Rover 2010 - 2015

NOTE: On the web shop, the Unlock codes have a shop code assigned to them, e.g, NCOM11 (which is an unlock code for the TD5 engine management). The actual unlock code required by the Nanocom is Code 1, and goes in Box 1 (which is the shop number shown as 11). So please do not be confused by the shop product codes.

To input your codes into the Nanocom Evolution unit you need to do the following:

1. From the main menu, follow this sequence: **NANOCOM** → **SETUP** → **UNLOCK CODE**

2. Touch the screen at the end of the last character in the white box next to the corresponding number for the code you have to input.
3. Using the on screen keypad, use the backspace key to clear the box.
4. Enter the code from the Restricted area exactly as shown by switching the keypad between upper and lower case where needed.
5. After you have entered all codes issued, use the scroll arrows , to go to the last page and press “**Save Unlock Code**” .
6. Exit the menus using the  buttons on screen and power off the Nanocom Evolution when you get to this button  on the main home screen.
7. When you power the unit back on, your codes will be active.

To view a demonstration of inputting your codes, please see the video: Step 4: Storing unlock codes found on the support area:

<http://nanocom-diagnostics.com/downloads>

If you try to communicate with an ECU after inputting the codes and you receive the ‘FUNCTION LOCKED’ error message, this indicates that the function/model that you have tried to access is not enabled by the corresponding licence (Unlock code). There is nothing wrong with your unit, it is simply that the code has either been typed in incorrectly or has been entered into the wrong box. Please ensure that you have entered the correct code into the corresponding numbered box. E.g., Code 1 from the Restricted area corresponds to Box 1 on the Nanocom, Code 3 into box 3, and so on.

Common Issues entering the Unlock Codes

It should be noted that these codes are computer generated and we are unable to amend or re-issue them in any way. They are specific to the Nanocom’s ID that is pre-programmed into the unit.

Despite a small number of reports that an incorrect code has been issued, this is simply not possible. If you are uncertain of the code you see, which may be due to the actual fonts used by your PC/Laptop, you can try to copy and paste the code into a program such as Microsoft Word or Notepad, enlarge it, change the font to one that makes the digits more legible and try to re-enter what you think the code is.

The most common ones that are input incorrectly are: **0 (zero), O (capital o), l (lower case L), 1 (number), I (capital i)**. Please try all variations of characters before reporting an issue as we can only point you to the Function Locked Error document found here: <http://nanocom-diagnostics.com/downloads> to try and resolve it. As stated above, all codes are linked to each individual Nanocom’s ID and cannot be altered in any way. If after trying all possible combinations and variations, you are still unable to access the functions you have purchased licenses for, please contact us at <http://www.nanocom-diagnostics.com/contact>

Restricted Download Area

On the website for the Nanocom Evolution, you will notice that every section has now been collated onto one easy to navigate screen. The available downloads such as firmware, are located at the bottom of the screen and available to you with easier access. All other applicable guides are available from this link:

<http://nanocom-diagnostics.com/downloads>

The Nanocom (Settings) menu

When the "Nanocom" icon is selected from the second screen of the home menu, you will be presented with these four options ->

The Nanocom's settings section has multiple functions:

File Manager: This option, shown to the right, which requires an SD card to be present in the unit, allows you to view and make changes to the files stored on the SD card.

The file window on the left of the screen shows all of the files present on the SD card. Please note that this is just an example. If you select an item from the list, it will be highlighted in yellow so you know which file you are working on.

File Filtering: It is possible to filter the results shown. By entering some details into the Filter box shown: *.* will show all files on the card, as all files have a point ".". In their names, whereas *.csv* would only list the files with a CSV extension.

If you know the full file name, this can also be entered and does not require the file extension, e.g. MAP01.

The **RENAME** button allows you to rename the selected file.

The **DELETE** button allows you to delete the selected file.

The **OPEN** button allows you to directly run the application or file selected and automatically loads the data in it.

Text Editor: As the title suggests, this is a feature that allows you to edit any text files saved on the SD card. This should be used with caution as edited results may make the file unusable. The Nanocom Evolution will not recognise file names longer than 8 characters but it does automatically assign the relevant extension to the file name. If you copy a file to the SD card that has a longer file name than 8 characters, the Nanocom Evolution will show the file name as cut and the data may then not be readable with the content being of an invalid format. **Always use up to 8 characters for the name of the files and folders** that you will create, save or copy on the SD Card and you intend to use them with the Nancom Evolution.

