C'Mon diagnostic tool quicktour
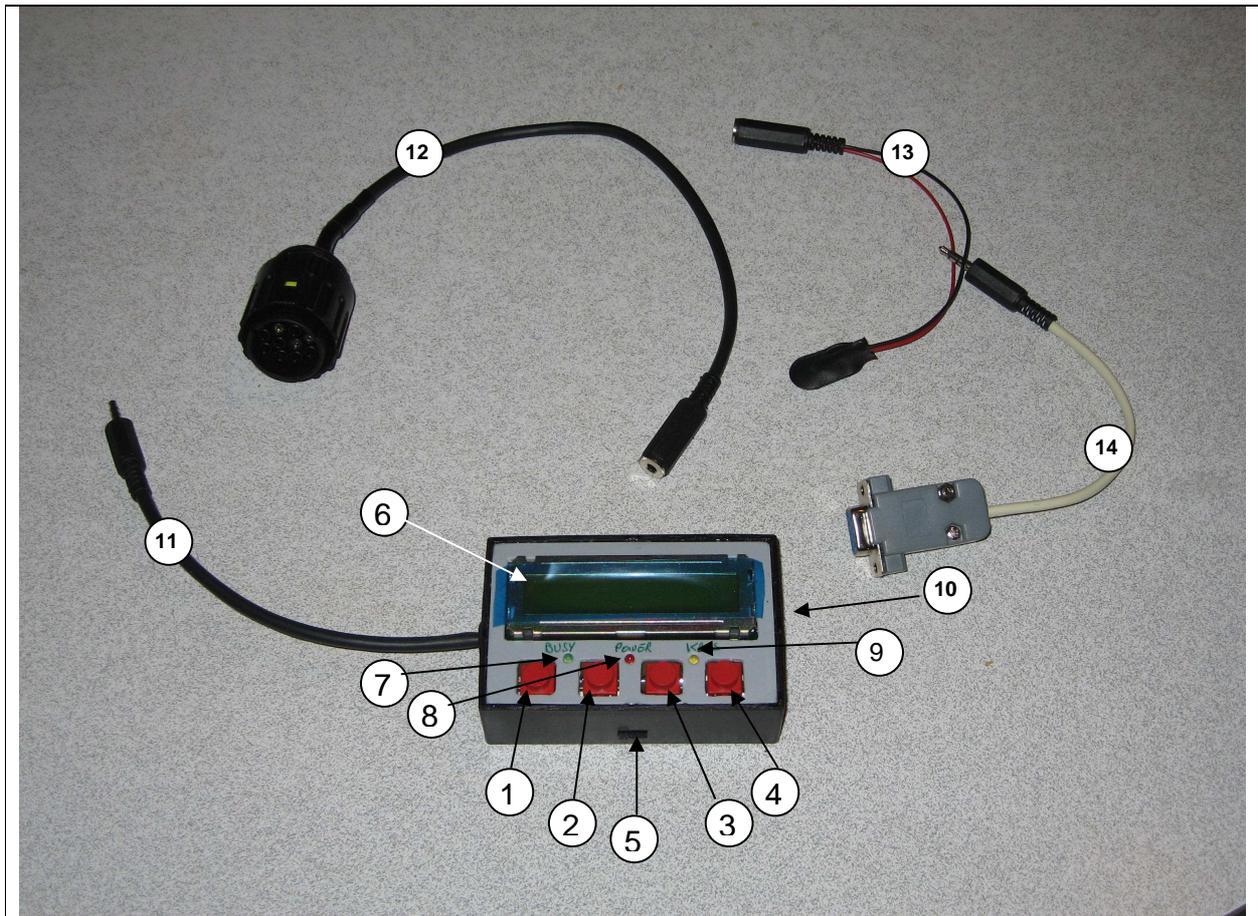
C'mon description and features

1 - Button #1
2 - Button #2
3 - Button #3
4 - Button #4
5 - Power switch
6 - LCD screen
7 - Busy led
8 - Power Led
9 - KBUS Led
10 - Serial cable plug
11 - Diagnostic and power cable plug
12 - Diagnostic cable
13 - Power cable
14 - Serial cable

Getting familiar with C'Mon device and cables

Cable connections for simulation mode
(9V battery required)

Cable connections for C1 diagnostic mode

Cable connection for serial terminal and
firmware update modes
(9V battery required)

Operation modes explained

Simulation mode

This mode allows offline C'mon features testing (no C1 connection required).

Setup appropriate cable connections:
- check device is powered off
- connect 9V battery to power cable
- connect power cable to C'mon device
- keep buttons #1 and #2 down while powering on C'mon device until next step
- LCD dispays "*** Simulation ***" and issue a dual tone beep

Serial terminal mode

This mode allows to display and setup fault codes and perform advanced operations.

