Car Configuration File (CCF)

Freelander 2 has been designed by sharing technology, components and systems with other manufacturers within the Premier Automotive Group (PAG). This makes economical business sense and increases the reliability and the innovation of the systems used in the long term. Because of this concept, some of the components etc may be referred to as a European Common Design (EUCD).

The CCF file is designated 1KB of memory space. 196 bytes of this memory is used for the Land Rover CCF file. A further 252 bytes of memory is used for the EUCD CCF file. Although not all of this CCF memory space is used, the remaining space is used for other data and for future expansion.

The car configuration file (CCF) may be thought of as the electrical make up (or electrical DNA) of the vehicle.

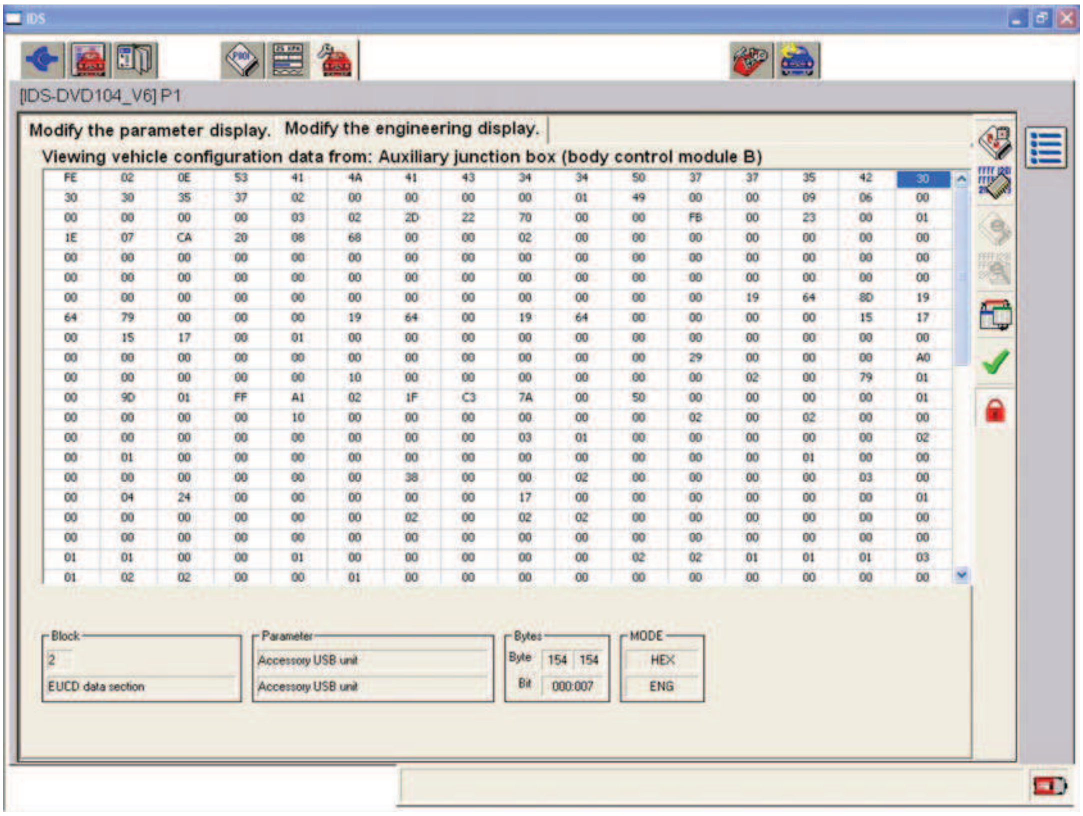
Example: Within the CCF will be codes relating to all aspects of the vehicle. The vehicle model, whether the vehicle is left or right hand drive, the wheel size, engine size and type of transmission, and which electrical modules and features are installed to name but a few.

The CCF consists of two parts: Vehicle Module Codes and Vehicle Parameters. Module codes are the data used in Manufacturing to specify the vehicle and are stored to be used in service. Vehicle Parameters are derived from the vehicle specification and relate to which features are fitted to the vehicle and their market settings.

Module codes are currently used to determine the correct software file to be downloaded to the relevant module during module software updates. However, in the future, module codes may not be used.

The CCF file itself contains 16 columns of data and a varying number of rows, depending upon the size of the CCF file. Data is held in a hexadecimal format. This is basically a numbering system which uses a base of 16. To represent sixteen digits, the hexadecimal system uses the following digits: 0 1 2 3 4 5 6 7 8 9 A B C D E F.

CCF File Shown in Hexadecimal Format



[IDS-DVD104_V6] P1

Modify the parameter display. Modify the engineering display.

Viewing vehicle configuration data from: Auxiliary junction box (body control module B)

FE	02	0E	53	41	4A	41	43	34	34	50	37	37	35	42	30
30	30	35	37	02	00	00	00	00	01	49	00	00	09	06	00
00	00	00	00	03	02	2D	22	70	00	00	FB	00	23	00	01
1E	07	CA	20	08	68	00	00	02	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	19	64	8D	19
64	79	00	00	00	19	64	00	19	64	00	00	00	00	15	17
00	15	17	00	01	00	00	00	00	00	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	29	00	00	00	A0
00	00	00	00	00	10	00	00	00	00	00	00	02	00	79	01
00	9D	01	FF	A1	02	1F	C3	7A	00	50	00	00	00	00	01
00	00	00	00	10	00	00	00	00	00	00	02	00	02	00	00
00	00	00	00	00	00	00	00	03	01	00	00	00	00	00	02
00	01	00	00	00	00	00	00	00	00	00	00	00	01	00	00
00	00	00	00	00	00	38	00	00	02	00	00	00	00	03	00
00	04	24	00	00	00	00	00	17	00	00	00	00	00	00	01
00	00	00	00	00	00	02	00	02	02	00	00	00	00	00	00
00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
01	01	00	00	01	00	00	00	00	00	02	02	01	01	01	03
01	02	02	00	00	01	00	00	00	00	00	00	00	00	00	00