Applications: The Applications option gives the user access (where the relevant unlock codes have been purchased) to all applications/functions from all vehicle models, as well as the File Manager, Text Editor and the Setup Menu and it's sub-menus. It is intended to be a fast access method to reach specific functions for the fluent Nanocom user.



Setup: Functions and features

Note: Where an item has a * next to it, please see the corresponding section below.

Nanocom ID: This is the units programmed ID which correlates to the Unlock codes issued to this ID. This ID is required for registration here <http://www.nanocom-diagnostics.com/register>. See the section above on how to obtain this ID for registration.

Unlock Codes: In the Unlock codes section found in the Nanocom: Setup section, detailed above, there are 20 unlock code boxes.

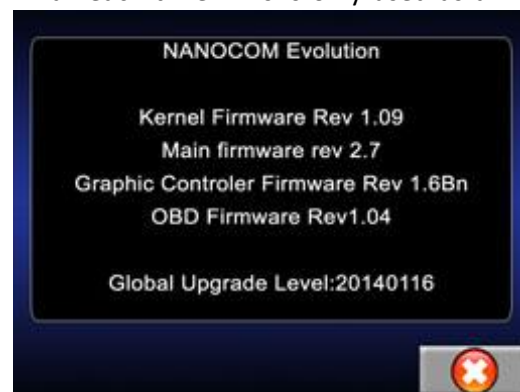
***Start up Settings:** Selecting this option allows the user to choose an application/function that will open when the unit is powered on. See the relevant section below for further information on the options.

User Test: When selecting this option, you are presented with sets of Pins to test. Select each test in turn and wait for the result in the opposite box. If you have any that errors, power the Nanocom Evolution off and back on and test again. If you get a continuous Error message and you find the unit is not working correctly then use the form here <http://www.nanocom-diagnostics.com/contact> and be sure to give your unit number and the specific Pins the unit is showing error. Please note, that if powered by the USB lead, the pin tests will fail each time. This is only used as an internal test for the unit and is not to test the OBD lead itself.

Factory Test: Only used by Blackbox Solutions during production.

Info: This section holds the Firmware versions and more importantly, the Global Upgrade Level, which is the information you need to know when checking to see if you have the latest Firmware installed. This information is also available in the Change Log, which is located in the Restricted area of the Nanocom site.

***Display:** Please see the Display section below for all available options and tests.




Kernel Upgrade: This function places the Nanocom into its Kernel Upgrade Mode. Although this function works perfectly as intended, there is a simpler method available. To see the details of this method, please read the help file that accompanies all Firmware upgrades for the Nanocom.

Restoring File - As with the kernel Upgrade, this section is no longer used on the new systems as the Restore file is created automatically during the Firmware upgrade process, if required. We recommend only using a re-install of Firmware to restore your unit in the event of corruption or other issues.

Startup Settings

When you select this option you will be presented with a list of possible applications (use the up and down scroll arrows for the full listings). The following are examples of the startup options you have:

Selecting 'Normal' means that the unit will start with its main menus as listed above.

If for example you select TD5INST.APP and save the settings, the next time you restart the unit, it will automatically load the TD5 Instrument panel after boot up. To exit this mode you simply press the  in the bottom right corner of the screen and the unit will exit and restart in normal mode. Remember, by selecting something other than Normal in this section, it will set the Nanocom to start in that mode until changed.



When the ignition is switched off, again the unit will automatically end the application (with the exception of normal mode) and go into power save mode. This is a normal situation and should not be confused with the unit behaving in an incorrect manner.

Display Settings

Nanocom Brightness- The brightness of the Nanocom Evolution display can be altered in one of 2 ways:

The first is a permanent method and to do this you need to go into the Menu option under **Setup -> Display** and change the settings as shown above using the **-** or **+** keys. Once adjusted to your personal setting, you then press the **SAVE** button. These settings will then be applied each time you use the Nanocom Evolution.


The second method is during use, if you feel the screen is too bright or too dark, simply touch the screen lightly anywhere, (there is no writing or buttons) hold your finger pressure in the same place for a few seconds. The Back light adjust will appear and you can amend it using **+** or **-** buttons and then click Ok. Note: that once the unit is powered off and back on, any changes made this way will be lost.