To use this mode you need first to download "Putty" serial terminal:
http://www.chiark.greenend.org.uk/~sgtatham/putty/download.html

Setup appropriate cable connections:
- check device is powered off
- connect serial cable to C'mon device
- connect 9V battery to power cable
- connect power cable to C'mon device
- connect DB9 serial end to PC COM serial port
- start putty terminal
- setup Putty serial communication parameters to Connection type "Serial", Speed 19200 (8 data bits, Null parity, 1 stop bit)
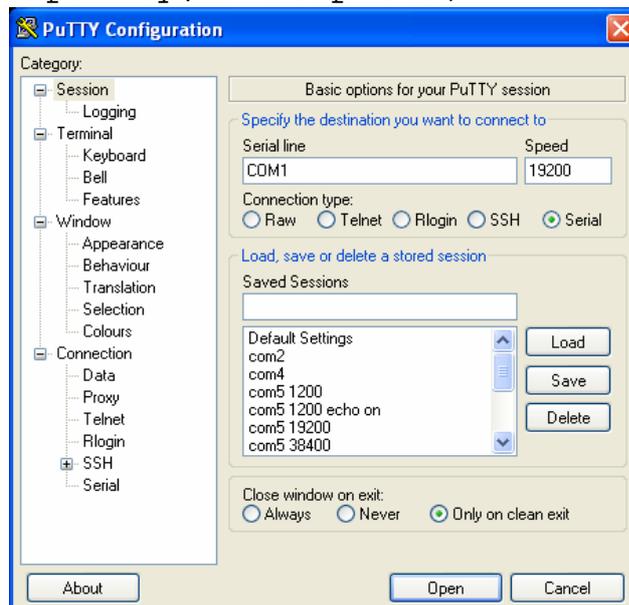
- push down buttons #1 and #3 while powering on C'mon device and until next step
- LCD dispays "*** Console ***" and issue a dual tone beep
- C'mon prompt shall appear into Putty terminal :

```
C'Mon Version v1.00  27-Oct-07
 ? for help
```

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
```

"**dfc**" display all fault codes ("sfc" commands format)
example:
sfc 304 Oxygen Sensor Circuit Malfunction

"**dhc**" display all fault codes in hexadecimal values
example:
6f 72 20 48 65 ....Oxygen Sensor He
61 74 69 6e 67 20 43 69 72 63 75 69 74 20 4d 61 6c 66 75 6e 63 74
69 6f 6e 00 00 00 00 00 00 00 ating Circuit Malfunction.......

"**rfc [fc#]**" remove fault code text #[fc]
example: (reset fault code 309):
rfc 309

"**gfc [fc#]**" display fault code text #[fc] (use 4 digits)
example: (display fault code 304):
gfc 304
#304 : 'Oxygen Sensor Circuit Malfunction'

"**sfc [fc#] [text]**" set fault code #[fc] to "[text]"
example:
sfc 304 Oxygen Sensor Circuit not working

"**> [dst] [hh hh hh ...]**" send a KBUS packet to device #[dst] and
display hex string result (advanced feature to be documented
later)

"*** [dst]**" scan local id params (raw parameter sets) for device
#[dst] (advanced feature to be documented later)

Reseting device Memory

Note: this operation should only be performed if
"Unknow fault code" appears into ECU or ABS
diagnostic mode or if a firmware update requires
doing so.

Setup appropriate cable connections:
- check device is powered off
- connect 9V battery to power cable
- connect power cable to C'mon device
- push down <u>all</u> buttons while powering on C'mon
  device and until next step
- LCD dispays "** Reset Mem. **" and issue a dual
  tone beep
- <u>operation duration is about 1 minute</u>
- device reboots after memory reset
- power off C'mon device

C'mon firmware serial update

To use this mode you need a new firmware. You also need to download flash upgrade "TinyBld" application:

http://www.etc.ugal.ro/cchiculita/software/tinybld195.zip

Setup appropriate cable connections:
- check device is powered off
- connect serial cable to C'mon device
- connect 9V battery to power cable
- connect power cable to C'mon device
- connect DB9 serial end to PC COM serial port
- start "tinybldWin.exe" Windows program
- setup application serial communication parameters to 38400 bps
- push "Browse" button and select new firmware file
- Push "Write Flash" and immediately power on C'mon device
- Firmware upload takes about 40 seconds
- When upload done, C'mon device restart
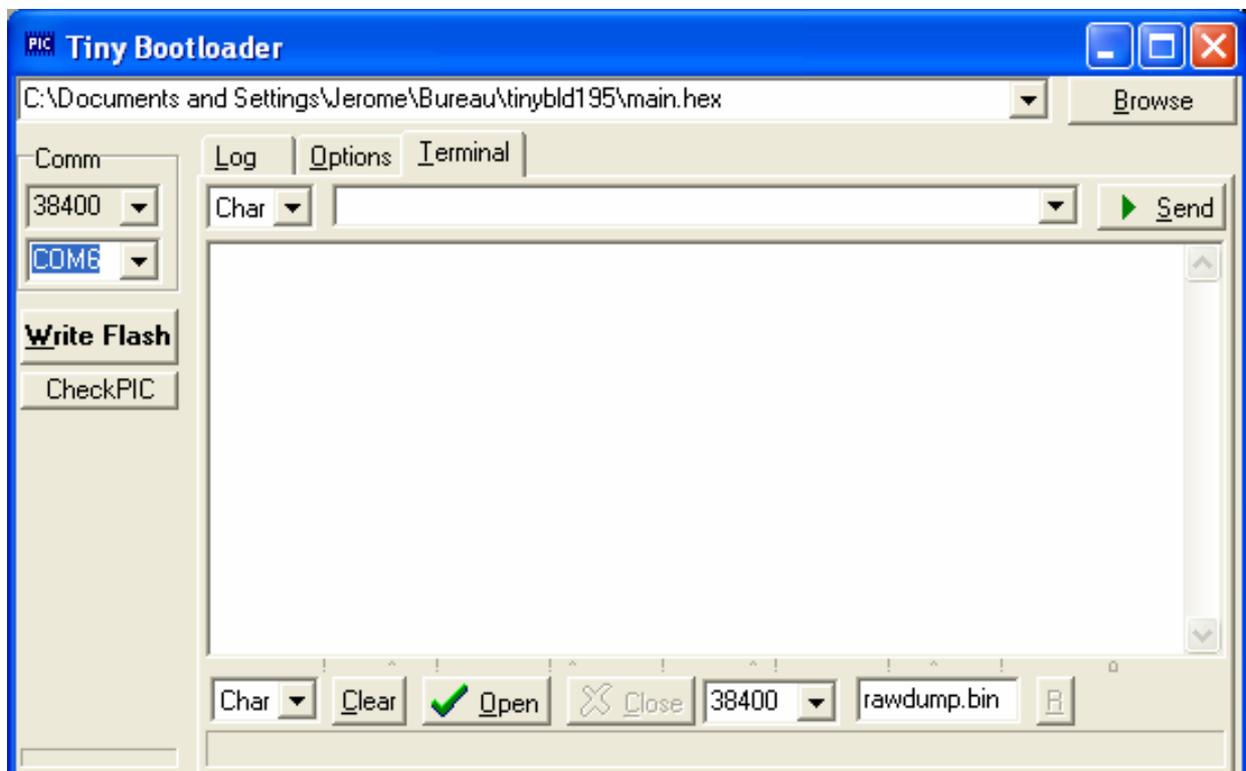
C1 diagnostics Quicktour

Startup

