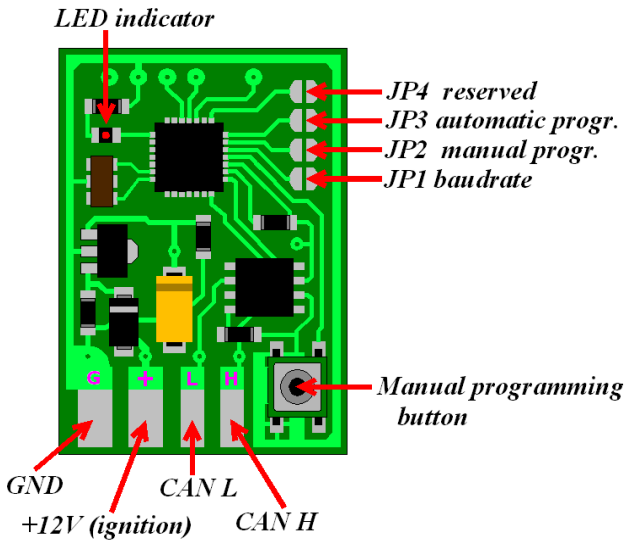
Renault CAN immobilizer emulator EML937/212 installation guide

2014.07.01 edition 01



EML937/21.2 technical data:

Supply voltage: 10-15V (DC)

Data baud rate: 250/ 500 kbps

Supported cars: Clio II, Trafic, Master, Cango with immobilizer systems via CAN bus.

Wiring description:

[GND] - Ground.
[+12V] - power supply after ignition switch ***(Terminal 15)***
[CAN L] – Data bus CAN low .
[CAN H] – Data bus CAN high .

Jumper (JP1-JP4) table:

Jumper	Description	Jumper open (not connected)	Jumper closed (connected)
JP1	Baud rate	250 kbps	500 kbps
JP2	Manual programming	Normal operation status	Manual programming status
JP3	Automatic programming	Normal operation status	Automatic programming status
JP4	Reserved		

Pairing emulator and engine ecu have three ways:

Fist, most popular:

1. clear engine ECU (Electronic Control Unit) immobilizer data (make in new state)
2. connect emulator, according pictures below
3. switch on ignition
4. Engine ECU automatically writes emulator data
5. **Learning successfully, engine will be start.**

Second, advanced 1, used in cars when immobilizer system sometimes work properly, but not stability. For programming need „catch“ correct key reading:

1. Select „Automatic programming“, solder jumper JP3
2. Connect emulator according pictures below
3. Disconnect engine ECU (or remove ECU supply fuse)
4. Switch ignition on, if key reading incorrect (car immobilizer indicator blink fast), switch ignition off and repeat again. (Switching times no limited. Learning will be complete when will be „catch“ correct key reading (car immobilizer indicator go on and still light, emulator LED indicator go on and after few seconds go out)
5. Switch ignition off
6. Remove jumper JP3
7. Connect engine ECU
8. **Learning successfully, engine will be start.**

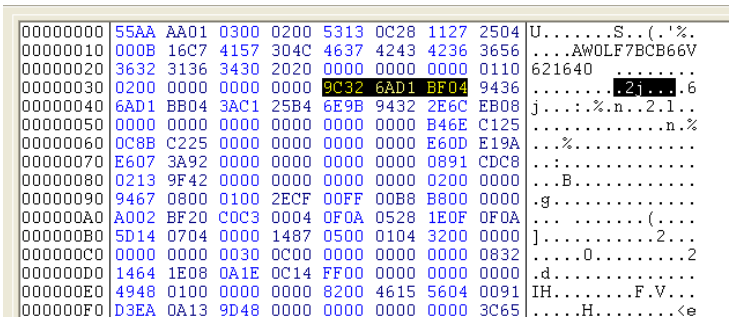
Third way, advanced 2, used in cars when engine ECU programming is complicated (first way is not possible), key lost or fully damaged, or UCH module damaged (second way is not possible). In this way (Manual programming) need enter Crypto Lo and Crypto Hi data (six bytes) in to emulator. Crypto Lo and crypto Hi data possible read from UCH eeprom (93C66)

1. Read UCH eeprom (93C66) and count from dump Crypto Lo, Crypto Hi bytes (see dump example below)
2. Separate byte in two half-bytes and each half convert from hex to dec.
   Example:

Crypto Lo: 9C 32 6A D1, Crypto Hi: BF 04.	
Separated in hex	Converted in DEC
9	9
C	12
3	3
2	2
6	6
A	10
D	13
1	1
B	11
F	15
0	0
4	4

3. Set on jumper JP2 (Manual programming), connect power supply (DC 12V) to emulator (CAN L, and CAN H still disconnected)
4. LED go on, emulator ready for entering data (time to start entering no limited)
5. Shortly press programming button, LED goes out
6. After few seconds LED blink once, it means – enter first digit
7. Press button 9 times (see example), each press indicated by LED blink
8. Wait few seconds, LED blink twice – enter second digit, press button 12 times
9. Repeat procedure for all 12 digits, if digit is zero – no need press button, only wait second digit indication
10. After the last digit entering, LED start blink fast (five times in second)
11. Disconnect power supply, remove jumper JP3, connect emulator according pictures below
12. **Learning successfully, engine will be start.**

Trafic, Clio II, Master UCH dump example:



00000000	55AA	AA01	0300	0200	5313	0C28	1127	2504	U.....S..(.'%.
00000010	000B	16C7	4157	304C	4637	4243	4236	3656	....AW0LF7BCB66V
00000020	3632	3136	3430	2020	0000	0000	0000	0110	621640 .....
00000030	0200	0000	0000	0000	9C32	6AD1	BF04	9436	.....2j....6
00000040	6AD1	BB04	3AC1	25B4	6E9B	9432	2E6C	EB08	j...:.%.n..2.l..
00000050	0000	0000	0000	0000	0000	0000	B46E	C125	.....n.%
00000060	0C8B	C225	0000	0000	0000	0000	E60D	E19A	...%.....
00000070	E607	3A92	0000	0000	0000	0000	0891	CDC8	..:.....
00000080	0213	9F42	0000	0000	0000	0000	0200	0000	...B.....
00000090	9467	0800	0100	2ECF	00FF	00B8	B800	0000	.g.....
000000A0	A002	BF20	C0C3	0004	0F0A	0528	1E0F	0F0A	... .(....
000000B0	5D14	0704	0000	1487	0500	0104	3200	0000	].....2...
000000C0	0000	0000	0030	0C00	0000	0000	0000	0832	.....0.....2
000000D0	1464	1E08	0A1E	0C14	FF00	0000	0000	0000	.d.....
000000E0	4948	0100	0000	0000	8200	4615	5604	0091	IH.....F.V...
000000F0	D3EA	0A13	9D48	0000	0000	0000	0000	3C65	.....H.....<e

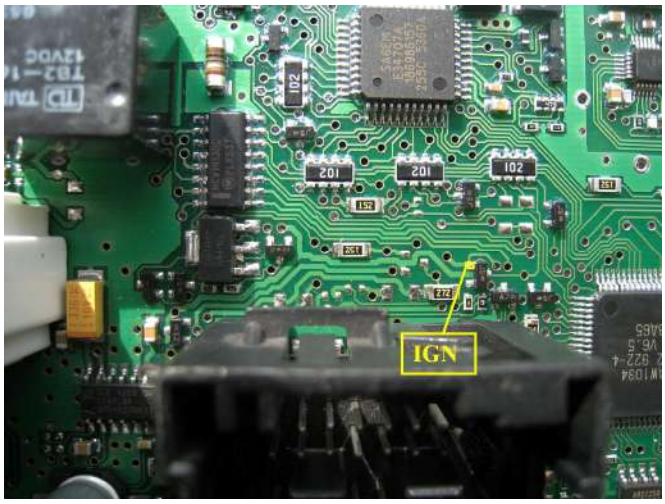
Trafic, Master, Clio II UCH dump example:

"Crypto Lo"(9C 32 6A D1) and "Crypto Hi" (BF 04) bytes marked with yellow in black background.

[!] Be carefully, and check dump swap. Correct dump begins: 55AA, incorrect AA55.

[!] It's not all dump, only fragment.

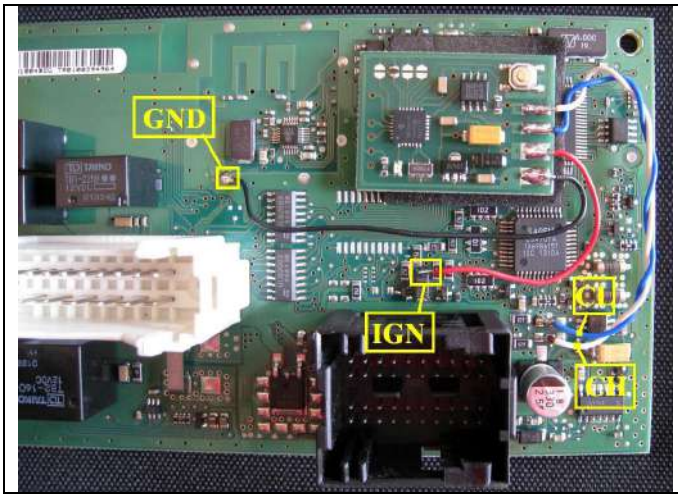
Trafic II, Master II UCH connection points:

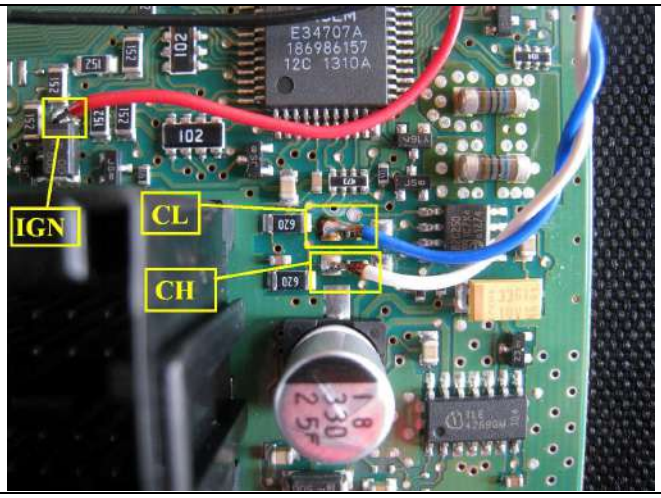


Trafic, Master 40 pin black connector wiring description:

Pin No.	***Description***	***Action***
1	+12V (Terminal 30)	
2	Immobilizer LED indicator	Cut after emulator installation
8	CAN	
10	CAN	
33	Ignition (Terminal 15)	
40	K-Line (Diagnostic interface pin 7)	

Clio II UCH connection points:





Clio II 40 pin black connector wiring description:

Pin No.	***Description***	***Action***
5	Immobilizer LED indicator	Cut after emulator installation
7	+12V (Terminal 30)	
9	CAN L	
10	CAN H	
14	Starter relay control	Short to ground (enable starter)
18	K-Line (Diagnostic interface pin 7)	
33	Ignition (Terminal 15)	