
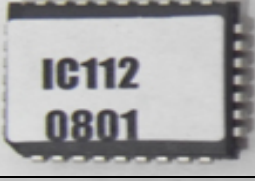







Tacho Universal Hand-Held Repair Update Manual

1 Package contains:

No.	Name	Quantity	Image	Remark
1	IC111	1PC		
2	IC112	1PC		
3	AT24C02	1PC		
4	PIC12F629	1PC		
5	74HC541	1PC		
6	IC111&IC112 IC IC111&IC112 IC removing tool	1PC		
7	Crystal oscillator	1PC		

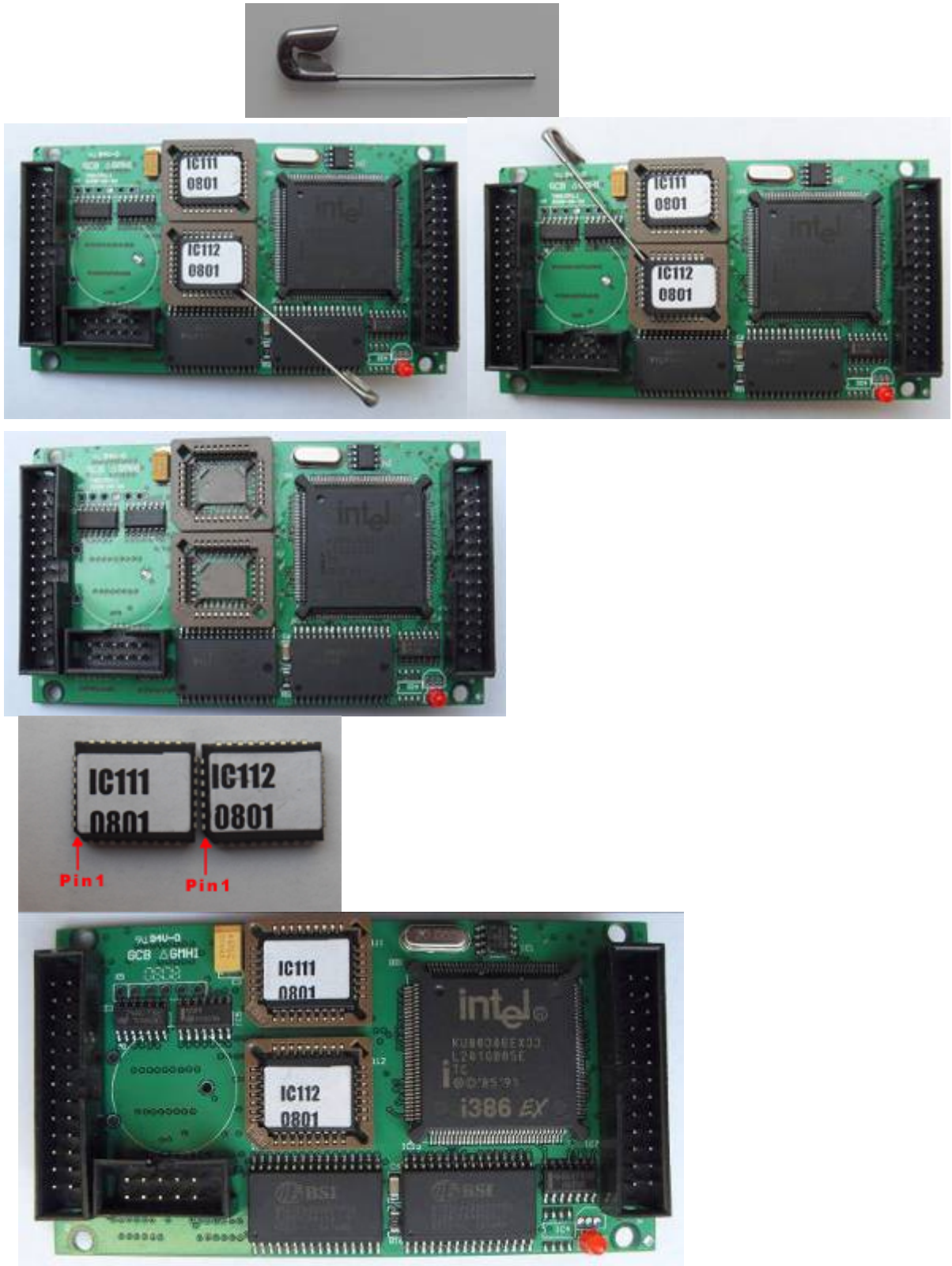
2 Repair TACHO Universal Hand-Held Device

2.1 Trouble Shooting

Trouble	Solution	Remark
Screen display: Diga updaten	Replace IC111 and IC112	
Screen display: RESETE	Replace IC111 and IC112	
No display after powered on	Replace IC111 and IC112	
No vehicle list, screen display black strip	Replace IC111 and IC112	
Frequently Halting	Replace IC111 and IC112	
Screen display both the following: “update handheld” “???SYNC???”	Replace AT24C02 first. If the trouble cannot be solved, then replace crystal scillator	
The machine cannot read EEPROM	Replace 74HC541	

