

XPROG Programmer

Users Manual



Universal Programmer XPROG allows to program internal EEPROM of MOTOROLA microcontrollers family : MC68HC05xxx, MC68Hc705xxx, MC68HC08xxx, MC68HC11xxx, as well as consequent EEPROM series 24Cxx, 25Cxx, 64Lxx, 93Cxx, 95Cxx and similar.

Big amount of consequent EEPROM is supported widely used in car audio- and CD players, car computers (instrument panels (DASHBOARD), AIRBAG, immobilizers).

All Motorola microcontrollers can be programmed "on-board" (without taking from the circuit pack).

Operating system: Microsoft Windows 95/98/Me/2000, Windows XP-functioning not stable.

The XPROG supports in circuit and on board programming 68HC05, 68HC08, 68HC11, SPI, EEPROM .

Motorola microcontrollers

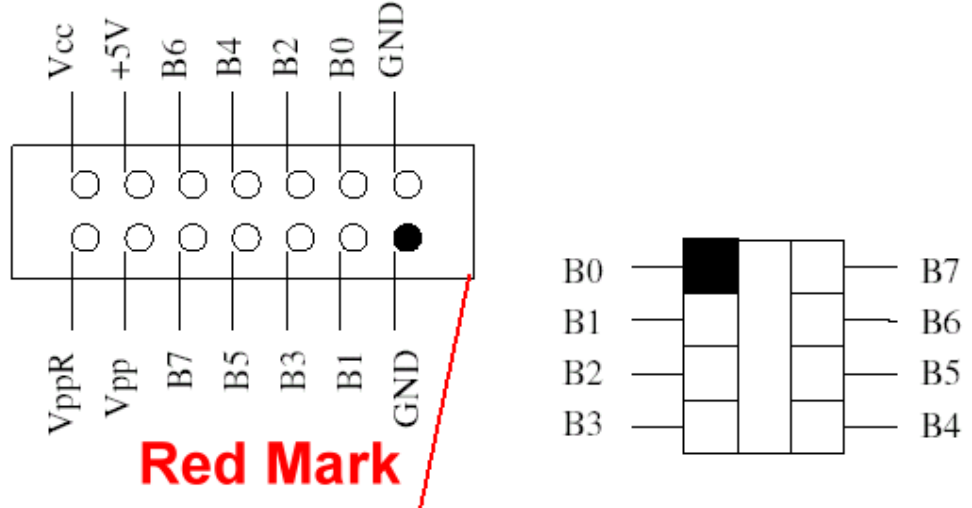
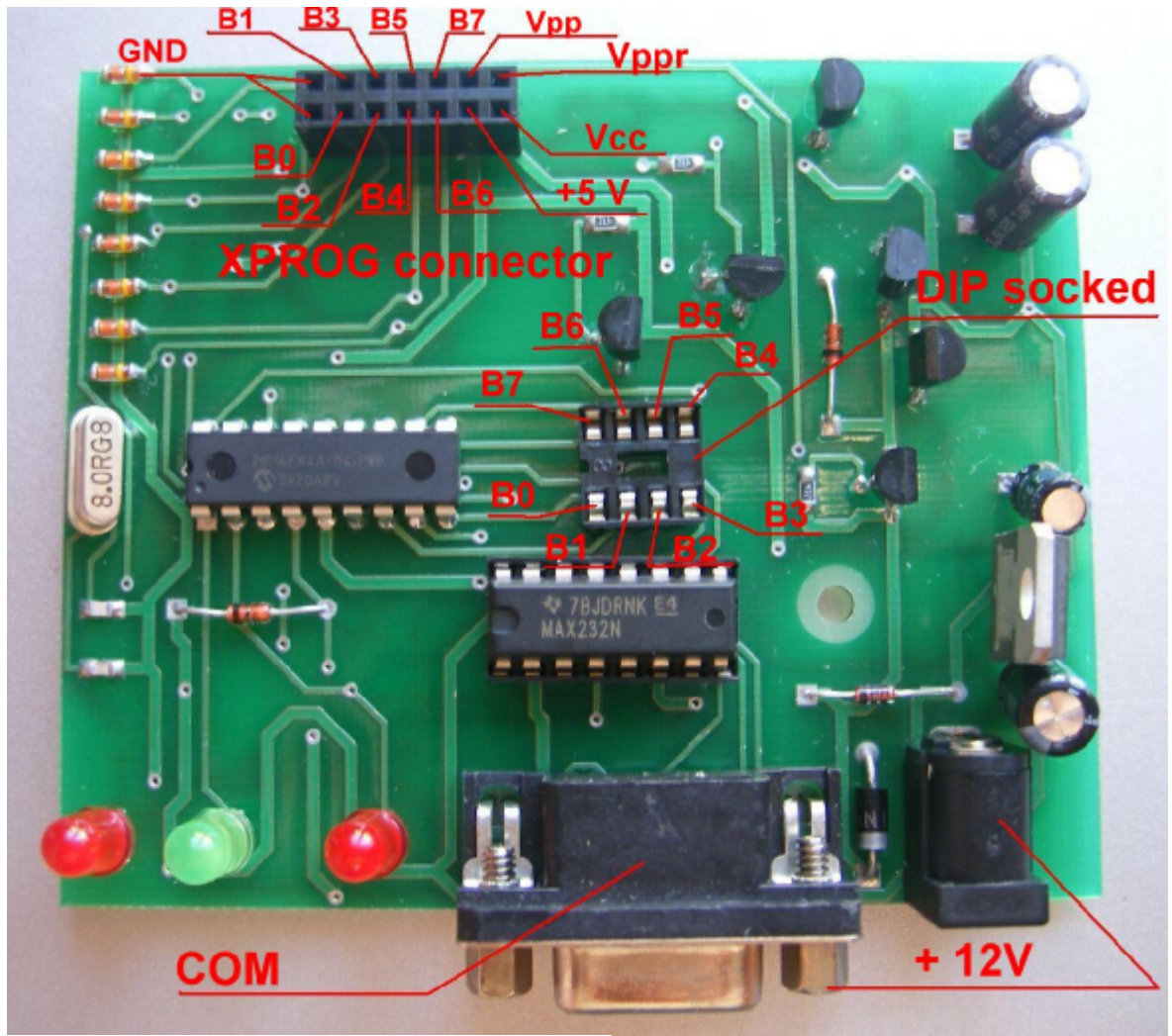
- MC68HC11A8
- MC68HC11E9
- MC68HC711E9
- MC68HC811E2
- MC68HC11E20
- MC68HC11G5
- MC68HC711G5
- MC68HC11N4
- MC68HC11F1
- MC68HC11PH8
- MC68HC711PH8
- MC68HC11PA8
- MC68HC711PA8
- MC68HC11K4
- MC68HC711K4
- MC68HC11KA4
- MC68HC711KA4
- MC68HC11L6
- MC68HC711L6
- MC68HC11P2
- MC68HC11F1
- MC68HC11PH8(OH30R Q=614kHz)
- MC68HC11PH8(3D64J Q=614kHz)
- MC68HC11P2(OG10V Q=614kHz)
- MC68HC11P2(1E53M Q=614kHz)
- MC68HC11P2(3E74J Q=614kHz)
- MC68HC11EA9(2D47J)
- MC68HC11EA9(1D47J)
- MC68HC11EA9
- MC68HC05B6/16/32
- MC68HC705B16/16N/32
- MC68HC05X16/32
- C68HC05B32 (new type from Audi CHORUS)
- MC68HC05H12(OH57A)
- MC68HC05E6(OG72G)
- MC68HC05E6(OF82B)
- MC68HC05X32(OD69J; 1H52A)
- MC68HC05X32(OD53J)
- MC68HC08AZ32
- C68HC08AZ32(OJ66D)
- MC68HC08AS60
- MC68HC08AZ60
- MC68HC08AZ60A