Block: 2
EUCD data section

Parameter: Accessory USB unit
Accessory USB unit

Bytes: Byte 154 154
Bit 000:007

MODE: HEX
ENG

E88695

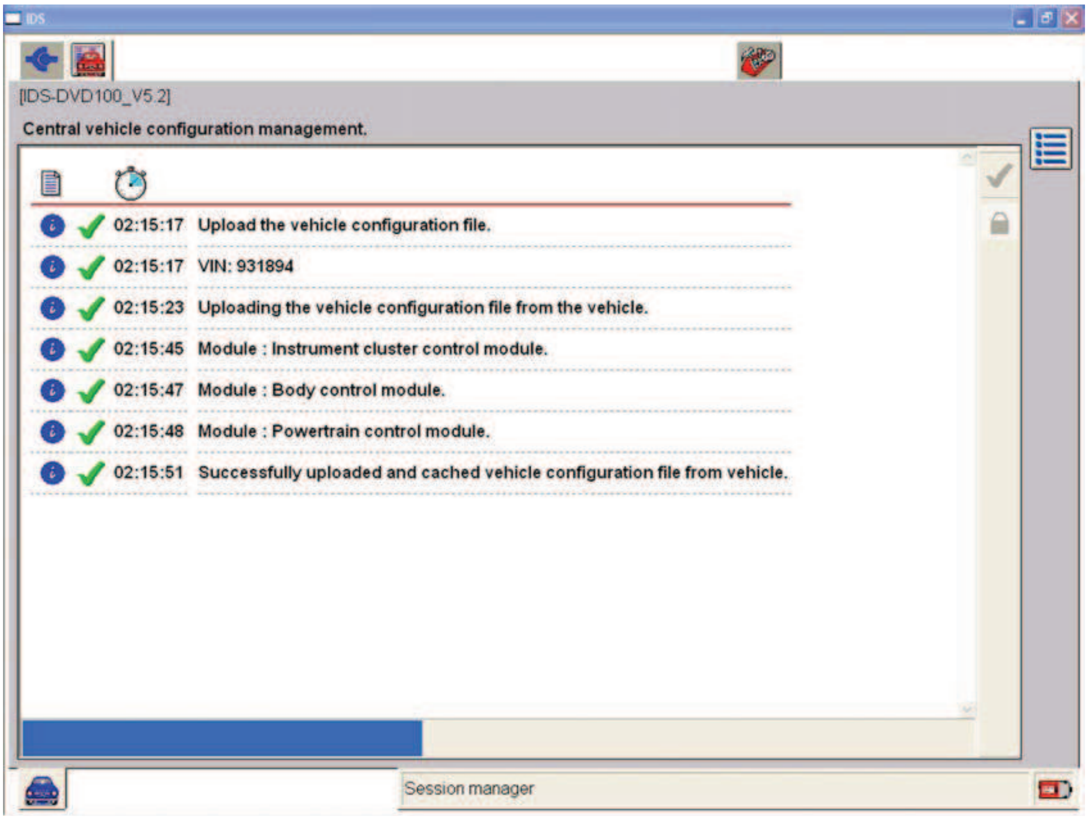
NOTE: The CCF file will not normally be shown in the above format on IDS. This is shown for illustration purposes only.

The CCF files are stored in several modules, one of which will be the master module. The other modules store copies of the CCF data which may be used when programming new modules.

When IDS is connected to the vehicle, the CCF data will automatically be uploaded from the vehicle to IDS.

The modules from which the CCF data have been uploaded, together with the current VIN, will be displayed.

Uploaded CCF



[IDS-DVD100_V5.2]

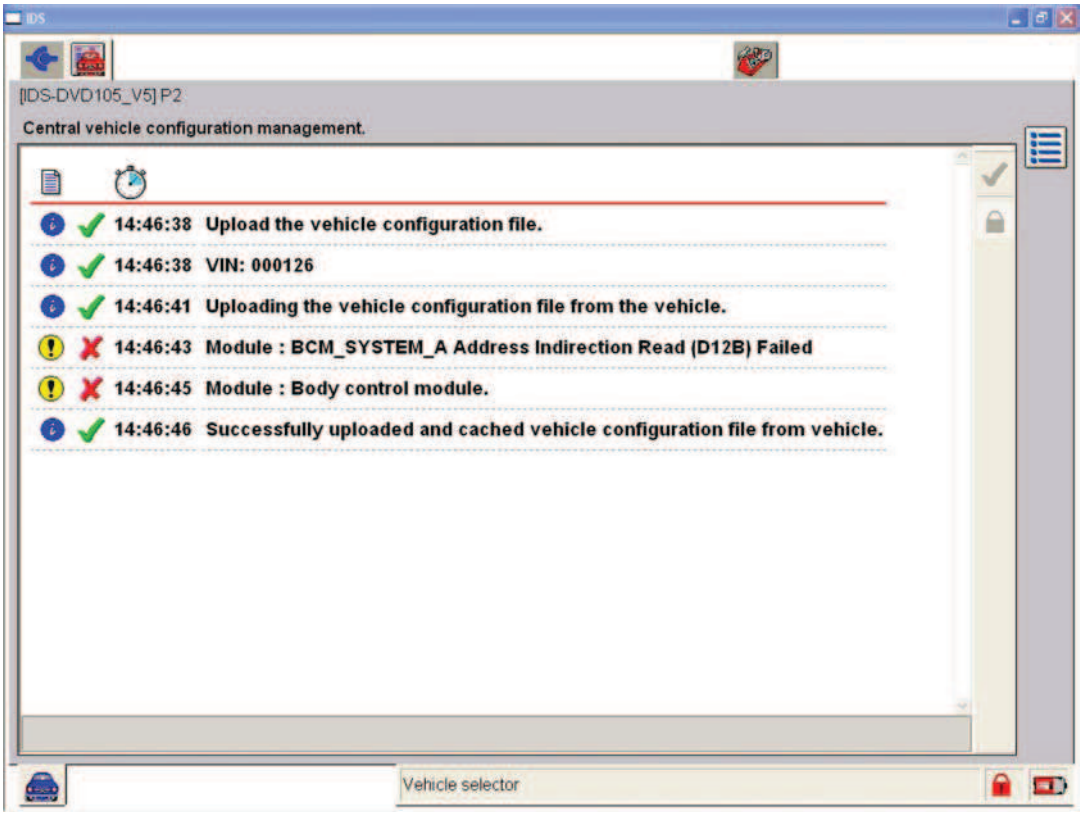
Central vehicle configuration management.

```
✓ 02:15:17  Upload the vehicle configuration file.
✓ 02:15:17  VIN: 931894
✓ 02:15:23  Uploading the vehicle configuration file from the vehicle.
✓ 02:15:45  Module : Instrument cluster control module.
✓ 02:15:47  Module : Body control module.
✓ 02:15:48  Module : Powertrain control module.
✓ 02:15:51  Successfully uploaded and cached vehicle configuration file from vehicle.
```