2.2 Solution

2.2.1 Replace IC111 and IC112 as shown in the figure.



2.2.2 Replace AT24C02 as shown in the figure.

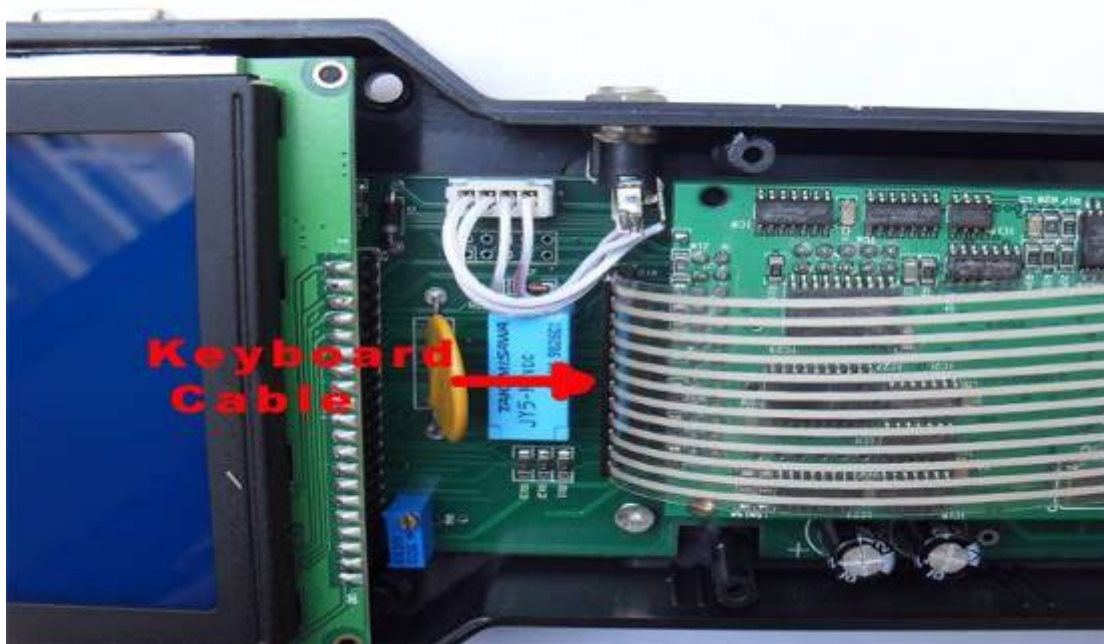
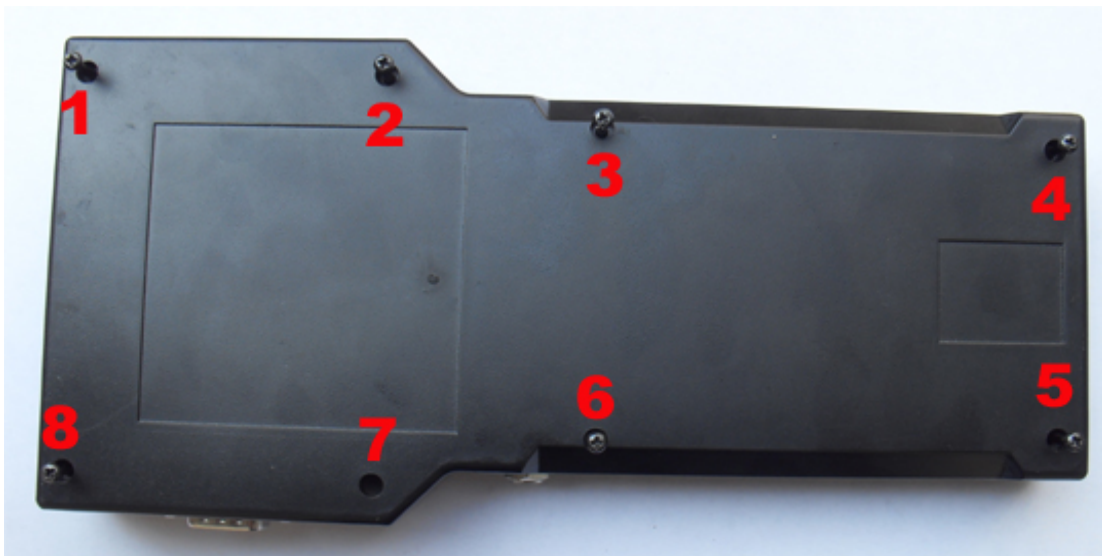