SERIAL EEPROM

AT93C46	CAT24C01	24C01A	93C06	M6M80011P	X24C00
AT93C46A	CAT24WC01	24LC01B	93LCS46	M6M80021P	X24C01
AT93C56	CAT24C02	24C02A	93LC46B	M6M80041P	X2402
AT93C57	CAT24WC02	24LC02B	93C56	NM93C06	X2404
AT93C66	CAT24C04	24C04A	93LC56	NM93C46	X2408
AT59C11	CAT24WC04	24LC04B	93C66	NM93C14	X24164
AT59C12	CAT24C08	24C08A	93LC66	NM93C56	X24165
AT59C13	CAT24WC08	24LC08B	93C76	NM93CS56	X2444
AT93C46	CAT24C16	24C16A	93LC76	NM93C66	X24C44
AT93C46A	CAT24WC16	24LC16B	93C86	NM93CS66	
AT93C56	CAT24C32	24C32A	93LC86	NM93C86A	
AT93C57	CAT24WC32	24LC32B	93C46	SDE2506	
AT93C66	CAT24C64		85C72	SDE2526	
AT59C11	CAT24WC64		85C82		
AT59C12	CAT64LC10		85C92		
AT59C13	CAT64LC20				
	CAT64LC30				
	CAT93C46				
	CAT93C46A				
	CAT93C56				
	CAT93C57				
	CAT93C66				
	CAT93C66A				
	CAT93C86				

Attention: This version of programmer only supports MCU MOTOROLA and microcircuits EEPROM specified here.

Programmer board layout



For reading and writing the EEPROM chips "on-board" (without taking from the circuit pack) it is necessary to disconnect power pin of the chip from circuit pack.

All Motorola microcontrollers can be programmed "on-board" (without taking from the circuit pack).

Programming MCU MOTOROLA can be produced "on-board" through universal XPROG-connector (DB-14).

TARGET CONNECTION

This section contains information how to connect XPROG to various targets to access internal target resources such as EEPROM, MCU.

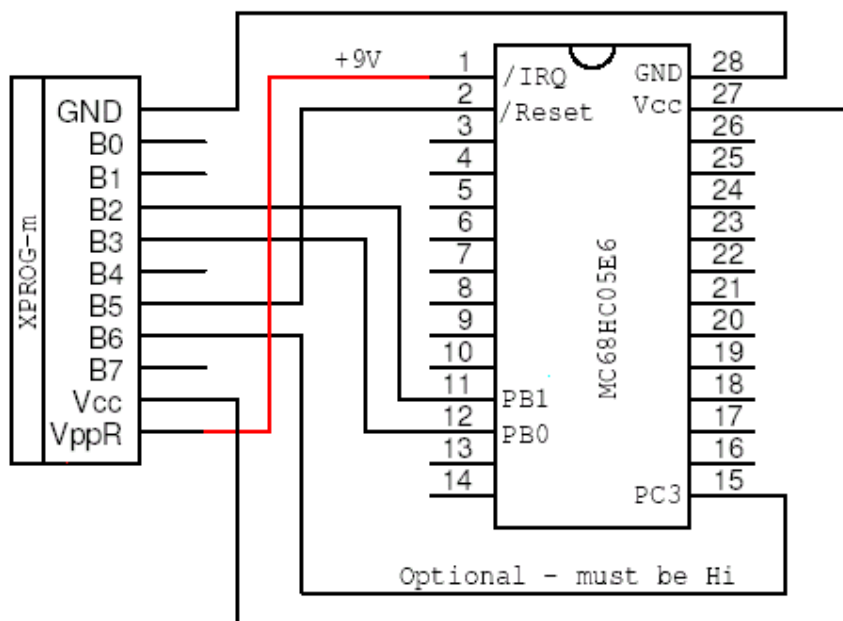
Note: Nets marked “Optional - must be Lo or Hi TTL logic level” not require connection with XPROG if they have described level in the circuit.

Note: Some circuit connections can disturb proper XPROG operation. In this case you must disconnect corresponding MCU pin rom circuit.

Warnig: XPROG Vpp and VppR pins have hi voltage who can damage circuit. If you are not sure that you can't damage circuit ,you must disconnect this MCU pin rom circuit.

MC68HC05 family

MC68HC05E6



Mask sets: 0F82B, 0G72G

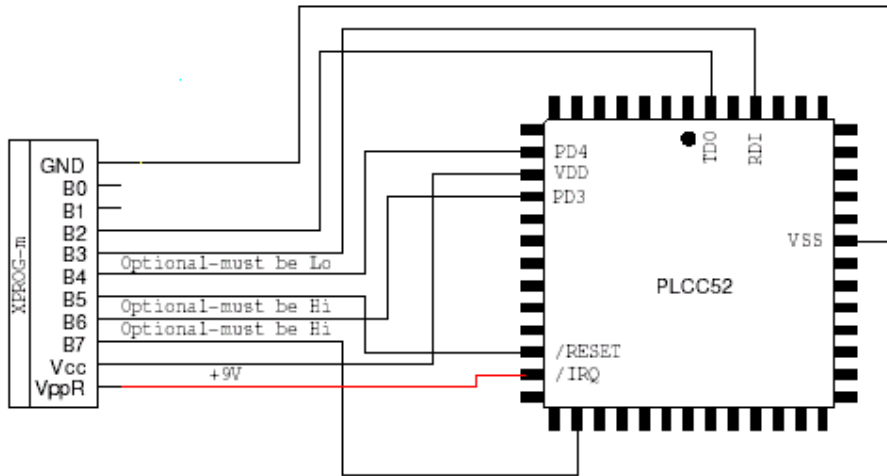
Oscillator: 3, 4 pin

Packages: SOIC28, SDIP28

EEPROM: 0x0100 – 0x019F

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	-	0/1	1	-	+5V±5%	+9V±5%

MC68HC05B6/B8/B16/B32 (PLCC52)



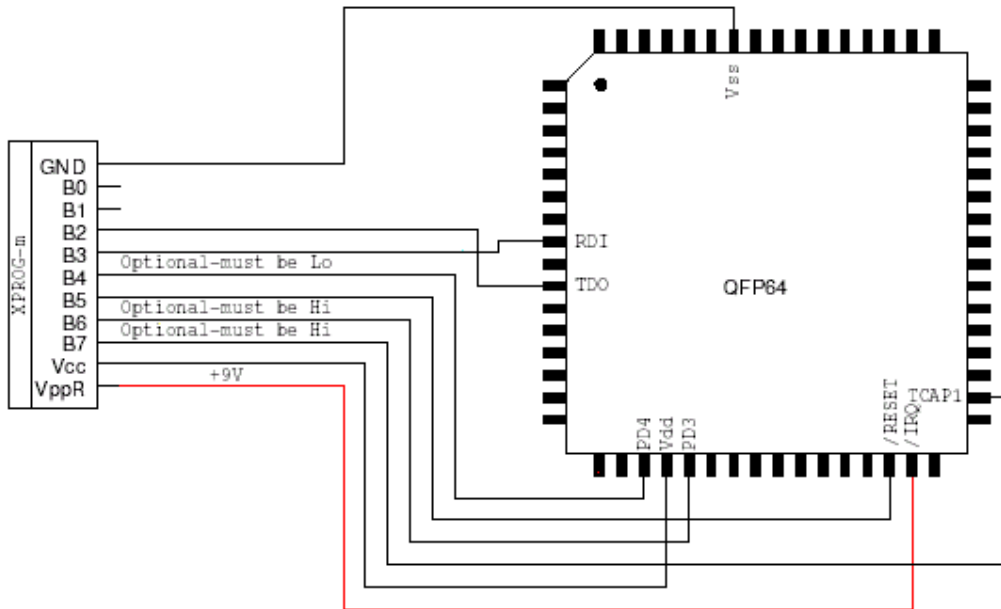
Mask sets:

Oscillator: 16, 17 pin **EEPROM:** 0x0101 – 0x01FF

Packages: PLCC52 **CFG(EEPROM):** 0x0100

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	1	1	+5V±5%	+9V±5%

MC68HC05B6/B8/B16/B32 (QFP64)