E79291

If IDS cannot communicate with one of the modules which holds the CCF data, a cross will be displayed adjacent to the module during the upload procedure.

CCF Upload - Error communicating with CJB (BCM)



Central vehicle configuration management.

```
✓ 14:46:38  Upload the vehicle configuration file.
✓ 14:46:38  VIN: 000126
✓ 14:46:41  Uploading the vehicle configuration file from the vehicle.
✗ 14:46:43  Module : BCM_SYSTEM_A Address Indirection Read (D12B) Failed
✗ 14:46:45  Module : Body control module.
✓ 14:46:46  Successfully uploaded and cached vehicle configuration file from vehicle.
```

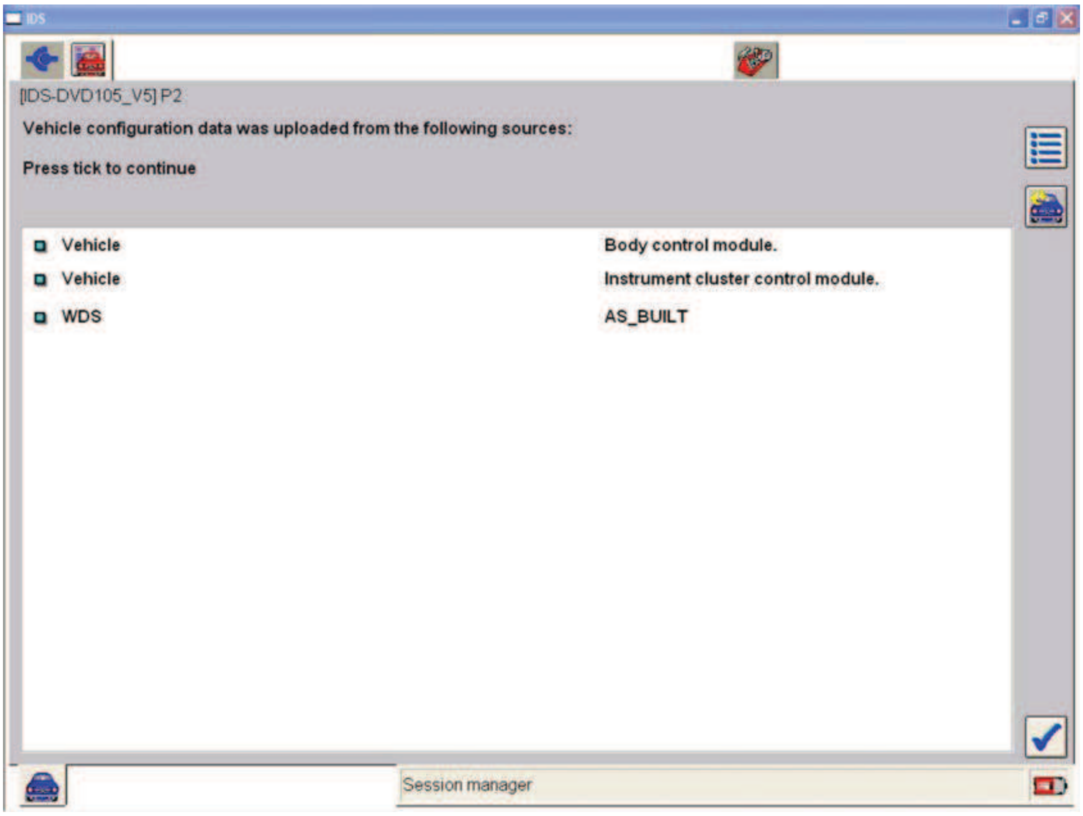
E92261

Selecting the confirmation 'tick' will proceed to the next screen which will display the CCF detail. This will be from the master CCF module.

The CCF file is held in three locations on the vehicle: The Central Junction Box (CJB), Instrument Cluster and the Engine Control Module.

IDS always displays the source from which the CCF data is available.