2.2.3 Replace 74HC541

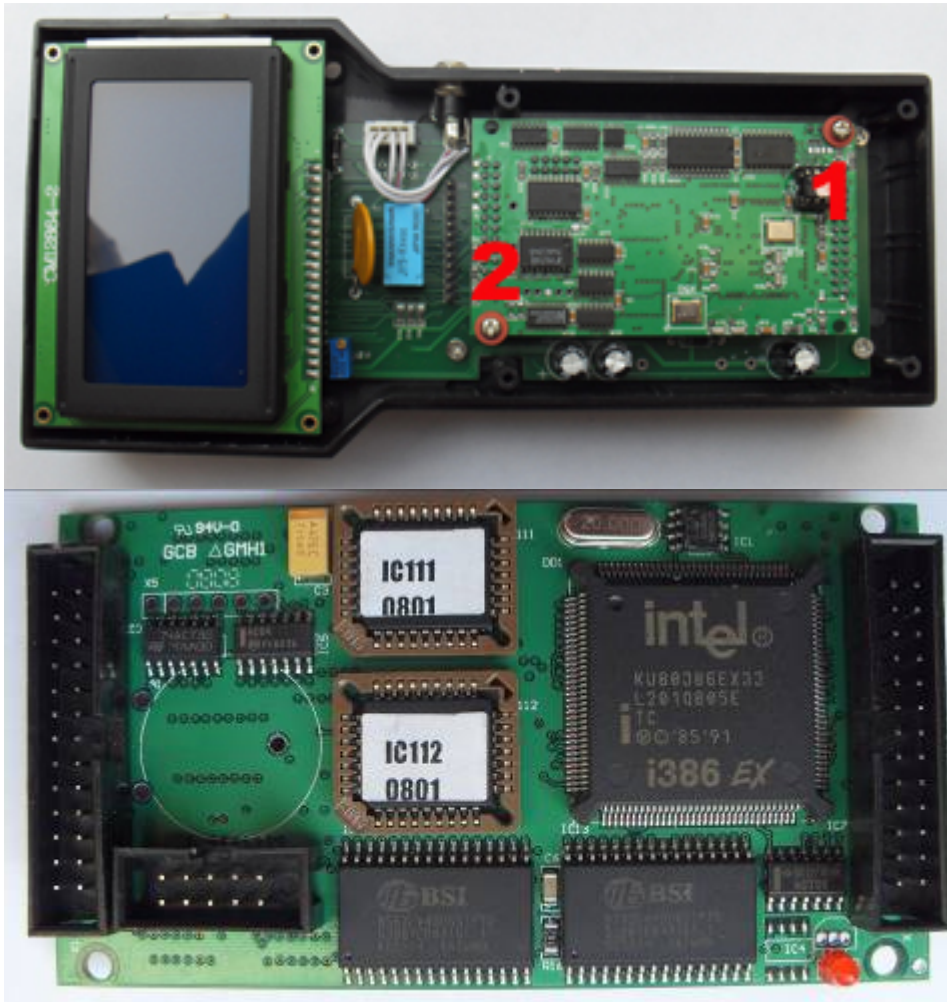


3 Update TACHO Universal Hand-Held Device

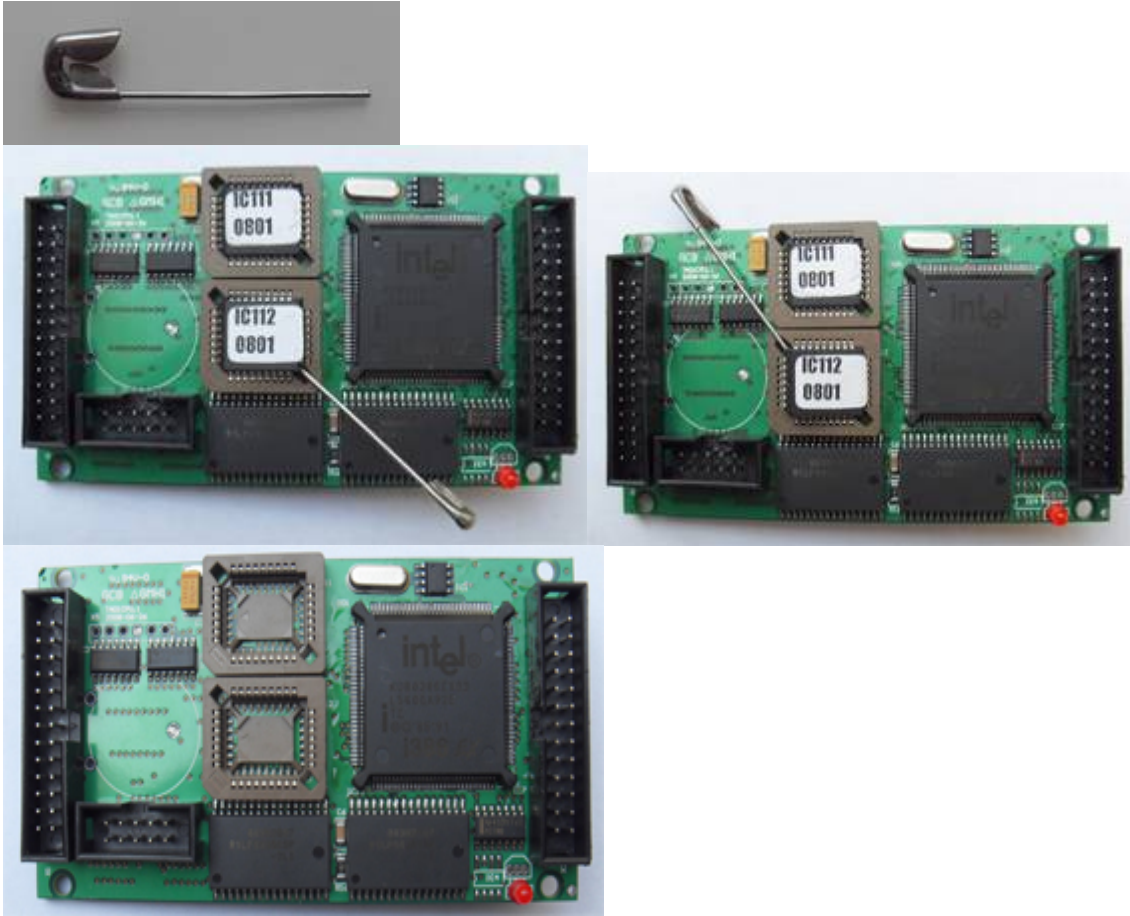
3.1 Remove the 8 screws, open the up cover, unplug the keyboard cable connector, and then remove the up cover as shown in the figure.