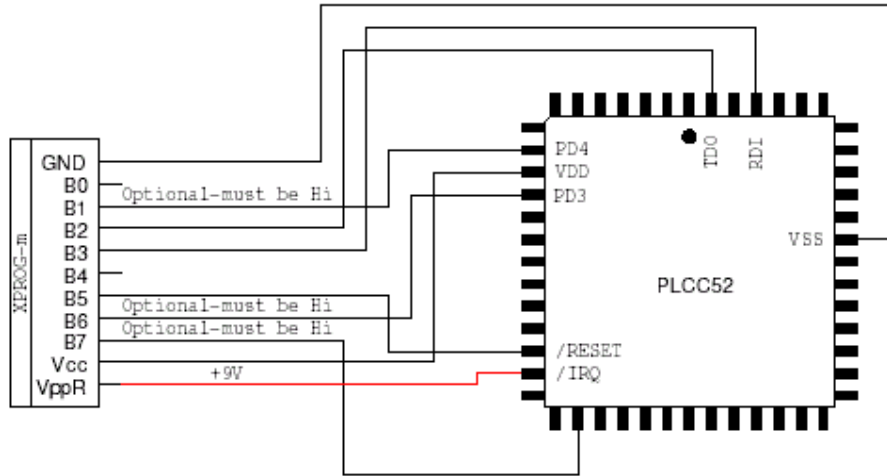
Mask sets:

Oscillator: 28, 29 pin **EEPROM:** 0x0101 – 0x01FF

Packages: QFP64 **CFG(EEPROM):** 0x0100

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	1	1	+5V±5%	+9V±5%

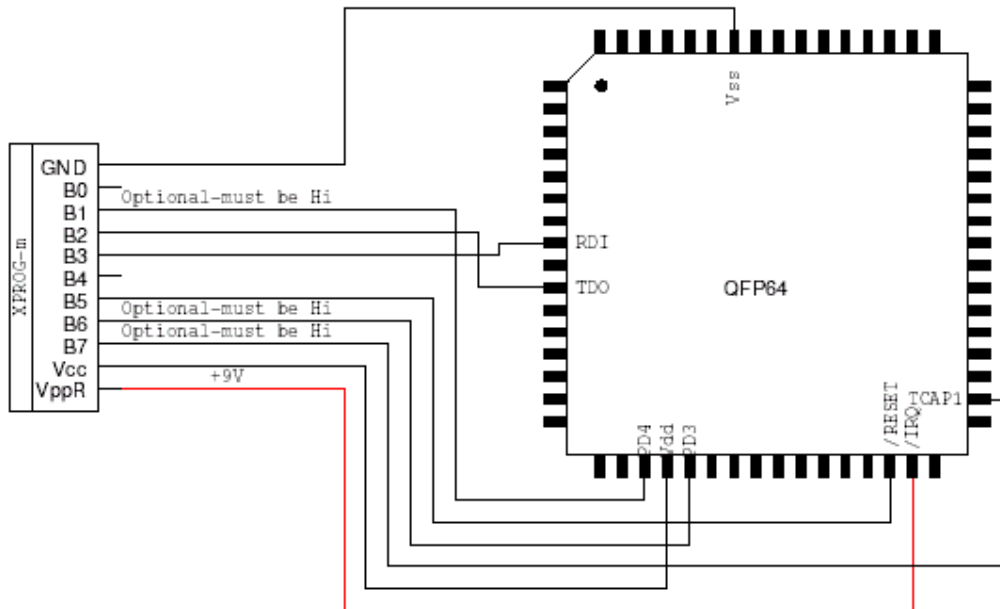
MC68HC705B16N/B32 (PLCC52)



Mask sets:
Oscillator: 16, 17 pin **EEPROM:** 0x0101 – 0x01FF
Packages: PLCC52 **CFG(EEPROM):** 0x0100

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	1	0/1	0/1	-	0/1	1	1	+5V±5%	+9V±5%

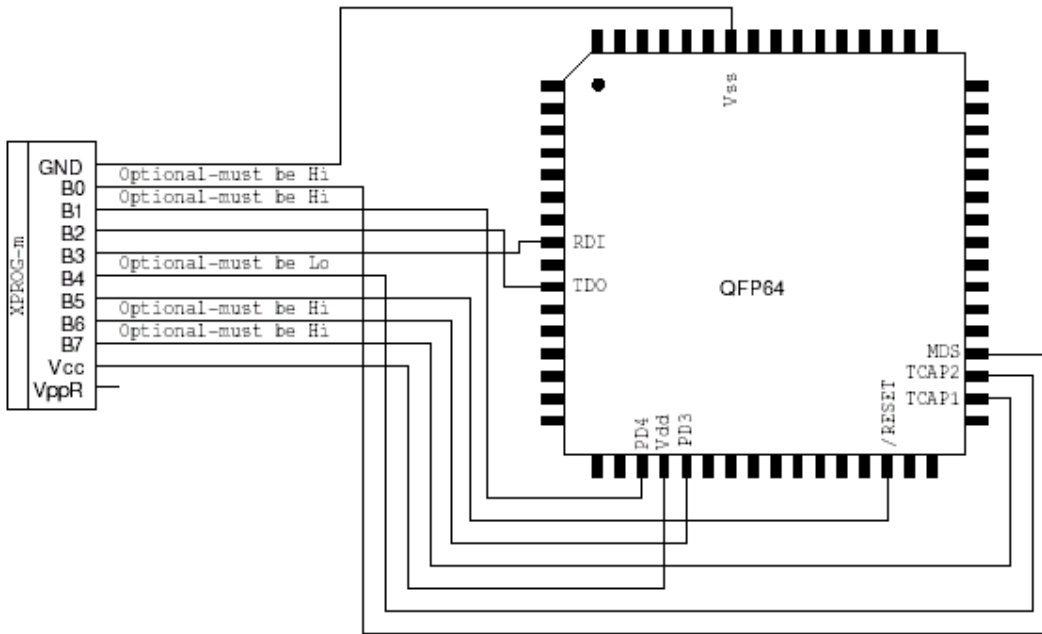
MC68HC705B16N/B32 (QFP64)



Mask sets:
Oscillator: 28, 29 pin **EEPROM:** 0x0101 – 0x01FF
Packages: QFP64 **CFG(EEPROM):** 0x0100

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	1	0/1	0/1	-	0/1	1	1	+5V±5%	+9V±5%

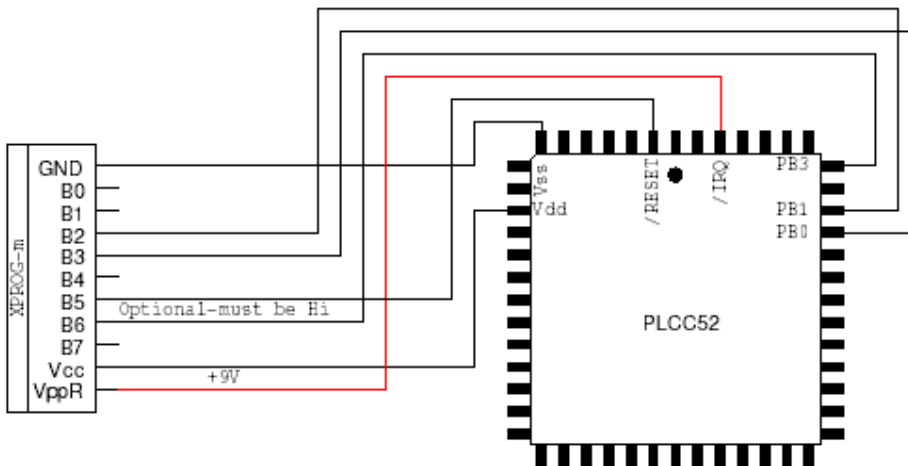
MC68HC(7)05X16/X32 (QFP64)



Mask sets: 0D53J, 0D69J, 1D69J, 1H52A, 2D59J
 Oscillator: 28, 29 pin EEPROM: 0x0101 – 0x01FF
 Packages: QFP64 CFG(EEPROM): 0x0100