CCF Data Sources



E91785

[IDS-DVD105_V5] P2

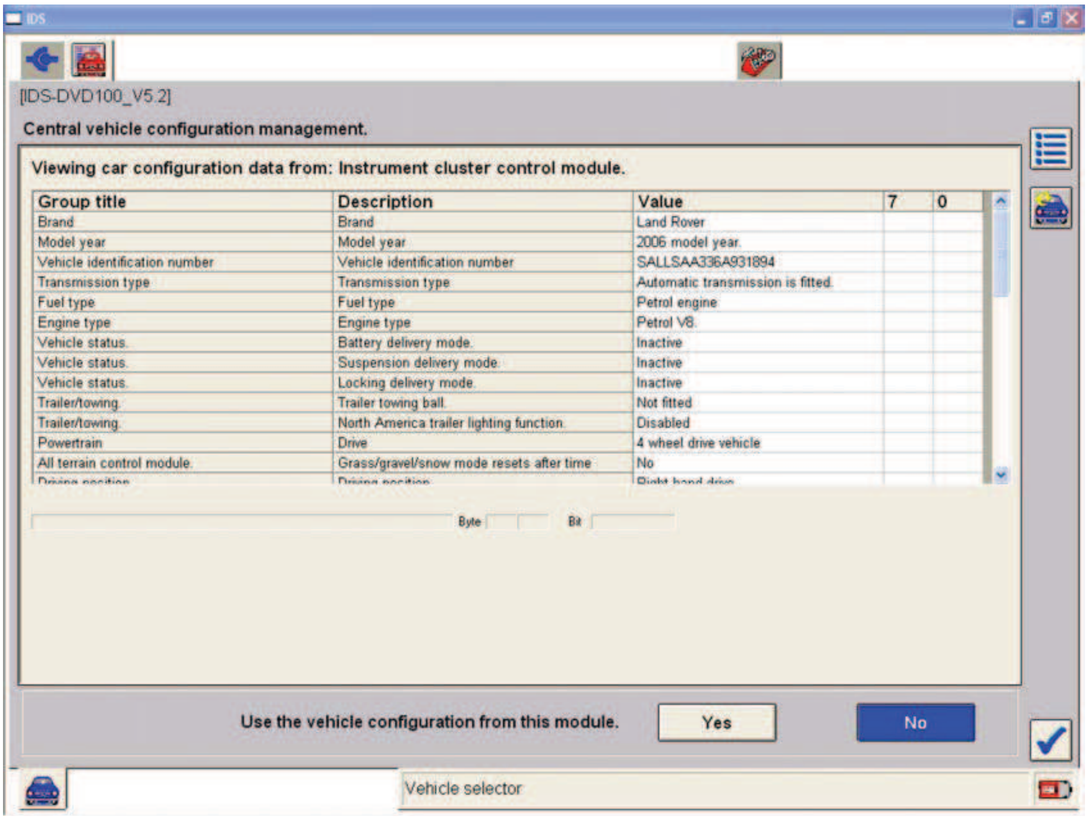
Vehicle configuration data was uploaded from the following sources:

Press tick to continue

Vehicle	Body control module.
Vehicle	Instrument cluster control module.
WDS	AS_BUILT

Proceeding to the next screen will display the CCF data. The CCF data will be displayed from the master module unless the operator selected an alternative source from the previous IDS screen.

CCF Data (change this to a display data from the CJB)



[IDS-DVD100_V5.2]

Central vehicle configuration management.

Viewing car configuration data from: Instrument cluster control module.

Group title	Description	Value	7	0
Brand	Brand	Land Rover		
Model year	Model year	2006 model year.		
Vehicle identification number	Vehicle identification number	SALLSAA336A931894		
Transmission type	Transmission type	Automatic transmission is fitted.		
Fuel type	Fuel type	Petrol engine		
Engine type	Engine type	Petrol V8.		
Vehicle status.	Battery delivery mode.	Inactive		
Vehicle status.	Suspension delivery mode.	Inactive		
Vehicle status.	Locking delivery mode.	Inactive		
Trailer/towing.	Trailer towing ball.	Not fitted		
Trailer/towing.	North America trailer lighting function.	Disabled		
Powertrain	Drive	4 wheel drive vehicle		
All terrain control module.	Grass/gravel/snow mode resets after time	No		
Driving position	Driving position	Right hand drive		

Use the vehicle configuration from this module.

E79292

The module from which CCF data is displayed is shown at the top of the screen.

NOTE: The EUCD part of the CCF file is not be displayed when viewing the CCF data using IDS. Only the Land Rover part of the CCF file will be displayed.

The CJB holds the Master copy of the CCF file and the other two modules hold backup copies.

The CJB transmits the Vehicle Parameters part of the CCF file on the HS and MS-CAN bus. Whenever the CAN networks are active, this data is broadcast onto these networks at regular intervals. The ECM and the instrument cluster, which hold backup copies of this data, do not broadcast onto the network.

The Master Module, in this case the CJB, will monitor the integrity of the memory where CCF information is stored. If a fault is detected a DTC will be set.

Within the make up of the Vehicle Parameters code is an area used for the vehicle VIN. This VIN data is implanted in every module on the vehicle that is capable of accepting it, and this data is locked in to each new module when programmed. This has service implications as it is also a vehicle security feature and will prevent the substitution of existing programmed modules from vehicle to vehicle. When replacing a module on a vehicle IDS must be used to perform this process

An example of the details which are held in the CCF section of the Vehicle Parameters code, is shown below:

Vehicle Parameters Code

- Vehicle Type
- Brand
- Model Year
- VIN

- Tire Dynamic Rolling Radius
- Brake System Type
- Brake Rotor size
- Final Drive Ratio
- Transmission Type
- Hand of Drive
- MOST configuration

Some fall into the category of Personalization Mode. These parameters may be changed by the dealer using IDS.