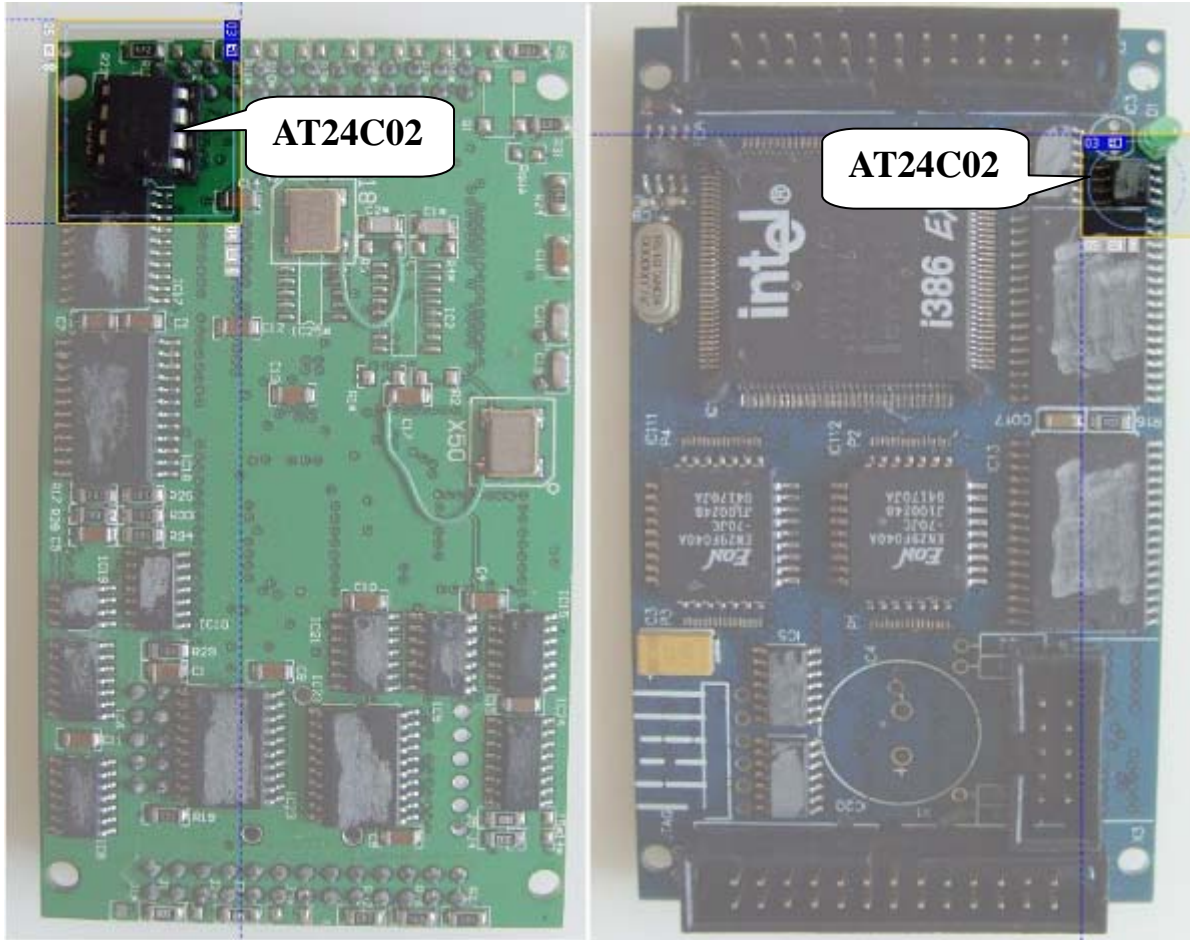
3.2 Remove the CPU BOARD as shown in the figure.



3.3 Remove IC111 and IC112 as shown in the figure.



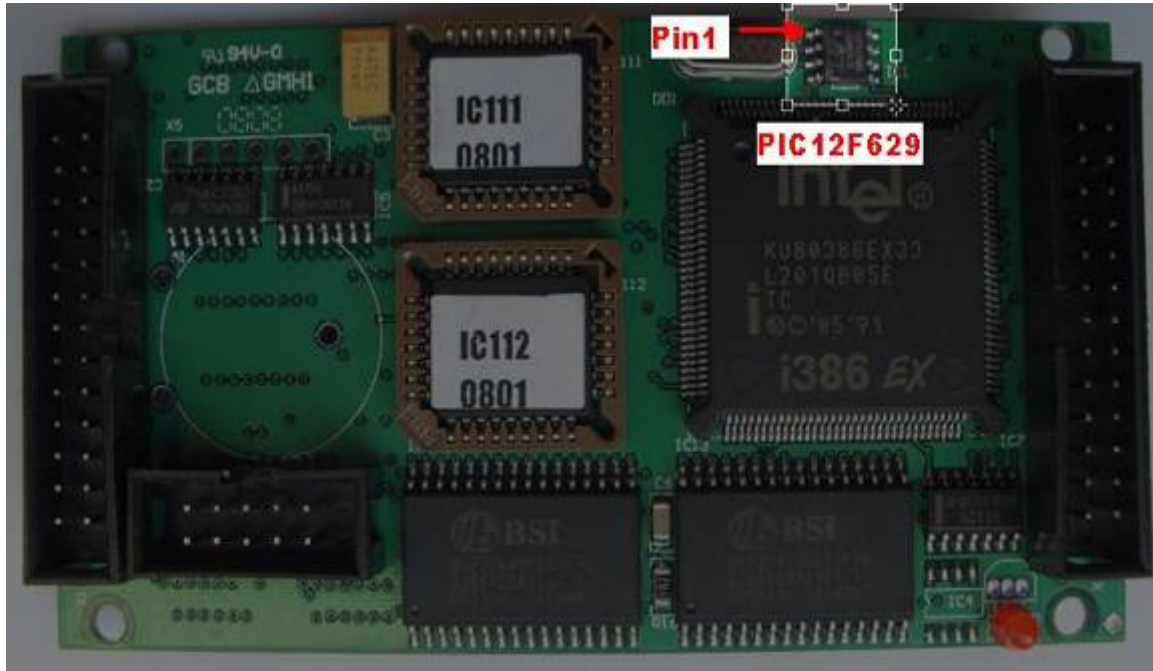
3.4 Remove AT24C02 as shown in the figure.