Touch test: This test will produce a blank screen. You simply touch the screen anywhere and a white dot will appear. This verifies that the screen is responding in the correct manner to the touch. To exit the screen, simply leave the screen without touching it and a few seconds later it will revert to the main Display menu.

Touch Calibration: With this menu option you will be asked to confirm that you want to calibrate the Touch screen. Select Ok to start the test. Follow the 4 step on screen instructions. It is advisable to use a non sharp object to touch the screen where indicated on the 4 steps to gain a more accurate calibration.

NOTE: This process should only be used if you are experiencing severe touch screen issues. It is advisable to first use the Touch test to see if the screen is recognizing the touch points.

Backgrounds: The Nanocom has 4 built in graphical backgrounds. Use the green arrow button  to select the one you wish to have displayed on your unit. Once you have the one you require press the Save Background button. The selected background is the one that will now be used until you change it again. At this time no other custom backgrounds can be added to the unit.

Connecting your Nanocom Evolution to a Laptop/PC via the USB lead without a SD card

There are 3 occasions when you would see these 4 icons (as shown to the right) on the Nanocom Screen:

The first is when running the Firmware update procedure as detailed in the Firmware updater guide. When running the Firmware update mode you would see the 4 icons and you would only need to press the kernel button and the screen will say Kernel Bootloader Activated. After a few seconds the screen will go blank, this indicates that the unit has entered the 'update mode' and is ready for the update process to start.

The second occasion is with a Nanocom Evolution that has Firmware above 1.00 and the SD card has not been recognised when connected with the USB lead.

The third and final occasion is if you simply connect the Nanocom Evolution to a laptop/PC with the USB update lead (No SD card inserted). On this occasion the 4 icons can be used as follows:



- **Kernel**– This is used during the Firmware upgrade process to put the Nanocom Evolution into Kernel upgrade mode. If you wish to update your Nanocom you need to enable this by clicking on it. The screen will shut down and the Nanocom will be detected by the Updater Manager on the PC screen.
- **Firmware**–This is an internal process only used in the production of the units and has no functionality for the end user. If you enter this mode you will be presented with a small number pad but will have no functionality. Press Ok to exit this screen.
- **Graphics**– As with the Firmware is not used by the end user, it is used only by Blackbox Solutions production staff during the build process. Pressing this will result in the same number pad as Firmware with no functionality. On either of these options if you do happen to go into them simply pressing the OK button returns you to the 4 icons screen.
- **Nanocom Diagnostics**– Selecting this option will start the Nanocom in normal start-up mode and give the main menus as listed above. However, it is not possible to actually carry out any diagnostics when connected in this mode and could only be used to scroll through menus to see the options of any ECU you have the unlock codes for.

As an example, you have the GEMS P38 unlock codes. So selecting **R. Rover P38 → GEMS → BECM**, will bring up the various menus available but would also report “Unable to start communications with the ECU” but by clicking OK allows you to then enter the sub menus and view the options which are available under normal diagnostic use. It could be thought of as a Demo mode which allows you to go through the various options and view them without making any changes until you are sure of what you are doing.

SD Card information for the Nanocom Evolution

SD CARD are only provided when ordering a Nanocom Evolution Kit for a **CAN-BUS** vehicle, excluding the Defender Puma 2.4 & 2.2 kit. However, a SD card is required for capturing data from **Legacy vehicles**. The SD card will not need any special folders, it can be completely blank.

With the new CAN BUS vehicles, the SD card has 2 folders on it which are required for the ECU programming from our Genesis website. If you need to format the SD card, there are copies of these folders available from the Nanocom website site under the “Documentation” section. If your Nanocom cannot see either of the folders SBL or BBS on the card when inside the Flash Programming section for CAN-BUS vehicles, please see the “SD Card Formatting” Document found here: <http://nanocom-diagnostics.com/downloads>

We do not produce the cards nor do we recommend types of card to use. Use of these in any capacity is entirely at the users own risk. Many comments have been made and questions asked regarding the formatting of these cards. From experience while testing the Nanocom Evolution functions we can advise that the maps will transfer on either FAT or FAT 32 formats when tested. The Nanocom Evolution supports SD or SDHC cards UP TO 16GB for storing diagnostic files or maps for the TD5 or on the CAN BUS vehicles for saving VBF files to flash the various ECUs.