IDS must be used to configure new and existing modules. To change personalization settings, there is CCF editing tool built into IDS.

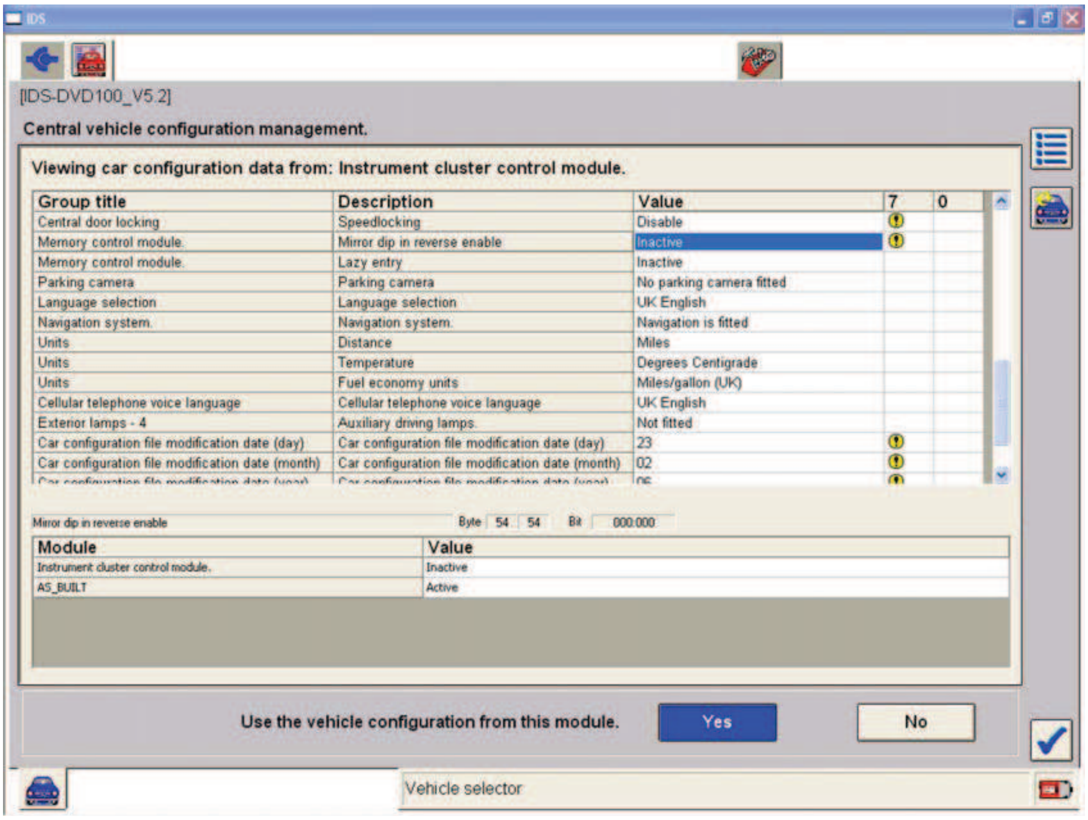
IDS will also store 'As Built Data'. This data will be stored on the IDS disc and can be used to restore the vehicle back to its original condition. Any personalization settings will have to be restored to the vehicle also.

The vehicle module codes held in the master and back up modules will be read by IDS when requested by the diagnostic program. These vehicle module codes are not transmitted cyclically on the CAN bus and are only read by diagnostic communication to IDS.

CCF Editing Options

Once the CCF data has been uploaded from the vehicle, it will be displayed as shown below.

CCF Data



[IDS-DVD100_V5.2]

Central vehicle configuration management.

Viewing car configuration data from: Instrument cluster control module.

Group title	Description	Value	7	0
Central door locking	Speedlocking	Disable	!	
Memory control module.	Mirror dip in reverse enable	Inactive	!	
Memory control module.	Lazy entry	Inactive		
Parking camera	Parking camera	No parking camera fitted		
Language selection	Language selection	UK English		
Navigation system.	Navigation system.	Navigation is fitted		
Units	Distance	Miles		
Units	Temperature	Degrees Centigrade		
Units	Fuel economy units	Miles/gallon (UK)		
Cellular telephone voice language	Cellular telephone voice language	UK English		
Exterior lamps - 4	Auxiliary driving lamps.	Not fitted		
Car configuration file modification date (day)	Car configuration file modification date (day)	23	!	
Car configuration file modification date (month)	Car configuration file modification date (month)	02	!	
Car configuration file modification date (year)	Car configuration file modification date (year)	06	!	