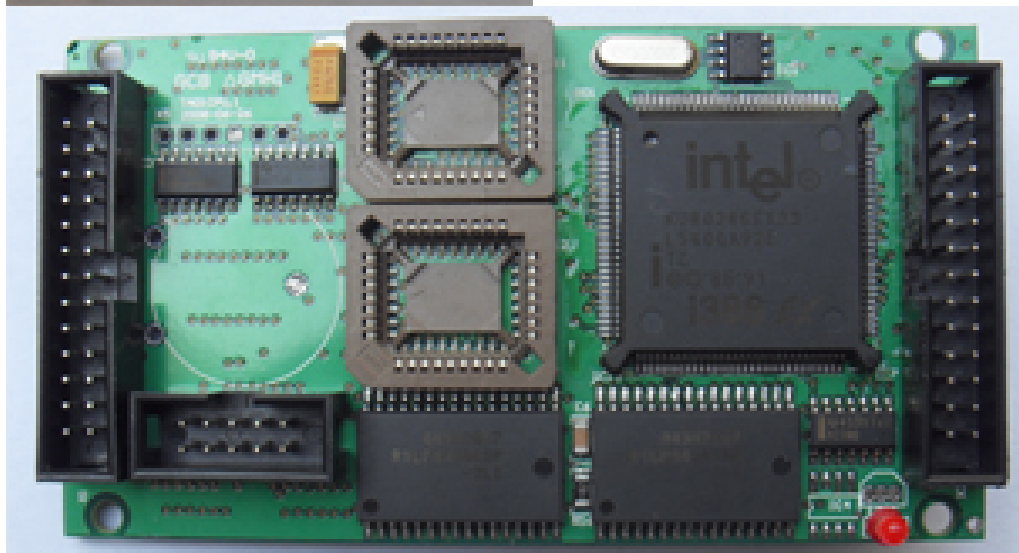
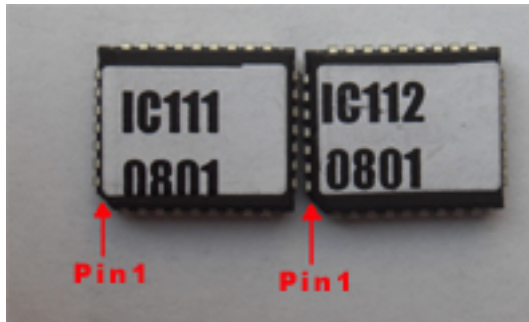
3.5 Remove Crystal oscillators as shown in the figure.



3.6 Remove PIC12F629 as shown in the figure.



3.7 Install IC111 and IC112. Make sure the install direction is correct. See the figure.



3.8 Install AT24C02. Make sure the install direction is correct.

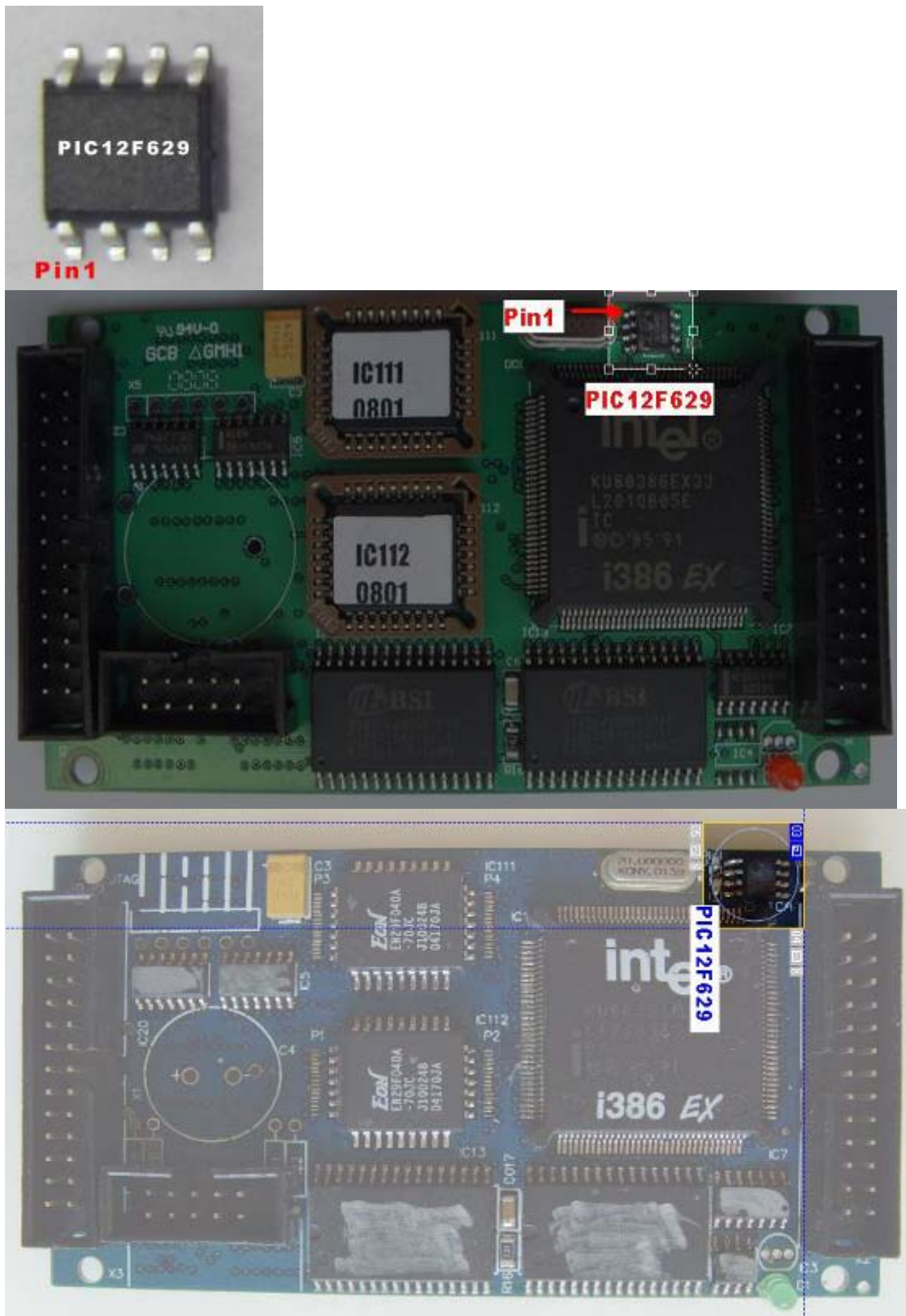
See the figure.