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	1	1	0/1	0/1	0	0/1	1	1	+5V±5%	

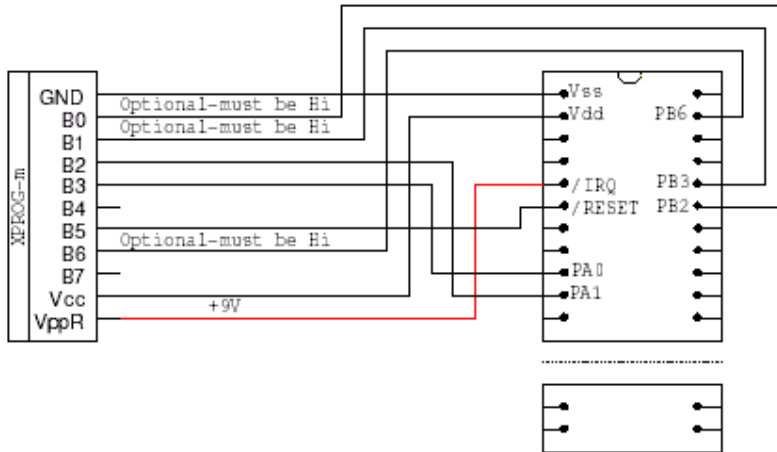
MC68HC(7)05H12



Mask sets: 0H57A
 Oscillator: 1, 52 pin Packages: PLCC52 EEPROM: 0x0400 – 0x04FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	-	0/1	1	-	+5V±5%	+9V±5%

MC68HC(7)05L28

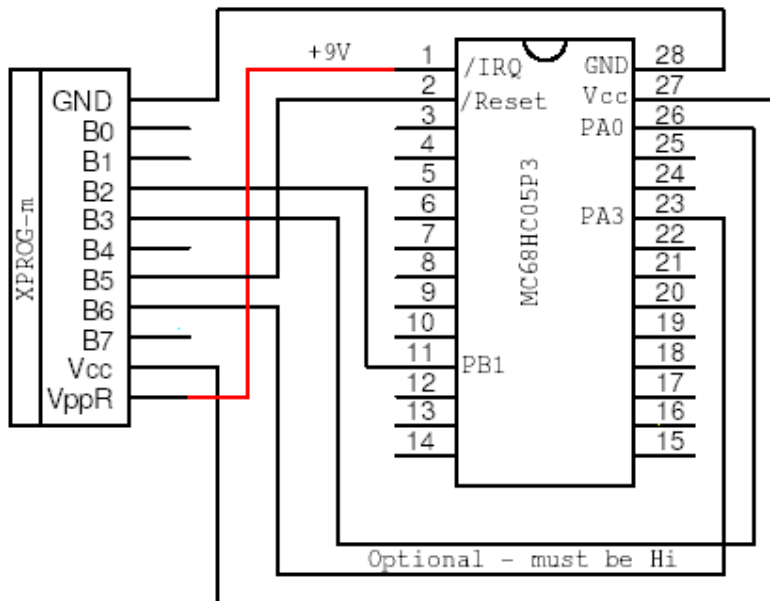


Mask sets:

Oscillator: 7, 8 pin Packages: SDIP56 EEPROM: 0x0300 – 0x03EF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	1	1	0/1	0/1	-	0/1	1	-	+5V±5%	+9V±5%

MC68HC05P3

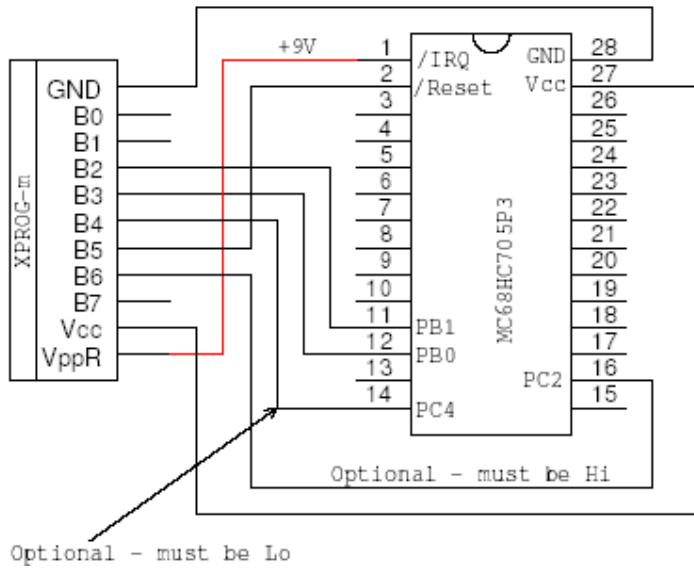


Mask sets: 1E25B

Oscillator: 3, 4 pin Packages: SOIC28, SDIP28 EEPROM: 0x0100 – 0x017F

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	-	0/1	1	-	+5V±5%	+9V±5%

MC68HC705P3

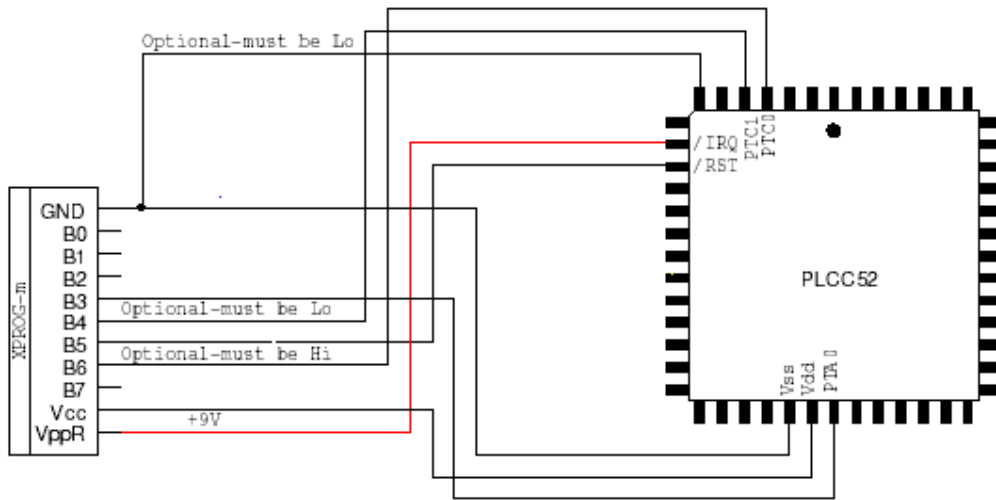


Mask sets: 1F75B
Oscillator: 3, 4 pin
Packages: SOIC28, SDIP28
EEPROM: 0x0100 – 0x017F

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	1	-	+5V±5%	+9V±5%

MC68HC08 family

MC68HC08AS32/AS32A (PLCC52)



Mask sets: 1J27F

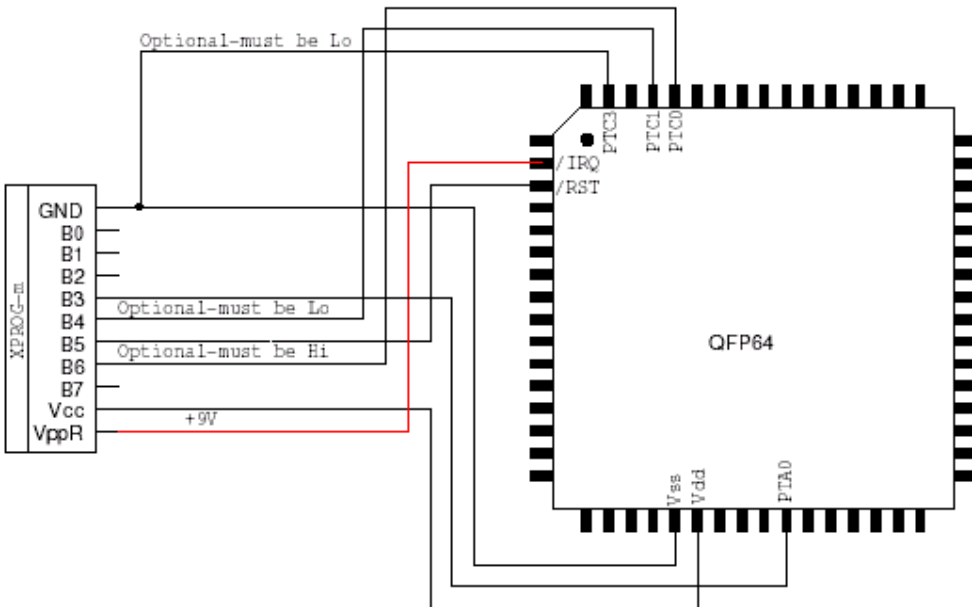
Oscillator: 2, 3 pin

Packages: PLCC52

EEPROM: 0x0800 – 0x09FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	-	0/1	0	0/1	1	-	+5V±5%	+9V±5%