The use of a High Quality SD or SDHC card from known manufacturers has been noted from various forums especially when storing MAP files for the TD5 with the intention of remapping the ECU. Issues have been highlighted on several occasions now which have been down to the SD card not storing the information correctly.

In the Important Notes section of this guide it refers to ways of formatting the SD card when using it for mapping an ECU. No liability claims can be made against either Blackbox Solutions or any other customer offering possible solutions to issues with 3rd party equipment. All work is undertaken at the owners own risk.

This information from one of our beta testers may prove useful in the process:

1. Low level reformat of SD Card. Using HDD-LLF software ([HDDGURU: HDD LLF Low Level Format Tool](#)) to do this. It leaves the card unpartitioned and is pretty slow.
2. Format SD Card with SD Formatter software (https://www.sdcard.org/downloads/formatter_3/)

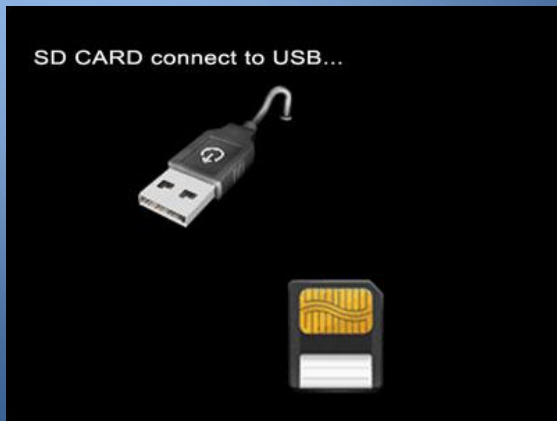
The above are especially important before attempting to use the SD card for Reading and Writing map files.

NOTE: In the BBS V1.12 Firmware available in the Restricted area of the nanocom site, the function for mapping has now had a safeguard built in to try and eliminate issues with the SD card. When using the MAP function, the .map or .tun file/s are now copied to the Nanocom Evolutions Flash memory from the SD card and written from there to the ECU, which should eliminate issues with corruption of the file being read directly from the SD card.

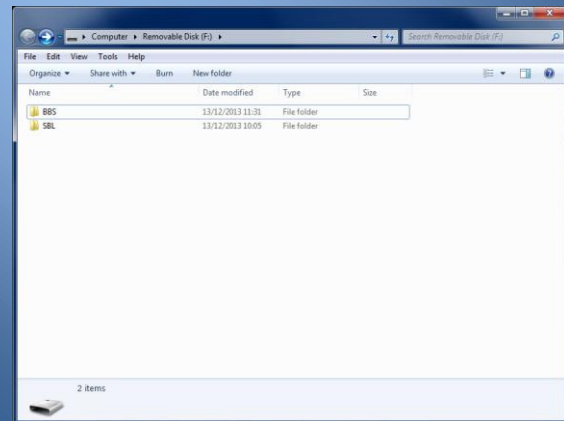
Connecting your Nanocom Evolution to a Laptop/PC with the USB lead with an SD card inserted

When you connect the Nanocom to the laptop/PC by the USB lead and you have an SD card inserted, then you will get the following screens on your Nanocom Evolution unit and your laptop/PC screen, provided you do not have any of the issues listed below. Obviously the icons showing on the computer screen will be different depending on what you have on your SD card. At this moment the Nanocom Evolution will act like a SD Card Reader.

This screen will be displayed on the Nanocom...



This screen will show on your laptop/PC...



SD Card issues with the Nanocom Evolution

PLEASE BE AWARE THAT THE SD CARD IS NOT A "PLUG AND PLAY" STYLE DEVICE FOR THE NANOCOM. THE UNIT MUST BE POWERED DOWN BEFORE INSERTING OR REMOVING THE SD CARD.

For units with firmware 1.00 (never been upgraded) – When the Nanocom Evolution is connected to the laptop/PC via the USB update lead, if the SD card has not been recognised, you will see the Nanocom Evolution reported on the laptop/PC as a flash memory device only. This means that you cannot transfer files to the SD card as shown in the File Import and Export section below.


For units that have been upgraded from original FIRMWARE (any above 1.00). If the SD card in the unit is not recognised, then the Nanocom screen will show 4 icons.

Ensure that you do not overload the SD card with files as this can cause delays in reading the info from the card. Also see the information below regarding the naming convention of the files and also the length of the names.