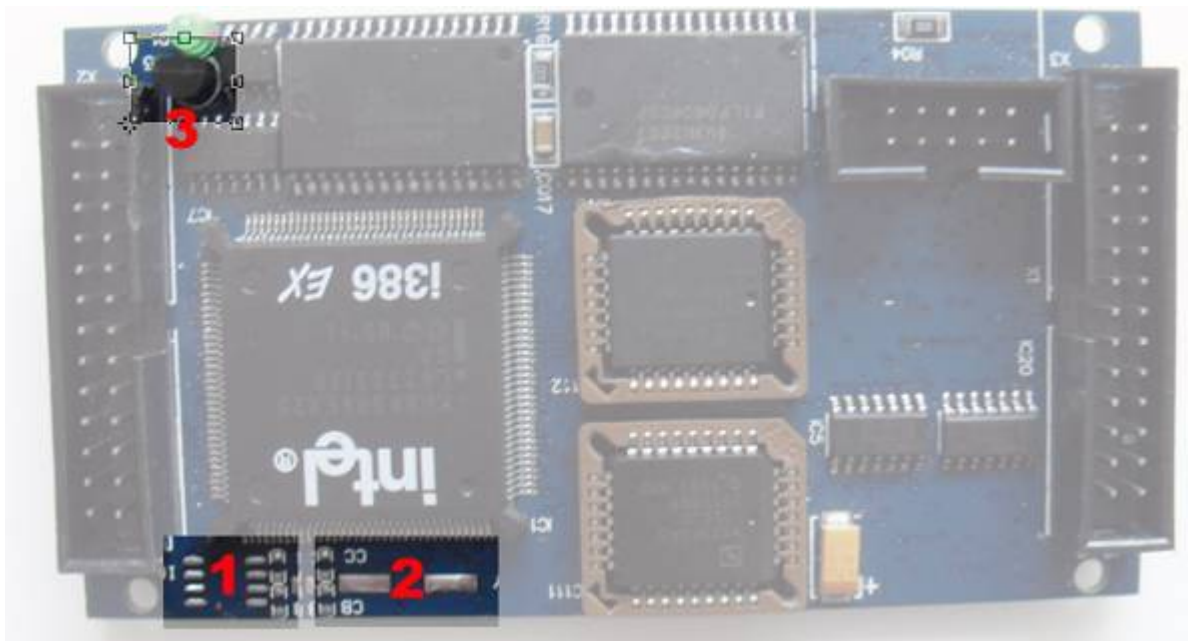
3.9 Install Crystal oscillator. See the figure.



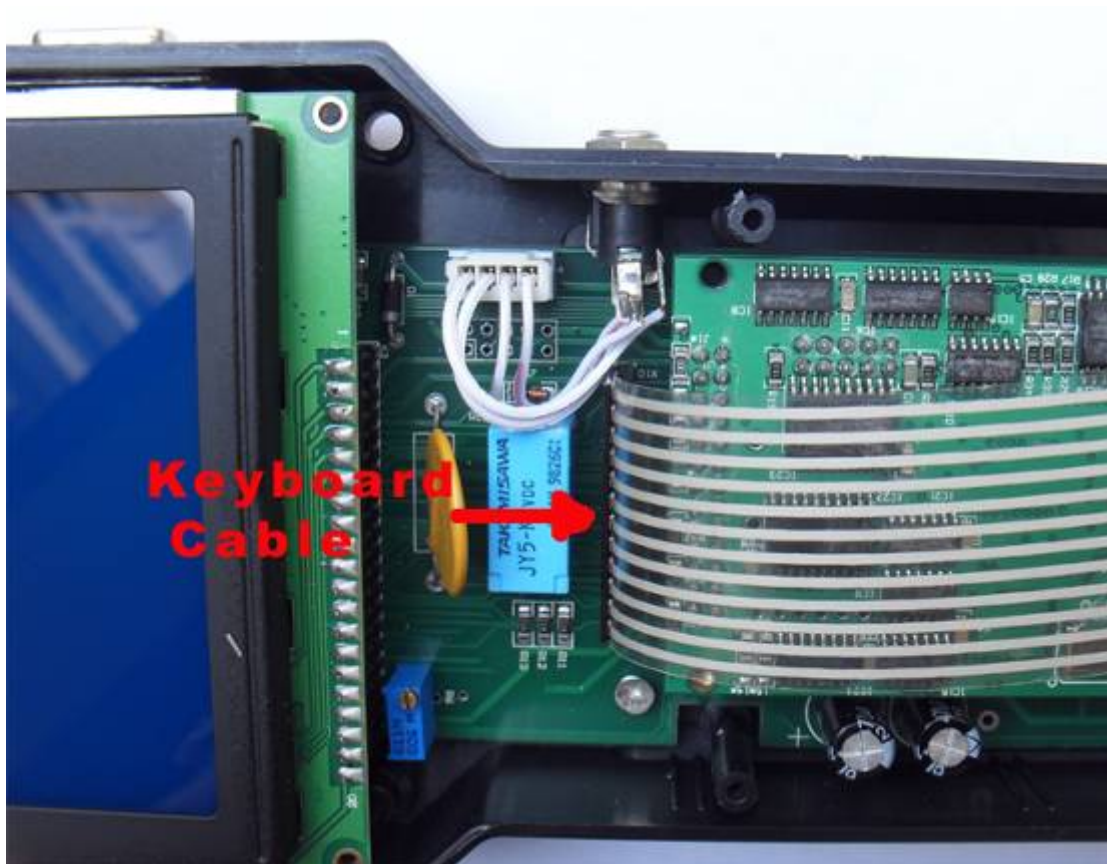
3.10 Install PIC12F629. See the figure.