MC68HC08AS32/AS32A (QFP64)



Mask sets: 1J27F

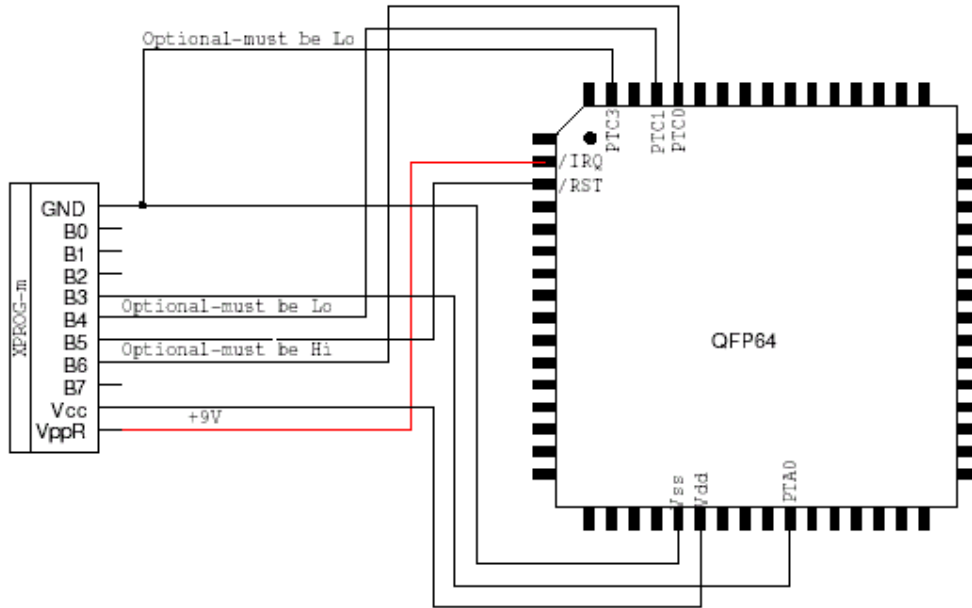
Oscillator: 58, 59 pin

Packages: QFP64

EEPROM: 0x0800 – 0x09FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	-	0/1	0	0/1	1	-	+5V±5%	+9V±5%

MC68HC08AZ32A



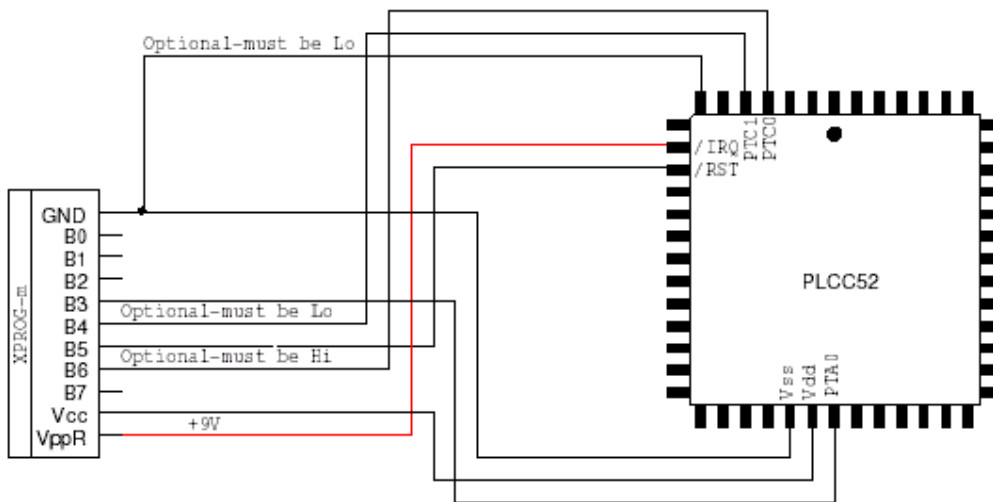
Mask sets: 0J66D

Oscillator: 58, 59 pin

Packages: QFP64

EEPROM: 0x0800 – 0x09FF

MC68HC08AS60/AS60A(PLCC52)



Mask sets: 0H62A, 8H62A

Oscillator: 2, 3 pin

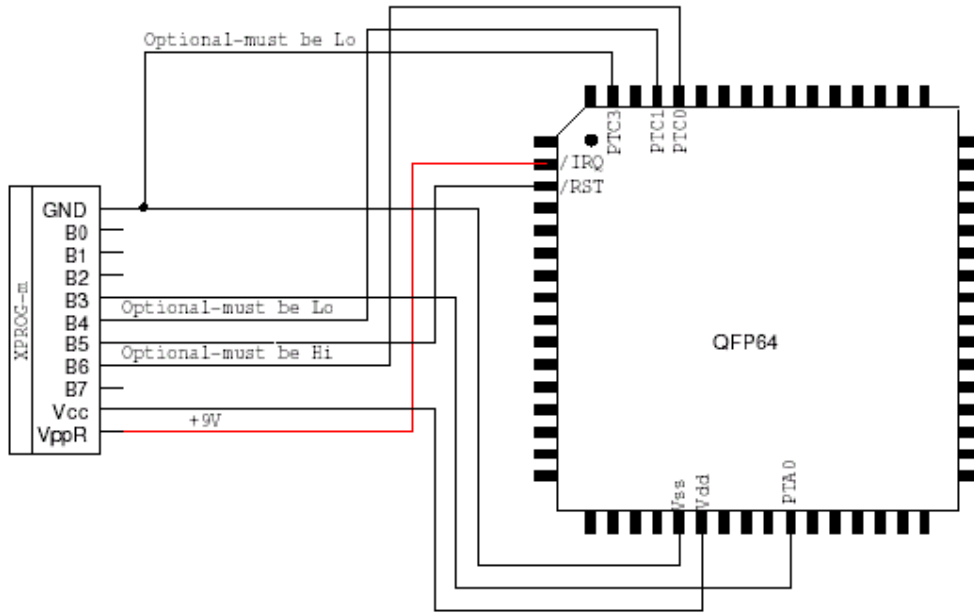
Packages: PLCC52

EEPROM1: 0x0800 – 0x09FF

EEPROM2: 0x0600 – 0x07FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	-	0/1	0	0/1	1	-	+5V±5%	+9V±5%

MC68HC08AS60/AS60A(QFP64)