Mirror dip in reverse enable Byte 54 54 Bit 000.000

Module	Value
Instrument cluster control module.	Inactive
AS_BUILT	Active

Use the vehicle configuration from this module. Yes No

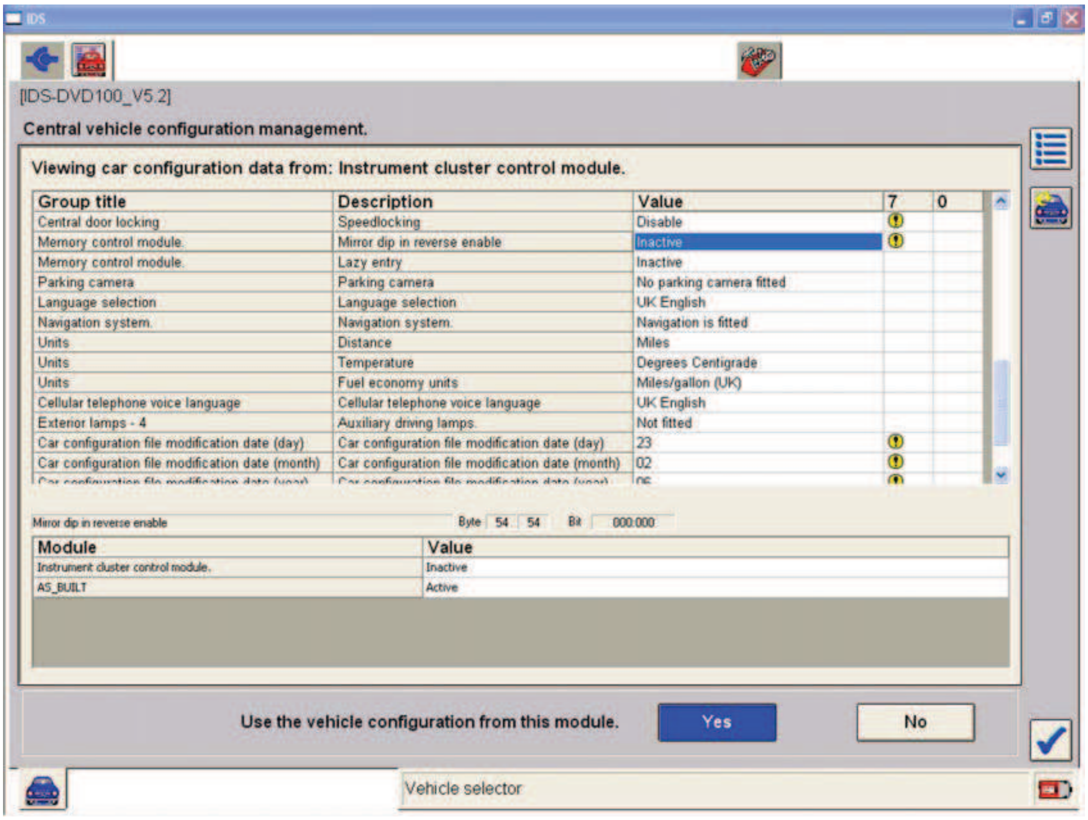
E79293

A question is displayed at the bottom of the screen, asking the user to confirm whether the data should be used from the currently displayed module or whether to use the CCF data from another source.

The number at the top of the fourth column displays how many conflicts are present when comparing the displayed CCF data to the As Built CCF Data.

Scrolling down the displayed page will reveal more of the CCF data.

CCF Data with Errors



[IDS-DVD100_V5.2]

Central vehicle configuration management.

Viewing car configuration data from: Instrument cluster control module.

Group title	Description	Value	7	0
Central door locking	Speedlocking	Disable	!	
Memory control module.	Mirror dip in reverse enable	Inactive	!	
Memory control module.	Lazy entry	Inactive		
Parking camera	Parking camera	No parking camera fitted		
Language selection	Language selection	UK English		
Navigation system.	Navigation system.	Navigation is fitted		
Units	Distance	Miles		
Units	Temperature	Degrees Centigrade		
Units	Fuel economy units	Miles/gallon (UK)		
Cellular telephone voice language	Cellular telephone voice language	UK English		
Exterior lamps - 4	Auxiliary driving lamps.	Not fitted		
Car configuration file modification date (day)	Car configuration file modification date (day)	23	!	
Car configuration file modification date (month)	Car configuration file modification date (month)	02	!	
Car configuration file modification date (year)	Car configuration file modification date (year)	06	!	

Mirror dip in reverse enable Byte 54 54 Bit 000:000

Module	Value
Instrument cluster control module.	Inactive
AS_BUILT	Active

Use the vehicle configuration from this module.

E79293

The exclamation error symbol;

Error Symbol

denotes in which parameter a CCF data conflict exists.

Highlighting the error value, will display additional information at the bottom area of the screen.

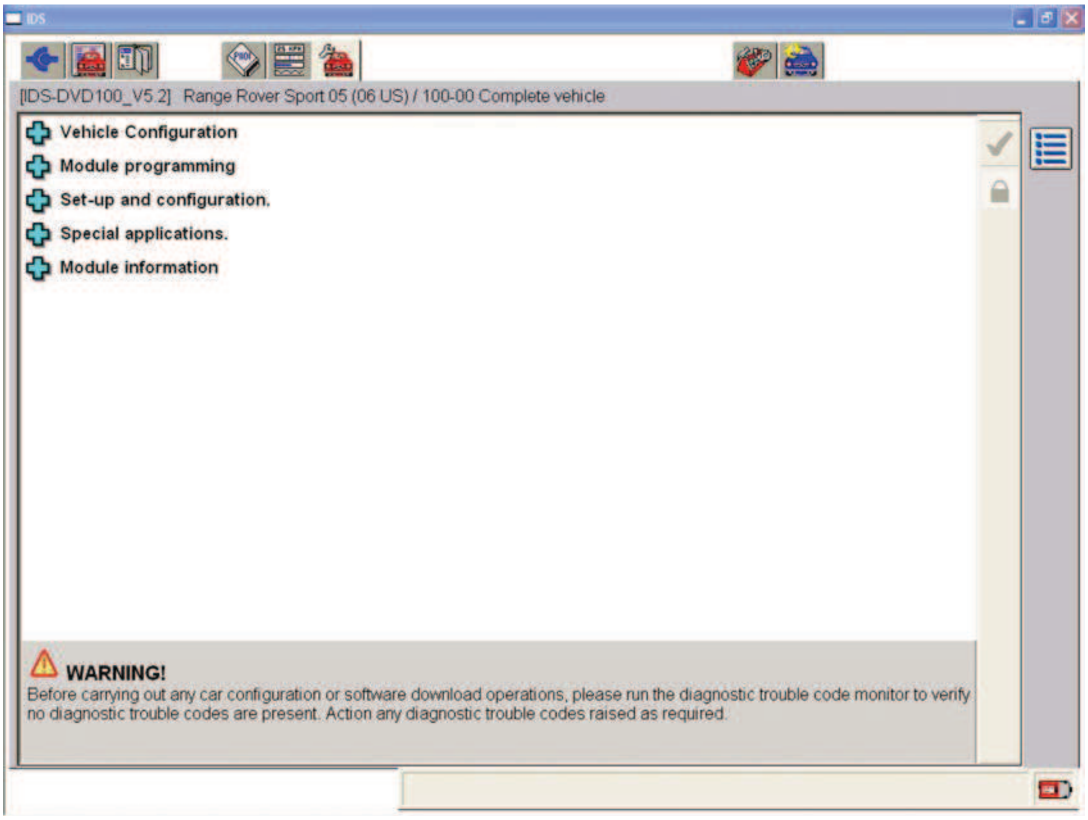
From the illustration it may be seen that the data relating to the **mirror dip in reverse enable** value is **Inactive** in the instrument cluster. However, the **mirror dip in reverse enable** value is set to **Active** in the as built data.