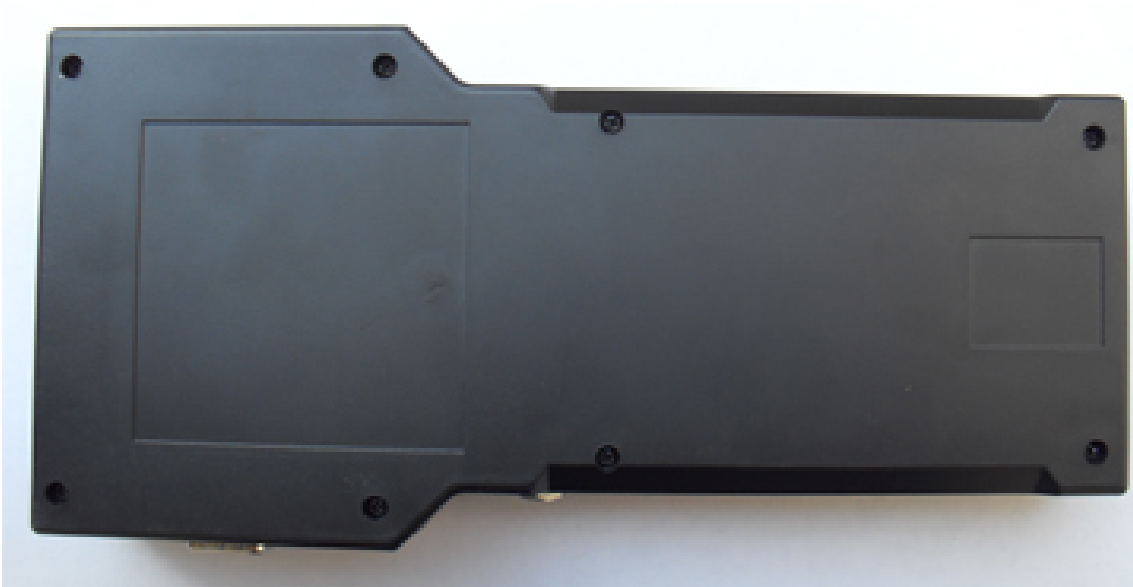
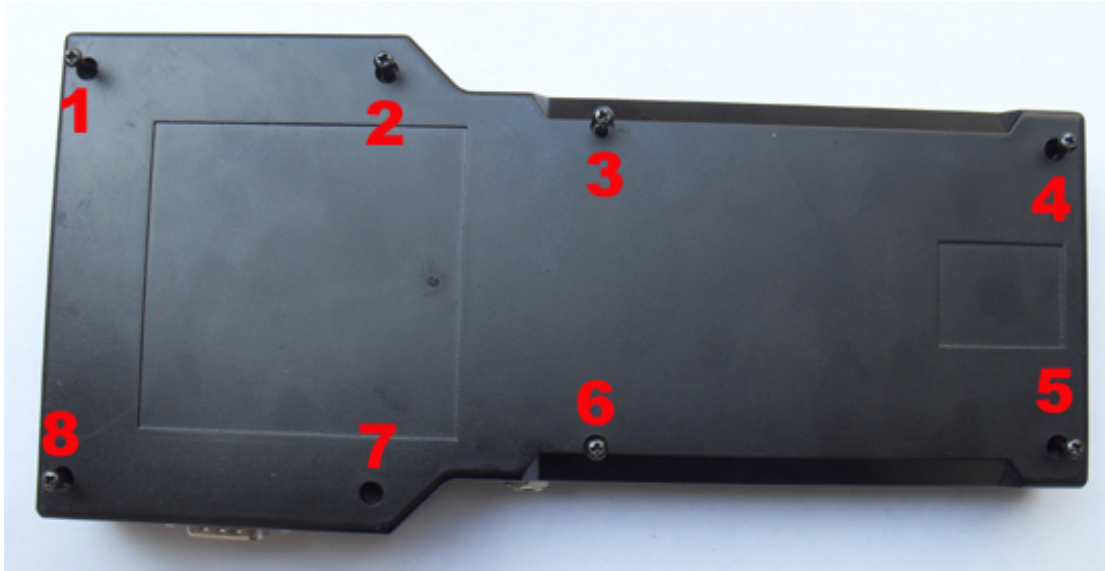
3.11 On your board, if there are not components in position 1 and 2, please remove component in position 3. and then fix PIC12F629 onto the position on 1. fix OSC on the proper position in 2.