Mask sets: 0H62A, 8H62A

Oscillator: 58, 59 pin

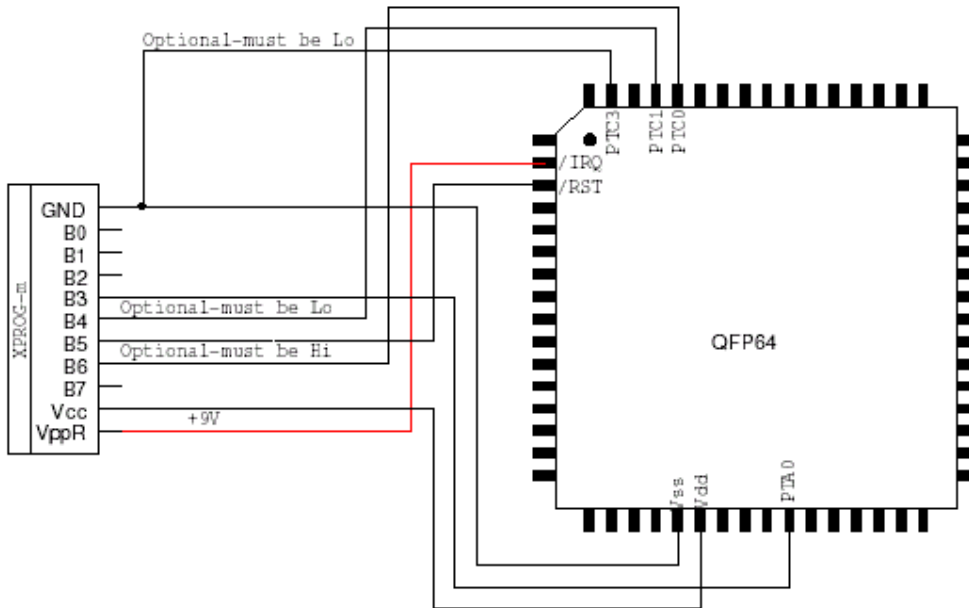
EEPROM1: 0x0800 – 0x09FF

Packages: QFP64

EEPROM2: 0x0600 – 0x07FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	-	0/1	0	0/1	1	-	+5V±5%	+9V±5%

MC68HC08AZ60A(QFP64)



Mask sets:

Oscillator: 58, 59 pin

EEPROM1: 0x0800 – 0x09FF

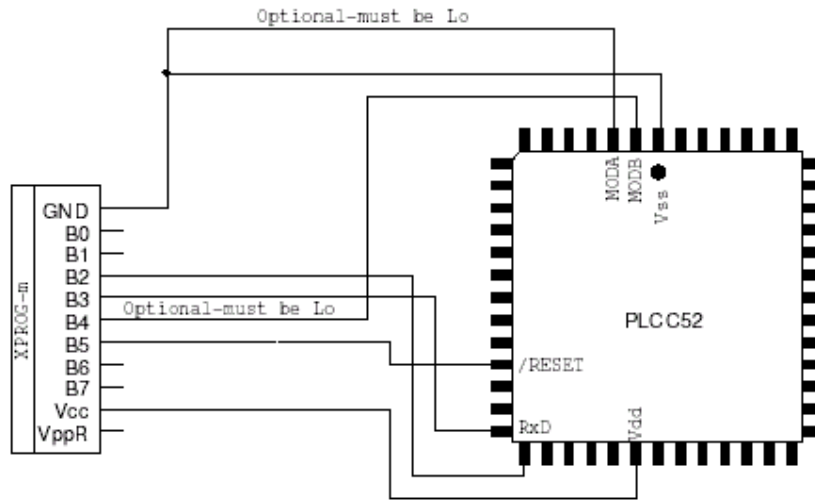
Packages: QFP64

EEPROM2: 0x0600 – 0x07FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	-	0/1	0	0/1	1	-	+5V±5%	+9V±5%

MC68HC11 family

MC68HC11A8/E1/E9/E20(PLCC52)



Mask sets:

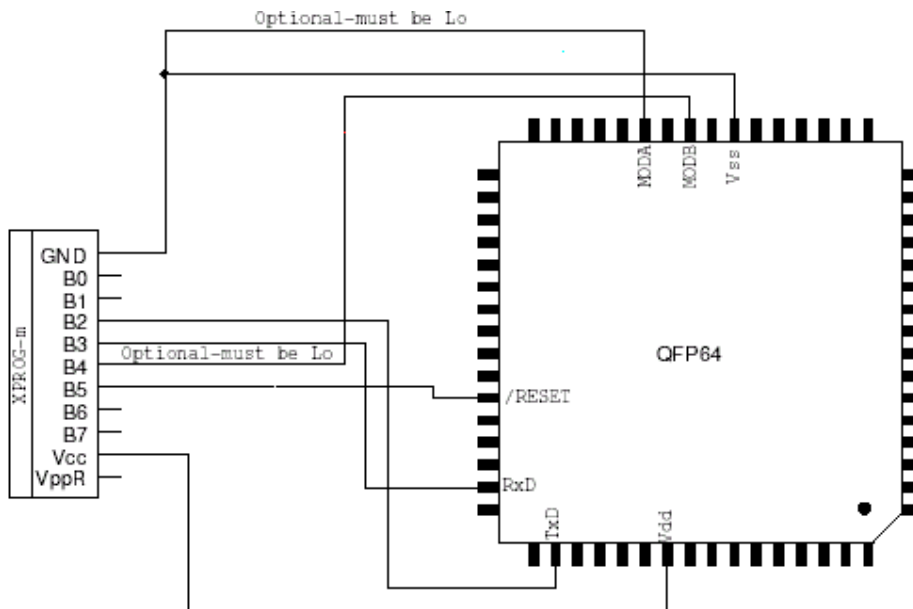
Oscillator: 7, 8 pin

Packages: PLCC52

EEPROM: 0xB600 – 0xB7FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11A8/E1/E9/E20(QFP64)



Mask sets:

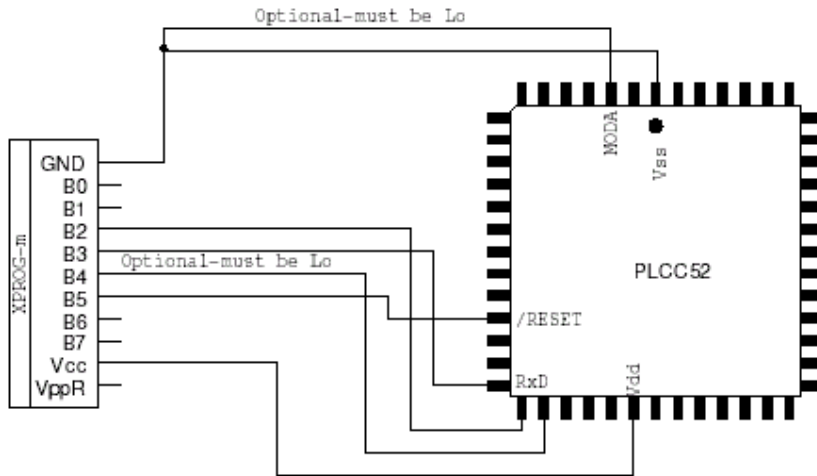
Oscillator: 31, 33 pin

Packages: QFP64

EEPROM: 0xB600 – 0xB7FF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11EA9

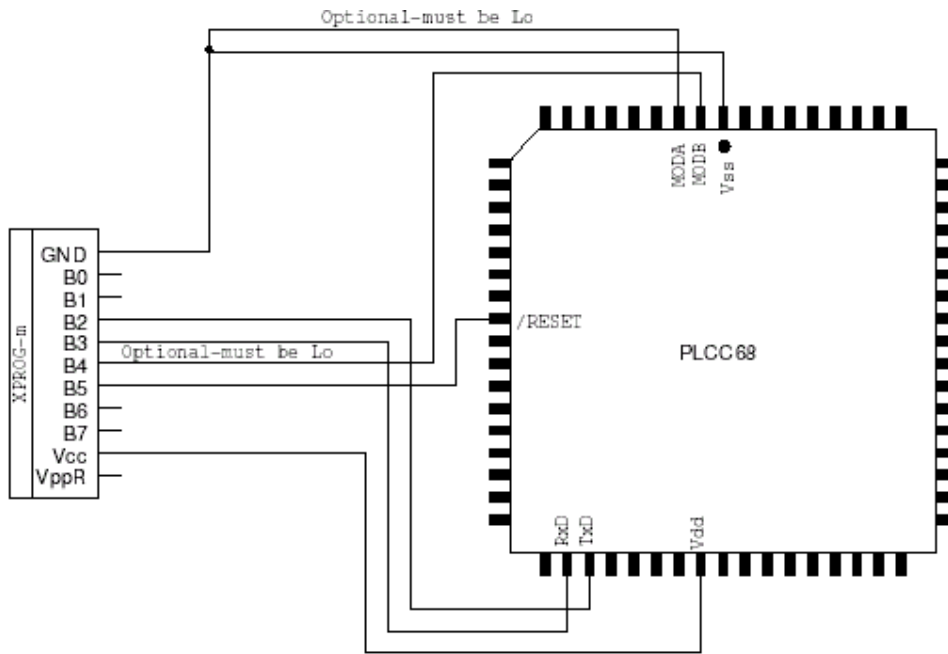


Mask sets: 0D46J, 1D47J, 2D47J

Oscillator: 7, 8 pin Packages: PLCC52 EEPROM: 0xB600–0xB7FF MODB: 22 pin(B4)