This shows why the error symbol is displayed.

In this example, the **mirror dip in reverse enable** value has been changed using the customer personalization settings.

A CCF editing tool is available which allows certain parameters of the CCF data to be changed using IDS. This is available from the vehicle configuration tab.

Configuration Menu



[IDS-DVD100_V5.2] Range Rover Sport 05 (06 US) / 100-00 Complete vehicle

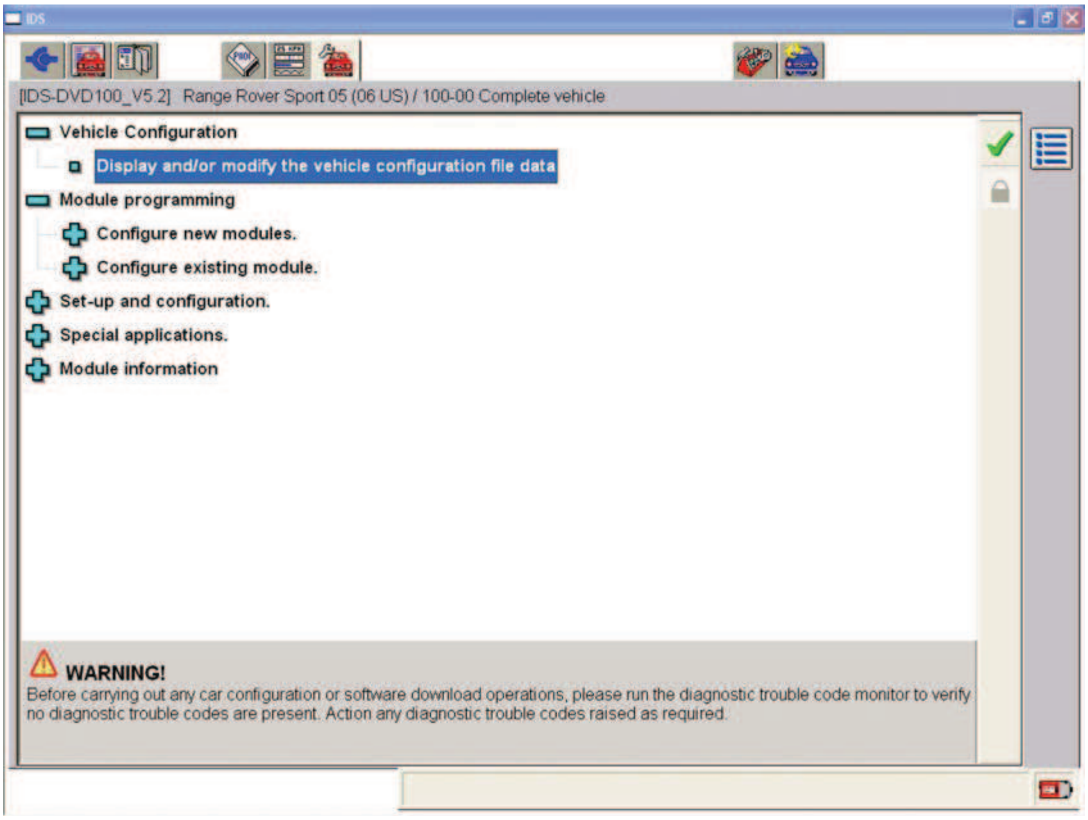
- Vehicle Configuration
- Module programming
- Set-up and configuration.
- Special applications.
- Module information

WARNING!
Before carrying out any car configuration or software download operations, please run the diagnostic trouble code monitor to verify no diagnostic trouble codes are present. Action any diagnostic trouble codes raised as required.

E79297

Expanding the vehicle configuration menu will reveal the options available.