File import and export

When using an SD card in the Nanocom Evolution you can transfer file to and from your laptop/PC to the card by simply connecting the Nanocom Evolution to the laptop/PC via the USB cable supplied. As long as the card is recognised you will see the Card on your screen as a Removable Disk. You can then transfer files to and from your laptop/PC to the SD card. If you are transferring maps from your laptop/PC to the SD card, please refer to the Formatting section above.

Diagnostic files

During any diagnostic session, provided you have an SD card in the Nanocom Evolution, you can record the data on the screen when this icon  is displayed in the bottom right corner. Pressing the **Save** icon once gives you a box where you need to give the file a name. To do this, touch the screen in the white "name" box and it will bring up the on screen keypad. Type in the required name and click **Ok**. You will receive a message to say "Data recording started ". When you have sufficient data press the icon again to stop the recording process.

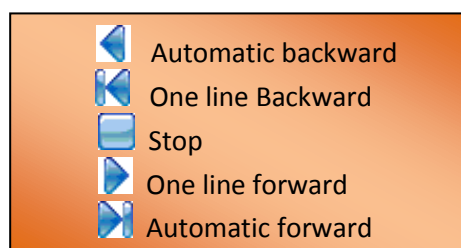
- The File saved as a CSV can then be opened in Excel. You can then view the data in columns and also create graphic lines with valid data. Please note that you do need to have some knowledge of Excel in order to manipulate the data in this way and this is not something we can teach you. We simply offer the option with this equipment.
- Settings pages are also stored in CSV format but can also be saved as HTM simply by changing the file extension.
- Faults are stored as a Txt file and can be read in any text editor program.
- Map files that are not protected are stored in a .map format
- Maps files that have protection on them to prevent them from being copied are stored as .TUN files.

Dynamic Live input, csv file viewing


As well as viewing the data in Excel you can also view it with the File Manager on the Nanocom Evolution. To do this you need to ensure you have the SD card with the data inserted into the Nanocom Evolution and power on either from the car or from the DC socket.

Use the following menu options: **Nanocom -> File Manager**, this then opens up a list of available files on the SD card. Select the file you require and it will be highlighted in Yellow, then click **Open**.

This then opens the file as if it is connected to the ECU the recording was made from. Using the buttons shown below you can scroll through the data page by page.



The text box on the lower left corner shows the number of the line being viewed. You can edit this by touching the white box and it will open up the on screen keypad. Edit the first number and click **OK**. As an example if it displayed 1/4 you could amend that to read 3/4 and it will jump to page 3 of the 4 available.

When you see this  icon on an application page it means that you can directly import data from an SD card file into the ECU.

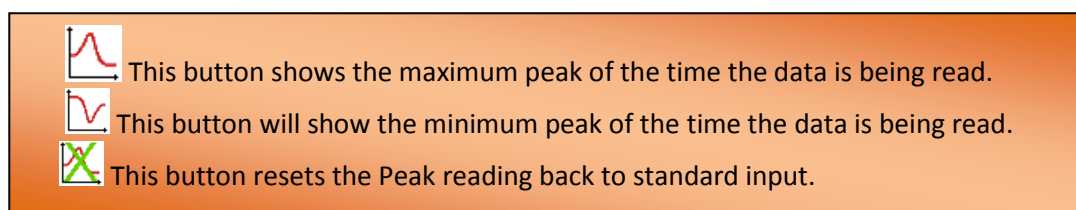
For example, if you have saved injector codes from a Defender TD5 engine and need to re-input them you can import these directly back to the ECU at any time without having to go in and edit the values manually each time. To do this you need to ensure that an SD card is inserted into your Nanocom Evolution before powering up the unit. Navigate through the menus to the relevant ECU, in this scenario it would be:

Defender/Discovery II → TD5 → TD5 Engine → Settings → Injectors → Throttle

Then click on the yellow folder icon as shown and you will be presented with an **Open File** option. Select the file required and click **OK**. This will then input the saved SD card data into the relevant boxes. Locate the **Write Settings** button (on the Defender it is on the 2nd page) and press to save.

The Peak Detection function

During the dynamic live data viewing, through the Instrument modes for example, these buttons are available at the bottom of the screen:



The purpose of this feature is to only display either the highest or the lowest "peak" values for the inputs you are looking at, a facility extremely useful in attempting to diagnose faults or erratic vehicle behaviour.