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11F1(PLCC68)

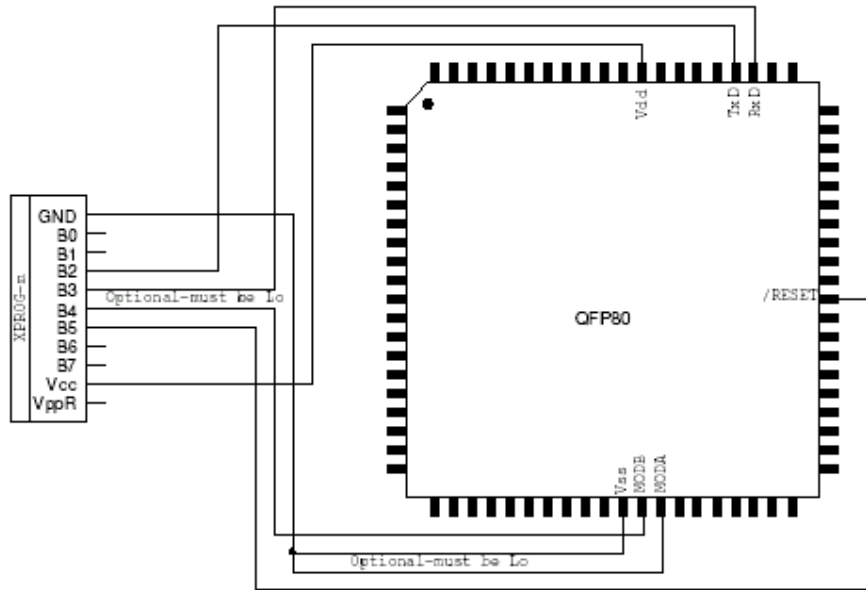


Mask sets: 2F37E, E87J

Oscillator: 6, 7 pin Packages: PLCC68 EEPROM: 0xFE00 – 0xFFFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11F1(QFP80)



Mask sets: 2F37E

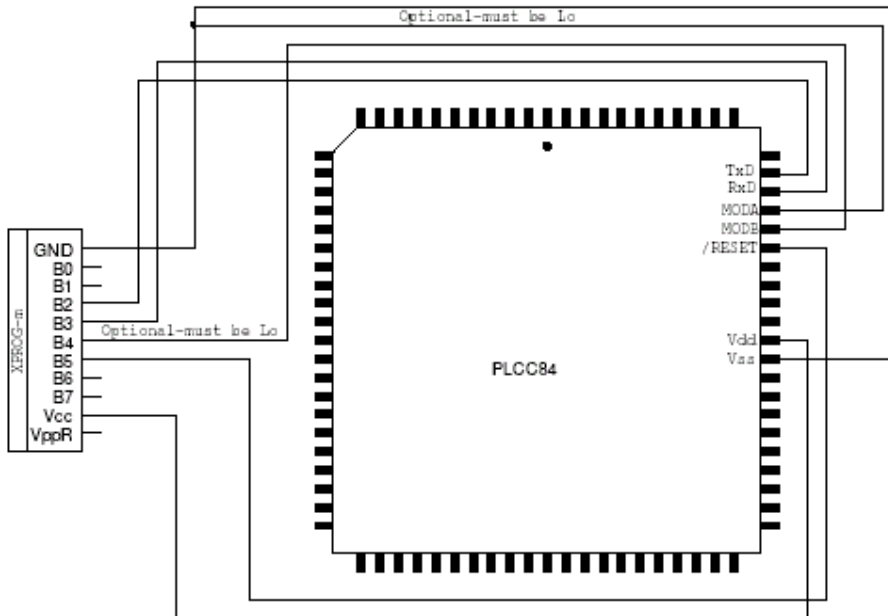
Oscillator: 36, 37 pin

Packages: QFP80

EEPROM: 0xFE00 – 0xFFFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11K4(PLCC84)



Mask sets: 1E62H

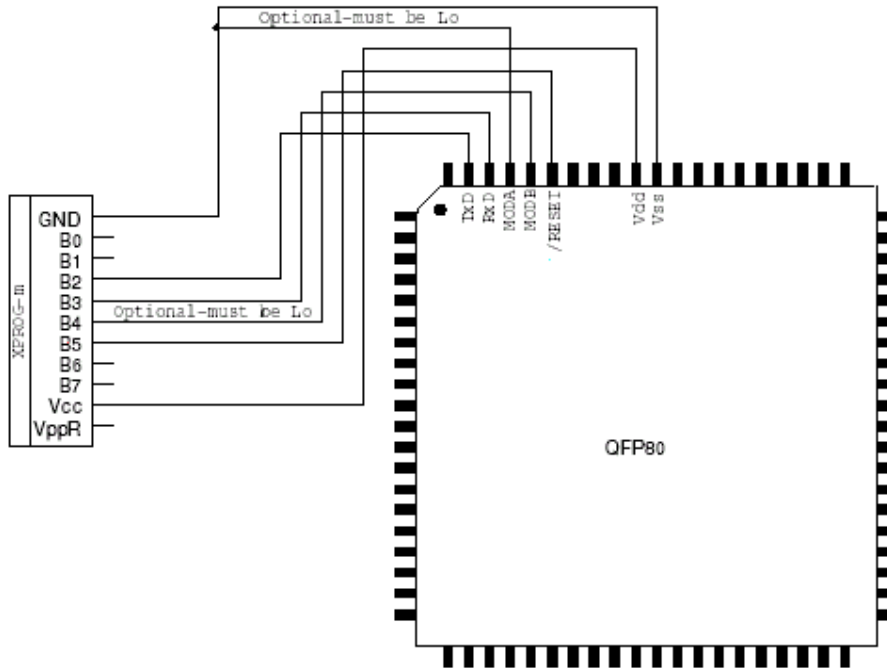
Oscillator: 67, 68 pin

Packages: PLCC84

EEPROM: 0x0D80 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11K4(QFP80)



Mask sets: 1E62H

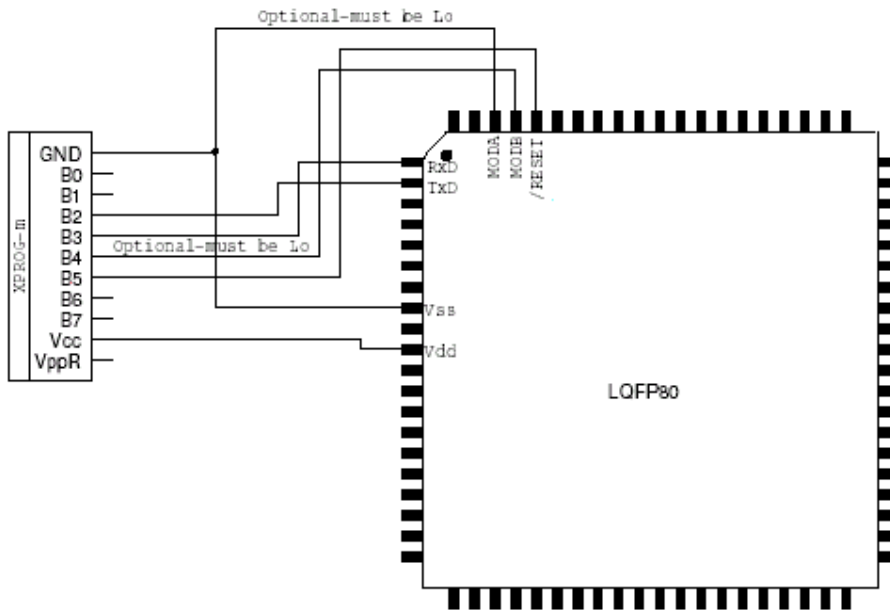
Oscillator: 73, 74 pin

Packages: QFP80

EEPROM: 0x0D80 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11KS2(LQFP80)