```
================
C'Mon(c)J.Perrin
V1.00  17-Oct-07
================
```

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 34 km/h
[UP]    [=>][OK]
================
```

```
================
Batt 11.5V
[UP][<=][=>][OK]
================
```

```
================
Coolant 45.7 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.

```
================
03:3fff3f0500010
[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.

```
================
03:3c= 60 (1)
[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.

```
================
03:3c3f=15423 (2
[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.

```
================
8000BOOT1611
[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.
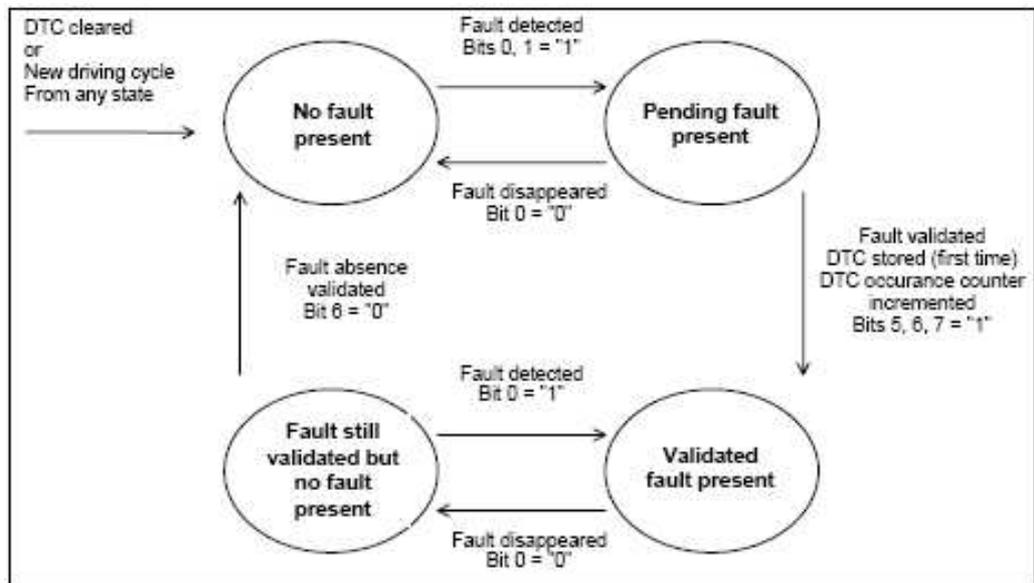
```
================
Oxygen Sensor He
[UP]    [=>][OK]
================
```

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.

```
===============
<ECU Reset 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.

```
================
<ABS Reset Errs>
[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 or putty).
Setup communication parameters to:

      Communication : Serial
      Speed: 19200
      Bits: 8
      Parity : N (Null)
      1, no handshake).

If the tool is not connected to C1 it can be powered through a 9v battery and a special cable. 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     ]
================
```