Vehicle Configuration Menu



[IDS-DVD100_V5.2] Range Rover Sport 05 (06 US) / 100-00 Complete vehicle

- Vehicle Configuration
  - Display and/or modify the vehicle configuration file data
- Module programming
  - Configure new modules.
  - Configure existing module.
- Set-up and configuration.
- Special applications.
- Module information

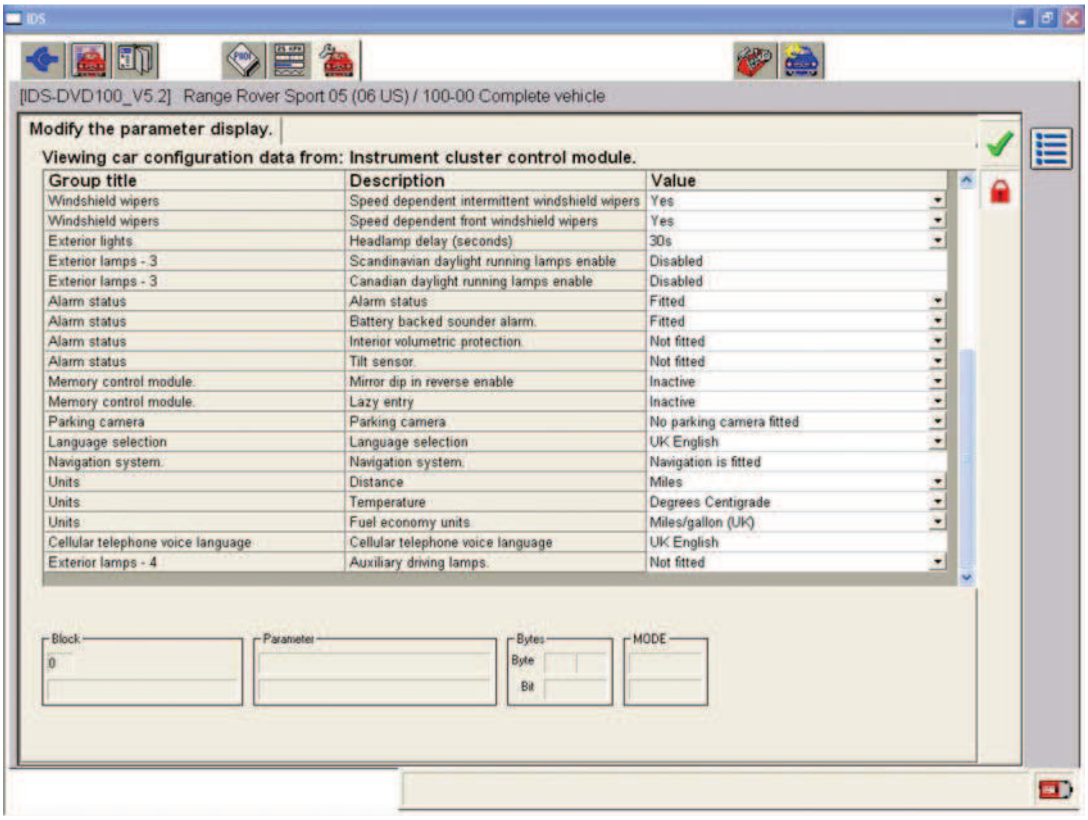
⚠ WARNING!

Before carrying out any car configuration or software download operations, please run the diagnostic trouble code monitor to verify no diagnostic trouble codes are present. Action any diagnostic trouble codes raised as required.

E79298

Confirming the selected option will display the CCF data editing screen.

CCF Data Editing Screen



[IDS-DVD100_V5.2] Range Rover Sport 05 (06 US) / 100-00 Complete vehicle

Modify the parameter display.

Viewing car configuration data from: Instrument cluster control module.

Group title	Description	Value
Windshield wipers	Speed dependent intermittent windshield wipers	Yes
Windshield wipers	Speed dependent front windshield wipers	Yes
Exterior lights	Headlamp delay (seconds)	30s
Exterior lamps - 3	Scandinavian daylight running lamps enable	Disabled
Exterior lamps - 3	Canadian daylight running lamps enable	Disabled
Alarm status	Alarm status	Fitted
Alarm status	Battery backed sounder alarm.	Fitted
Alarm status	Interior volumetric protection.	Not fitted
Alarm status	Tilt sensor.	Not fitted
Memory control module.	Mirror dip in reverse enable	Inactive
Memory control module.	Lazy entry	Inactive
Parking camera	Parking camera	No parking camera fitted
Language selection	Language selection	UK English
Navigation system.	Navigation system.	Navigation is fitted
Units	Distance	Miles
Units	Temperature	Degrees Centigrade
Units	Fuel economy units	Miles/gallon (UK)
Cellular telephone voice language	Cellular telephone voice language	UK English
Exterior lamps - 4	Auxiliary driving lamps.	Not fitted

Block: 0

E79295

Selecting the drop down arrow will reveal which changes may be made.

Editing Option Menu

Modules may be programmed using the CCF data from any of the available sources.

NOTE: If using the as built data to program modules, all customer personalization settings will be lost and will need to be reset.

NOTE: The As Built Data is copied onto the IDS software discs when it becomes available. Therefore, a situation may occur when the As Built Data is not available for a particular VIN number until the next IDS software release.

As built CCF data will only normally have to be used to program modules if the vehicle CCF data has become corrupt due to poor programming procedures carried out by the technician, or in during the unlikely event that all modules containing CCF data is renewed at the same time.

Module Configuration

There are two modes of module configuration. The first mode is required so that the module can interact with the vehicle correctly. Replacement modules will require configuration using IDS.

There are two module configuration options available when using IDS

Modules which require configuration on replacement are:

- Configure New Module
- Configure Existing Module

When the 'configure new module' menu is used, the boot loader and the calibration files are downloaded to the module.

When the 'configure existing module' menu is used, only the calibration files are downloaded to the module.

NOTE: To prevent Technicians from downloading calibration files to modules which do not require them, the option will not be available unless the VIN of the vehicle is withing the range where a software calibration file has been released in order to rectify a concern.

Customer Preferences

The second type of configuration data is customer preference driven. These are items that the customer may or may not want to have enabled. Typically, customer preference items can be toggled on or off by the using IDS.

Configuration is performed using IDS. Refer to the Dealer Options Index for modules on the vehicle that have customer preference items. Configure the items as needed.