

C'Mon diagnostic tool quicktour

Startup

```
=====  
C'Mon(c)J.Perrin  
=====
```

This is the startup splash screen, it displays for 2 second while trying to initiate communication with the ECU.

Engine Monitor

```
=====  
<Engine Monitor>  
  [=>][OK]  
=====
```

This is the root menu first item. Navigation is done using left and right button to cycle menu item and OK to drill down into sub-menu or UP to go back to parent menu.

The LCD display is 16 characters wide by 2 lines. First line is for information and menu navigation, second line is reserved for button help. Depending on the context, each bracketed item on second line might change to reflect the function of its associated board button. This shall be pretty intuitive to use.

Press 4th button [OK] to go down "Engine Monitor" menu.

```
=====  
Speed 16 km/h  
[UP][<=][=>][OK]  
=====
```

```
=====  
Batt 12.4V  
[UP][<=][=>][OK]  
=====
```

```
=====  
Coolant 90.1°C  
[UP][<=] [OK]  
=====
```

```
=====  
Raw Parameters  
[UP] [=>][OK]  
=====
```

```
=====
Param #1/9
[UP]    [=>][OK]
=====
```

Actually 9 datasets of engine parameters are available for display, these are composed of a bunch of hexadecimal datas, some might change while engine is running, other not. I still need to identify engine parameters in those sets like RPM, coolant temperature,etc... So this menu shall change in a near future with more understandable items. Press [=>] to cycle to second parameter dataset.

```
=====
Param #2/9
[UP][<=][=>][OK]
=====
```

Press [OK] to display current parameter dataset contents.

```
=====
0100003c3f050000
[UP][<<][>>][Rf]
=====
```

Press [<<] and [>>] to scroll through dataset hexadecimal values.
Press [Rf] to change cycle between raw, 8 bit or 16 bit display.
Press [UP] twice to go back to root menu then [=>] to display next item.

```
=====
03: 3f=63
[UP][<<][>>][Rf]
=====
```

This is 8 bit hex to decimal conversion, first number is data index in the current dataset,second is hex value, third is decimal value.

```
=====
03: 3fff=16383
[UP][<<][>>][Rf]
=====
```

This is 16 bit hex to decimal conversion, first number is data index in the current dataset,second is hex value, third is decimal value.

ECU Information

```
=====
<ECU Diagnostic>
  [<=][=>][OK]
=====
```

Press [OK] to drill down sub-menu of ECU informations.

```
=====
<ECU Info>
[UP][<=][=>][OK]
=====
```

Press [OK] to drill down menu and display ECU informations.

```
=====
ECU Id: YA19220
[UP]    [=>]
=====
```

This is ECU identification, YA19220 means BMW C1.
Press [=>] to display next ECU information.

```
=====
Part No: 7668133
[UP][<=][=>]
=====
```

This is part number of ECU.
Press [=>] to display next ECU information.

```
=====
HW Version: C2
[UP][<=][=>]
=====
```

Press [=>] to display next ECU information.

```
=====
SW Version: 8000
[UP][<=][=>]
=====
```

Press [=>] to display next ECU information.

```
=====
Factory date: ..
[UP][<=][=>][OK]
=====
```

Press [OK] to display ECU manufacture date.

```
=====
2000-10-30
[UP]
=====
```

Press [UP] to go back to ECU information menu then [=>] to display next item.

```
=====
Release Date: ..
[UP][<=]      [OK]
=====
```

Press [OK] to display ECU software release code.

```
=====
80001611
[UP]
=====
```

Strange date isn't it ? ☹

Press [UP] twice to go back to root menu then [=>] to display next root menu item.

ECU Faults

```

=====
<ECU Diagnostic>
  [ <= ] [ => ] [ OK ]
=====
  
```

Press [OK] to drill down sub-menu of ECU informations.

```

=====
<ECU Info>
  [ UP ]      [ => ] [ OK ]
=====
  
```

Press [=>] to cycle to ECU fault item.

```

=====
<ECU Faults>
  [ UP ] [ <= ] [ => ] [ OK ]
=====
  
```

This menu is for ECU fault management.

