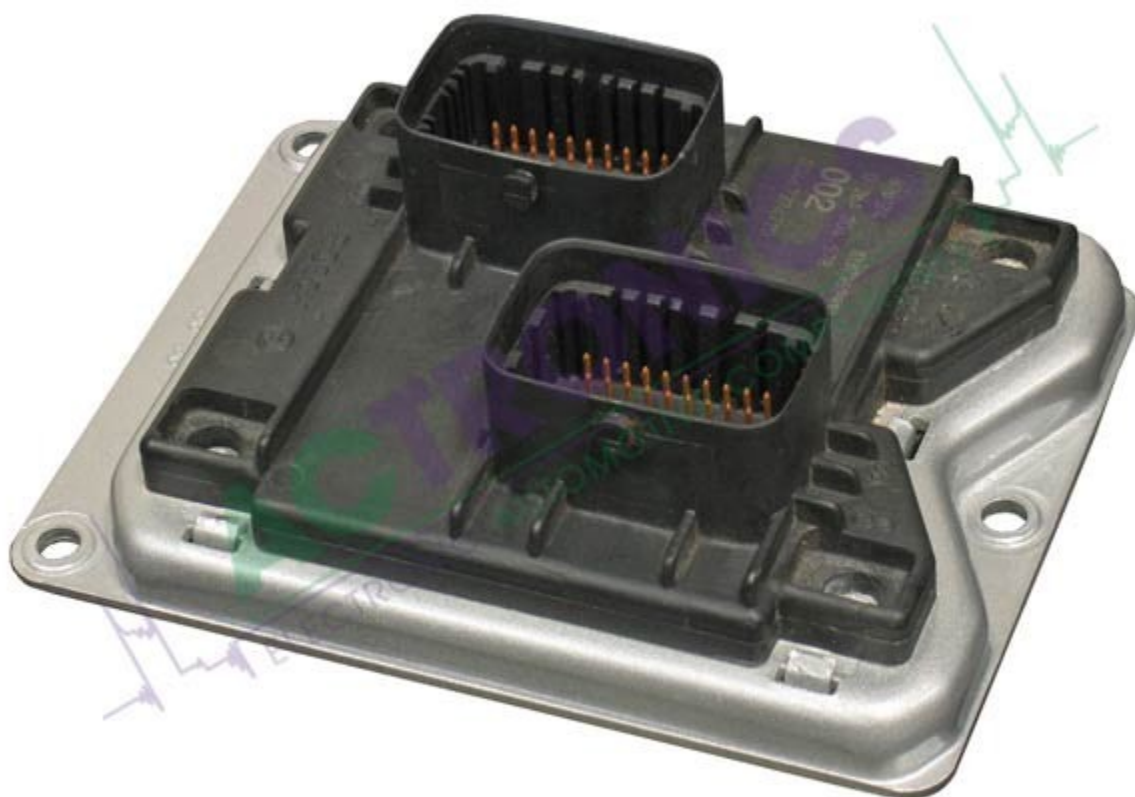


Opel Motronic 1.5.5 checksum correction



Written by: Pixis5
Date: November 2010
For more info: www.ecuconnections.com
Revision: 1

Again, note that $E4C1h + 1B3Eh = FFFFh$ (both banks are equal).

How to calculate the checksum for a modified file.
I'll use HxD editor (<http://mh-nexus.de/en/hxd/>) but anything similar will do.

- 1) Set both checksums to 00 00 FF FF, that way the sum won't change the data checksum.

Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	
0001FF90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFA0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFB0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFD0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFF0	FF	FF	FF	FF	FF	FD	D7	FF	00	00	FF	FF	D8	2E	FF	AC	yyyyyyý×ý..ýýø.ý~

- 2) Sum up all the 128kb using the checksum 16-bit function (under the Analysis menu).

Offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	
0001FED0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FEE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FEF0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF10	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF20	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF30	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF40	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF50	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF60	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF80	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FF90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFA0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFB0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFD0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyy
0001FFF0	FF	FF	FF	FF	FF	FD	D7	FF	00	00	FF	FF	D8	2E	FF	FF	yyyyyyyyyyyyyyyy

Checksums

C:\Documents and Settings\JP\Desktop\PowerBoost\Astra\2.0 1999\Astra 1999 2.0 8v 0261206102.bin

Algorithm	Checksum	Usage
Checksum-16	E4C1	

Generate checksums

Available algorithms:
Checksum-8
Checksum-16
Checksum-32
Checksum-64
CRC-16
CRC-16 CCITT
CRC-32
Custom CRC (32-bit)

Custom CRC...

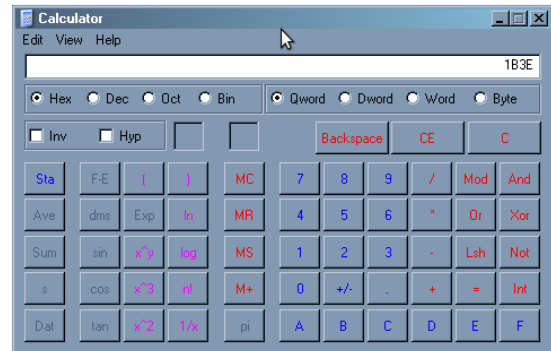
Region
☒ Selection ☐ Entire file

☐ Compare with checksum:

OK Cancel

3) Now, that value is the first part of both checksums. Using the calculator do $\text{FFFFh} - \text{Value}$ to get the second checksum value.

offset(h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	
0001FE00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FE01	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FE02	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF00	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF10	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF20	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF30	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF40	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF50	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF60	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF80	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FFA0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FFB0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FFC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FFD0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FFE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FFFFFFFFFFFFFFFF
0001FF00	FF	FF	FF	FF	FF	FD	D7	FF	00	00	FF	FF	D8	2E	FF	AC	FFFFFFFF-0..900



Checksums			
C:\Documents and Settings\JP\Desktop\PowerBoost\Astra\2.0 1999\Astra 1999 2.0 8v 0261206102 bin			
Algorithm	Checksum	Usage	
Checksum-16	E4C1		

4) Edit both checksums like (Value1,Value2).

Offset (h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	
0001FF60	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FF70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FF80	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FF90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FFA0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FFB0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FFC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FFD0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FFE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	yyyyyyyyyyyyyyyyyy
0001FFF0	FF	FF	FF	FF	FF	FD	D7	FF	E4	C1	1B	3E	D8	2E	FF	AC	yyyyyyx[aa]>0.y-

5) Recheck everything by calculating again the 16bit sum of everything. That value should still be the same Value1.

Offset (h)	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
0001FF60	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FF70	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FF80	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FF90	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FFA0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FFB0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FFC0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FFD0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FFE0	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF	FF
0001FFF0	FF	FF	FF	FF	FF	FD	D7	FF	E4	C1	1B	3E	D8	2E	FF	AC

Generate checksums

Available algorithms:

Checksum-8
Checksum-16
Checksum-32
Checksum-64
CRC-16
CRC-16 CCITT
CRC-32
Custom CRC (32-bit)
SHA-1

Custom CRC...

Region

☒ Selection
☐ Entire file

☐ Compare with checksum:

OK

Cancel

Checksums

C:\Documents and Settings\JP\Desktop\PowerBoost\Astra\2.0 1999\Astra 1999 2.0 8v 0261206102.bin

Algorithm	Checksum	Usage
Checksum-16	E4C1	

All information and values given in this document may be used at own risk.
I do not stand in for any problems. Thanks to the memebbers from www.ecuconnections.com