File Names

The Nanocom Evolution cannot store file names longer than 8 characters. However, it automatically assigns the relevant extension to the file name. If you copy a file to the SD card that has a longer file name than 8 characters the Nanocom Evolution will show the file name as cut and the data may then not be readable with the content being of an invalid format. It is most essential that all files and folders be named or renamed **up to 8 characters**.

Forced Reset

If the software freezes and you can no longer interact with the touch screen, you can restart the NANOCOM without removing the power source. To do this you have to touch the touch screen anywhere and keep light pressure on for more than 8 seconds, until you see the NANOCOM restart. This is the same method used to bring the Nanocom Evolution out of its power save mode.

NOTE: This is a "TOUCH SCREEN". This means the screen is designed to react to direct touch and it will react to very light pressure. As the touch screen is small and made of glass, It will not withstand any excessive pressure being applied which will cause it to crack. In the instance of a cracked screen, contact us and we will organise a repair for you.

This is especially important if using the mounting kit NCOM30 from the web shop (image on the right). No pressure should be applied to the screen when fitting so should only be handled by the external edges.

For users who like a stylus or touch-pen, then we recommend the use of a non-sharp object, such as a plastic toothpick or a pencil. Anything sharp can mark the screen, make it difficult to view and can accumulate damage over time.

Please take care of your Nanocom.



Nanocom Evolution Firmware Update

The procedure for updating the Nanocom Evolution's firmware is as follows:

1. Select the relevant Firmware update file for Nanocom Evolution in your Restricted area.
2. Download the file which will save as a "zip" file. This must be saved to a location on your computer's hard drive.
3. Use any one of the many file utilities available on the internet such as 'Winzip' or 'Winrar' or 'IZARC' (most are free) to extract the files to a new folder (All files in the "zip" file need to be extracted to the same folder).
4. Locate and open the new folder, inside there will be two sub-folders.
5. Open the folder named "**kernel manager**" and select the file named "**NanocomEvoKernalManager.exe**" (note: your laptop/PC may not show the file extension of '.exe') Highlight the file and then press the "enter" key to run the file.
6. Connect your Nanocom Evolution to the laptop/PC via the supplied mini-USB cable.
7. You will now see on the setup program that it shows "**Device Connected**".
8. If this is the first time you have run the Firmware updater, click on the "**Help**" button at the bottom and take time to read the contents so you fully understand which unit you are working with and how to perform the upgrade.
9. You will now see two "check box" options available, the first is to **Rotate the screen 180 Degrees** (Invert the screen so that the OBD Connector comes from the right-side of the unit) or to **Overwrite Target Config.**, this is used only to reset the Nanocom to factory settings.
10. After finalising any user preferred options, the Nanocom is now ready to receive its firmware update. You will see an option button "**Run Upgrade**" available just above the two check-box options, press this when you are ready to start and the firmware update will be loaded.

A detailed guide and instructional video can be found on the website documentation website:

<http://nanocom-diagnostics.com/downloads>

Nanocom Support Forum

For support at its best, we are moving away from supporting the Nanocom Evolution by e-mail. Instead we are moving all support to the Nanocom Forum as it's a much more efficient method and involves a community of information and users.

As we found with our flagship equipment, the Faultmate MSV-2, the use of a general forum not only benefits us due to the different time zones, but also allows other Nanocom Evolution owners to assist and advise not only on issues with the equipment where they themselves may have encountered the same problem and had it resolved, and so can offer advice, but also on issues related to the vehicles on which we do not offer support.

This forum access is useful during such times as when we are closed at weekends, bank holidays and main holiday periods. We can also make important announcements relating to Firmware updates and closures etc...

This link <http://forum.nanocom-diagnostics.com> will take you to the log in page of the Nanocom forum. Registering to become a member of the Nanocom Support Forum Community is free of charge and exclusive to Nanocom owners only.

In the forum, there are sections for each vehicle ECU with functionality guides included, as well as areas for general hardware or software issues related to the Nanocom Evolution.