Mask sets: 1E59B, 2E59B

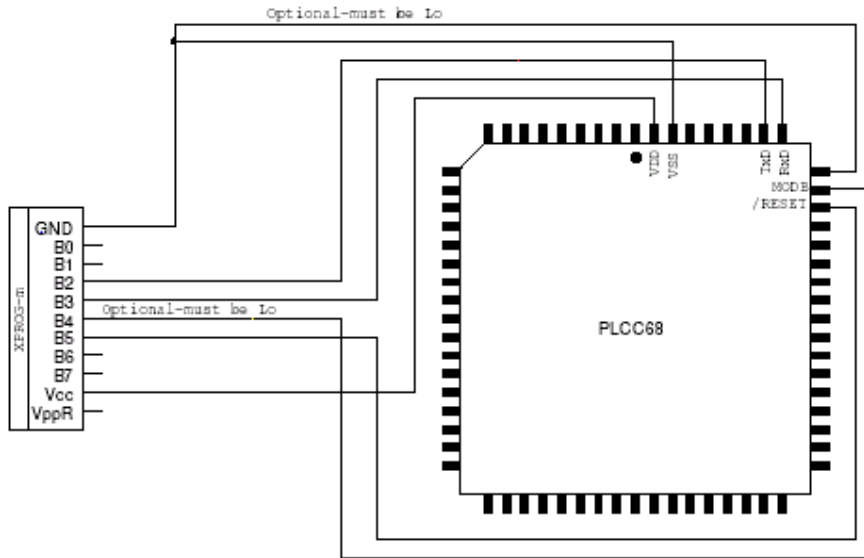
Oscillator: 74, 75 pin

Packages: LQFP80

EEPROM: 0x0D80 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11KA4(PLCC68)



Mask sets: 0E57S

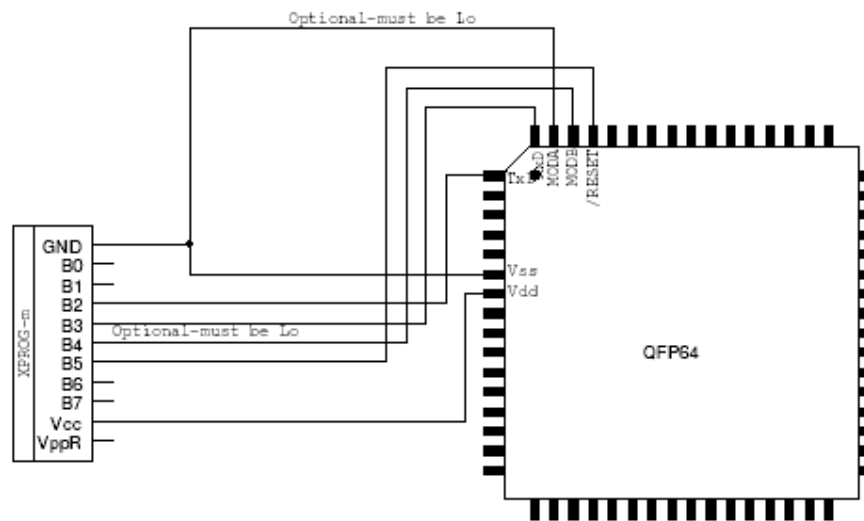
Oscillator: 56, 57 pin

Packages: PLCC68

EEPROM: 0x0D80 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11KA4(QFP64)



Mask sets: 0E57S

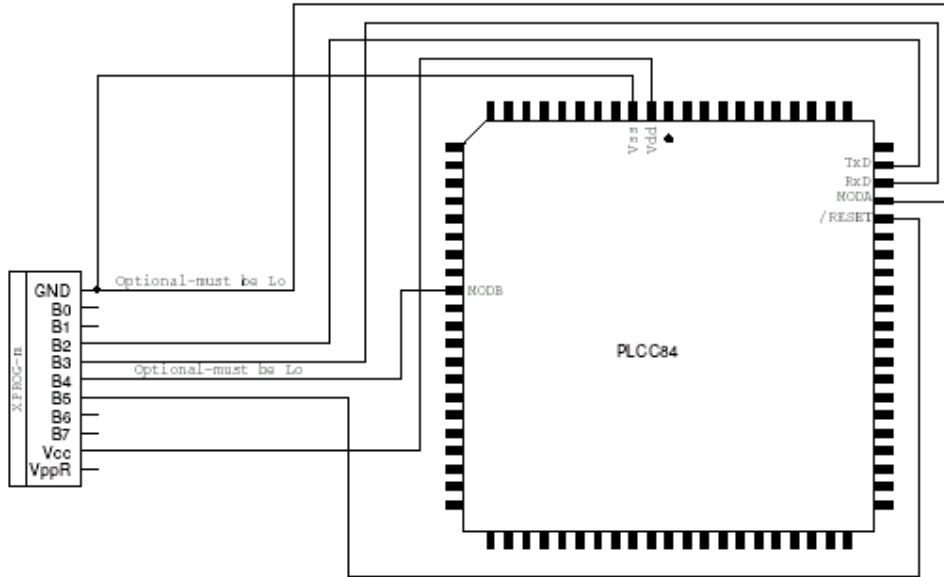
Oscillator: 59, 60 pin

Packages: QFP64

EEPROM: 0x0D80 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11PH8



Mask sets: 3D64J, 0H30R

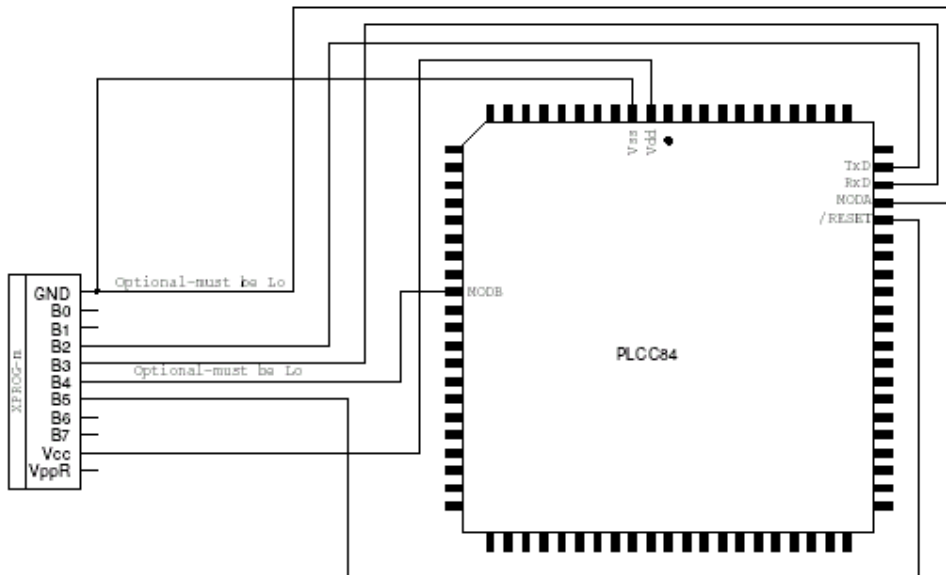
Oscillator: 66, 67 pin

Packages: PLCC84

EEPROM: 0x0D00 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	

MC68HC11P2



Mask sets: 3E74J, 1E53M, 0G10V

Oscillator: 66, 67 pin

Packages: PLCC84

EEPROM: 0x0D80 – 0x0FFF

XPROG pin	B0	B1	B2	B3	B4	B5	B6	B7	Vcc	VppR
Signal level	-	-	0/1	0/1	0	0/1	-	-	+5V±5%	