

# The Car Hacker's Handbook: A Guide for the Penetration Tester - Craig Smith (2016)

## B. DIAGNOSTIC CODE MODES AND PIDS



In [Chapter 4](#) we looked at modes and parameter IDs in diagnostic codes. This appendix lists a few more common modes and interesting PIDs for reference.

### **Modes Above 0x10**

Modes above 0x10 are proprietary codes. Here are some common modes specified by the ISO 14229 standard:

**0x10** Initiates diagnostics

**0x11** Resets the ECU

**0x14** Clears diagnostic codes

**0x22** Reads data by ID

**0x23** Reads memory by address

**0x27** Security access

**0x2e** Writes data by ID

**0x34** Requests download

**0x35** Requests upload

**0x36** Transfers data

**0x37** Requests transfer exit

**0x3d** Writes memory by address

**0x3e** Tester present

## **Useful PIDs**

Some interesting PIDs for modes 0x01 and 0x02 include the following:

**0x00** PIDs supported (0x01–0x20)

**0x01** Monitor the status of the MIL

**0x05** Engine coolant temperature

**0x0C** RPM

**0x0D** Vehicle speed

**0x1C** OBD standards to which this vehicle conforms

**0x1F** Run time since vehicle started

**0x20** Additional PIDs supported (0x21–0x40)

**0x31** Distance traveled since DTCs cleared

**0x40** Additional PIDs supported (0x41–0x60)

**0x4D** Time run with MIL on

**0x60** Additional PIDs supported (0x61–0x80)

**0x80** Additional PIDs supported (0x81–0xA0)

**0xA0** Additional PIDs supported (0xA1–0xC0)

**0xC0** Additional PIDs supported (0xC1–0xE0)

Some vehicle information service numbers for mode 0x09 include:

**0x00** PIDs supported (0x01–0x20)

**0x02** VIN

**0x04** Calibration ID

**0x06** Calibration verification numbers (CVN)

**0x20** ECU name

For a list of further service PIDs to query,  
see [http://en.wikipedia.org/wiki/OBD-II\\_PIDs](http://en.wikipedia.org/wiki/OBD-II_PIDs).