Suggestions for Nanocom use and gaining the most benefit from it

- ✓ All diagnostic sessions must be done with the ignition at stage 2 and the engine off. Depending on the module, it may require the ignition to be on stage and the engine running before diagnostics can be performed, but these are rare situations. An example of this situation it's when the user reads the vehicle instrumentation info.
- ✓ When switching from one ECU to another, please allow the Nanocom Evolution time to close its connection to the previous ECU before trying to communicate with another one. Some ECU's may require being put into "Sleep mode" before they allow communication with another ECU.
- ✓ If for any reason you lose communication with an ECU during diagnostics, turn off the ignition for between 15-60 seconds to allow the ECU to reset before retrying the communication.
- ✓ When working on the Alarm or Body Control ECU's, these can generally communicate with the ignition switched off. It is recommended that you keep a working remote/fob near the vehicle so that you can reset the alarm in case of communication fails. Please refer to the individual ECU documents for further information.
- ✓ With the P38, it is not possible to communicate with any other ECU following communication with the ABS ECU. This is a feature of the ECU and not an issue with the Nanocom Evolution.
- ✓ With the P38 all diagnostics communications are blocked if the vehicle it's immobilized. To establish communication the vehicle must be mobilized either by unlocking it using the FOB or by manually entering the EKA code. The EKA code can be entered manually using the driver's door method or via the "Disarm" function from the Nanocom. If you don't have the EKA code then this can be procured from the LR dealer based on the proof of ownership.
- ✓ With the ABS and especially the SLABS ECU, diagnostics will cease once the road speed reaches between 8 and 20 mph (12-32 km/h) as a general rule. Again, this is a design feature of the ECU itself. With Land/Range Rovers Testbook system, the user has to jack each wheel in turn and rotate by hand to check sensors.
- ✓ The Nanocom Evolution like every other diagnostic tool is only there to assist the end user in locating issues, where this is possible and will not repair the vehicle. The use of Workshop manuals, wiring diagrams and other such materials are recommended in conjunction with the use of the Nanocom and/or any other equipment. If you cannot connect to an ECU and have a communication or other such error message, then try tracing the wiring, cleaning contacts etc, before blaming the tool.
- ✓ If you find that the Nanocom Evolution will no longer power from the OBD socket (especially in the P38 Range Rover) you should check the fuse for the OBD socket in the vehicle. The locations are as follows:

- **P38:** this is Fuse number 33 (5 amp) located in the Engine fuse box.
- **Discovery II:** it is Fuse number 20 (15 amp) in the passenger Fuse box.
- **Defender:** you need Fuse number 8 (5 amp) in the Passenger Fuse box.

Remember that the Nanocom Evolution is not an expensive mainstream consumer filled with super fast processors and a state-of-the-art multi-tasking operating system. It is a low cost, microcontroller based system. This means it needs to be given due time and patience in respect of allowing the unit to change between its various functions. When a function has been selected, the unit has to then disconnect from that ECU function and end it, before picking up on the next requested function. If you attempt to switch between the functions too quickly, this can cause the unit to look like it has frozen and repeated pressing of buttons will likely result in the system crashing and rebooting. In severe cases this can also corrupt the files in the unit and require a complete Firmware re-install using the Overwrite Target Config option in the Kernel manager upgrade software to bring the unit back to factory settings.

It should be noted that after using the Overwrite Target Config feature on the Firmware install that you would need to re-input your Unlock Codes.

There are no support features on the Blackbox Solutions web site and no registration function there for the Nanocom Evolution. All registrations are done only via the <http://www.nanocom-diagnostics.com/register>.

Since the introduction of the Nanocom Evolution MK II, Blackbox Solutions have sold in excess of 3,000 units and proudly, we have had less than 1% come back with broken screens due to either being dropped, having had a weighty item dropped on it or by simply applying too much pressure.

Units suffering this damage will have to come back to Blackbox Solutions for repair and so as to avoid the question of cost, the replacement screens is €40 and €35 for the labour (€75 plus VAT - if within EU). (Please note, these prices are subject to change without prior notice). As the percentage shows, these screens are not in any way flimsy, prone to cracking or general failure so please treat it with care and it can give you a lifetime of coverage for your vehicle.

Additional Information and Links

At Blackbox Solutions, we strive to provide as much documentation about our products as possible, as well as member support forums and video demonstrations for all of our diagnostic equipment.

There is a documentation section available here:

<http://nanocom-diagnostics.com/downloads>

This page hosts a vast number of support documents from individual ECU guides to Nanocom Firmware upgrade guides through to complete Nanocom user guides.

You can also find many useful Tutorial and Demonstration Videos on our YouTube Channel, found here:

<https://www.youtube.com/user/BBSP38/featured>

We hope you enjoy your Nanocom Evolution!!!