Press [OK] to drill down menu and display ECU informations.

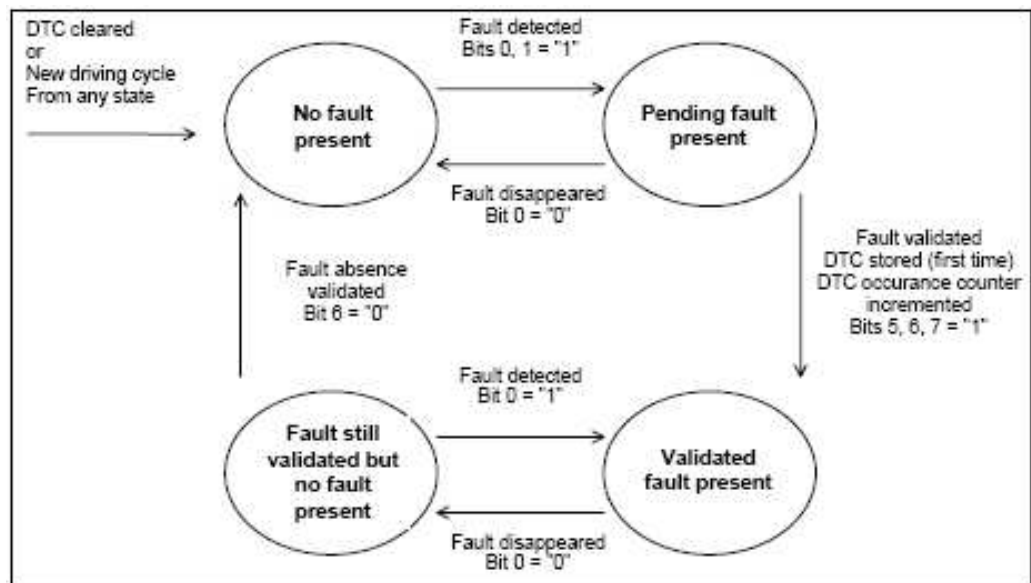
```

=====
1/2: 0309 P S V
  [ UP ]      [ => ] [ OK ]
=====
  
```

This is first fault out of two. Its DTC (Diagnostic trouble code) is 0309. Depending on DTC status, 3 letters might appear:

- "P" means Pending fault (currently present)
- "S" means Stored fault (fault was previously detected, validated and then store into ECU's memory)
- "V" means Validated (fault was detected and conditions were met to validate it)

Press [OK] to drill down menu and display current fault details.



```
=====
Oxygen Sensor He
[UP]    [=>][OK]
=====
```

This screen displays the beginning of current fault explanations. To scroll through fault text press [OK].

```
=====
Sensor Heating
[UP][<<][>>]
=====
```

Use [<<] and [>>] to scroll left and right the text.
Press [UP] then [=>] to display next DTC information.

```
=====
Pend. Present:0
[UP][<=][=>]
=====
```

This screen tells if current DTC is currently present.
Press [=>] for next DTC information.

```
=====
Pend. State:0
[UP][<=][=>]
=====
```

This screen tells if current DTC has been at least detected once in current driving cycle (driving cycle start with ignition on and stop with ignition off).
Press [=>] for next DTC information.

```
=====
Test Running:0
[UP][<=][=>]
=====
```

This screen tells whether the diagnostic trouble code test conditions are met at the time of request.
Press [=>] for next DTC information.

```
=====
Test Inhibit:1
[UP][<=][=>]
=====
```

This screen tells if the diagnostic trouble code test conditions are not met because of another fault in the ECU. (1)
Press [=>] for next DTC information.

```
=====  
Test Readiness:0  
[UP][<=][=>]  
=====
```

This screen tells if the diagnostic trouble code test has not yet been completed during the current driving cycle (1).
Press [=>] for next DTC information.

```
=====  
DTC Stored:1  
[UP][<=][=>]  
=====
```

This screen tells if the fault indicated by this DTC has been validated at least once and stored in ECU memory since this DTC was last cleared.
Press [=>] for next DTC information.

```
=====  
Valid. Present:0  
[UP][<=][=>]  
=====
```

This screen tells if the fault indicated by this DTC is currently validated in the server (ECU).
Press [=>] for next DTC information.

```
=====  
Valid. State:0  
[UP] [<=]  
=====
```

This screen tells if the fault indicated by this DTC has been validated at least once during the current driving cycle.
Press [UP] twice to go back to root menu then [=>] to display next root menu item.

```
=====  
<Reset ECU Err >  
[UP][<=] [OK]  
=====
```

To reset ECU error codes press OK.

ABS Information

```
=====  
<ABS Diagnostic>  
[UP][<=][=>][OK]  
=====
```

Press [OK] to drill down menu and display ABS informations.

```
=====  
<ABS Info>  
[UP]      [=>][OK]  
=====
```

Press [OK] to drill down menu and display ABS informations.

```
=====  
Part No:02335805  
[UP][<=][=>]  
=====
```

This is part number of ABS controller.
Press [=>] to display next ABS information.

```
=====  
HW Version: 18  
[UP][<=][=>]  
=====
```

This is ABS controller hardware version.
Press [=>] to display next ABS information.

```
=====  
SW Version: 17  
[UP][<=][=>]  
=====
```

This is ABS controller software code version.
Press [=>] to display next ABS information.

```
=====  
Factory date: ..  
[UP][<=]      [OK]  
=====
```

Press [OK] to display ABS controller manufacturing date.

```
=====  
2000-06-07  
[UP]  
=====
```

Press [UP] twice to go back to root menu then [=>] to display next ABS item.

ABS Faults

```
=====
<ABS Diagnostic>
[UP][<=][=>][OK]
=====
```

Press [OK] to drill down menu and display ABS informations.

```
=====
<ABS Info>
[UP]    [=>][OK]
=====
```

Press [=>] to cycle to ABS fault item.

```
=====
<ABS Faults >
[UP][<=][=>][OK]
=====
```

This is ABS fault management menu. To scan ABS for fault, press OK. Press [=>] to display next root menu item.

```
=====
No fault present
[UP]
=====
```

In this example, no fault is detected on ABS system, pressing UP twice allow to go back to root menu. This function is exactly the same as ECU Fault Management menu.

```
=====
<Reset ABS Err >
[UP][<=]    [OK]
=====
```

To reset ABS error codes press OK.

Setup

```
=====  
<Setup>  
  [ <= ]    [ OK ]  
=====
```

This setup menu launches a terminal server that can be accessed through RS232 with a terminal emulator (HyperTerminal), if the tool is not connected to C1 it can be powered through a 9v battery and a special cable (press left most key at power on). This is useful to change, delete or add fault codes descriptions. It also allows communicating directly with the ECU by sending special KBUS packets.

```
=====  
RS-232 Console  
[   CANCEL   ]  
=====
```

Here are the commands available in console setup mode:

```
command help:  
  
? - display help  
rst - reset memory  
dfc - dump fault codes  
dhc - dump hex codes  
rfc [fc#] - reset fault code (code#)  
gfc [fc#] - get fault code  
sfc [fc#] [text] - set fault code (code# text)  
> [dst] [hh hh hh ...] - display kbus request result  
* [dst] - scan local id params  
bye - exit console
```

Software updates

To update diagnostic tool software, you need:

- software update file (size is less than 100ko)
- A PC with a serial port or an USB to serial adapter cable
- Install Windows updating software on PC
- Replace diagnostic plug by a provided power cable connected to a 9v battery

Launch windows update software, configure correct serial port (default is COM1) and set speed to 38400 baud. Load software update file. While pressing right most button, power on diagnostic tool. You hear 3 fast beep and "Update Ready" is displayed on LCD screen. Back on PC, press connect and update buttons. Once update is done, power off diagnostic tool and test new software.