3.12 Install CPU BOARD. Make sure install it in correct direction. See the figure.

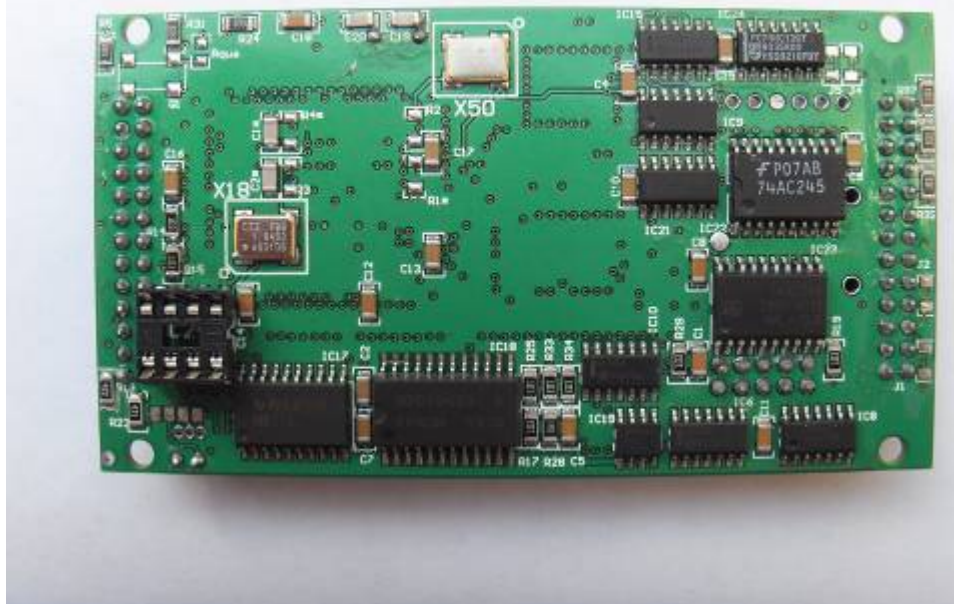


3.13 Install the up cover and then the 8 screws. See the figure.



4 Update methods:

Step 1. Remove the CPU BOARD from TACHOPRO i.e. the principal machine. See picture 1.



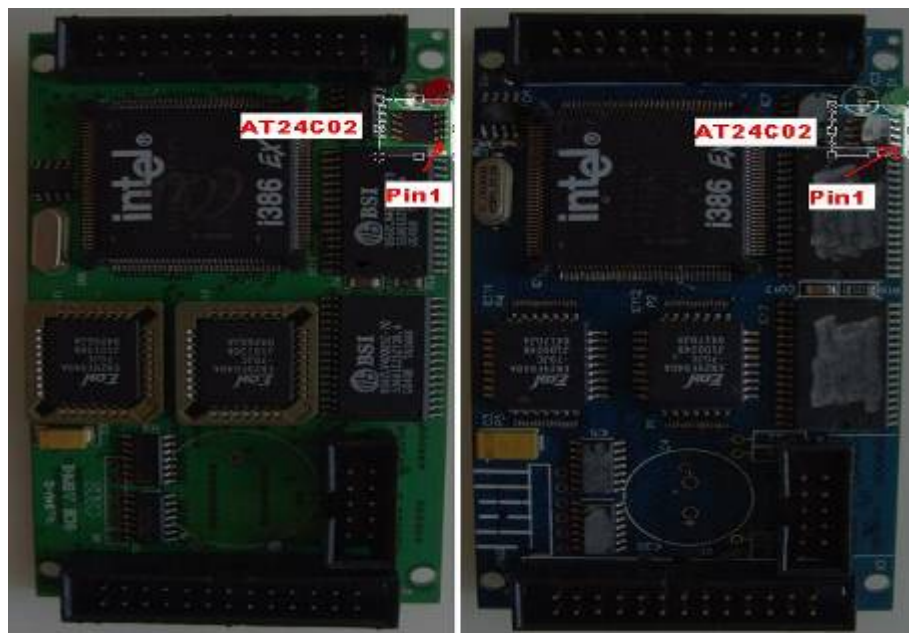
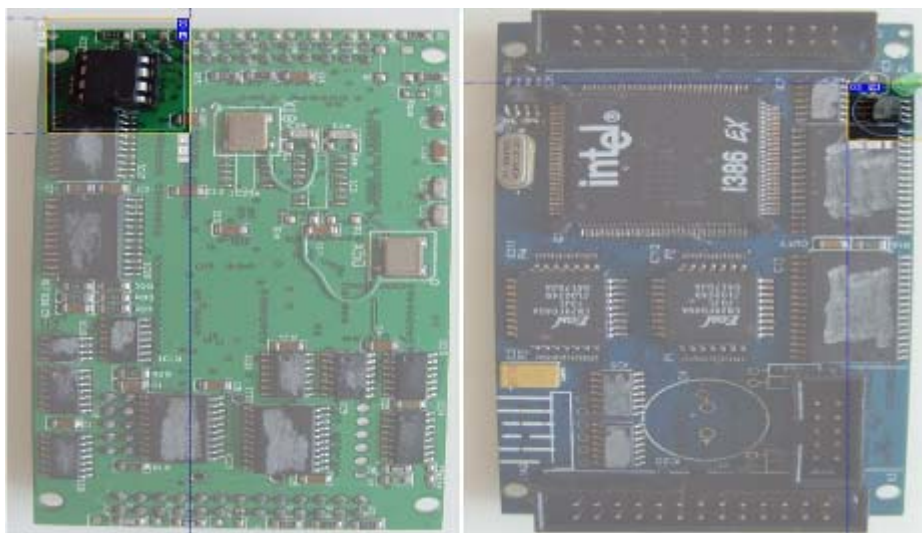
Picture 1

Step 2. Find the location of IC111& IC112 and replace the previous IC on CPU BOARD with the IC111&IC112 of Update Kit. Make sure the IC is properly located with correct direction. See picture 2



Picture 2

Step 3. Find AT24C02 on CPU BOARD. Remove the previous IC by using electric iron and then place AT24C02 on the corresponding location to guarantee the direction of IC. See picture 3A, 3B

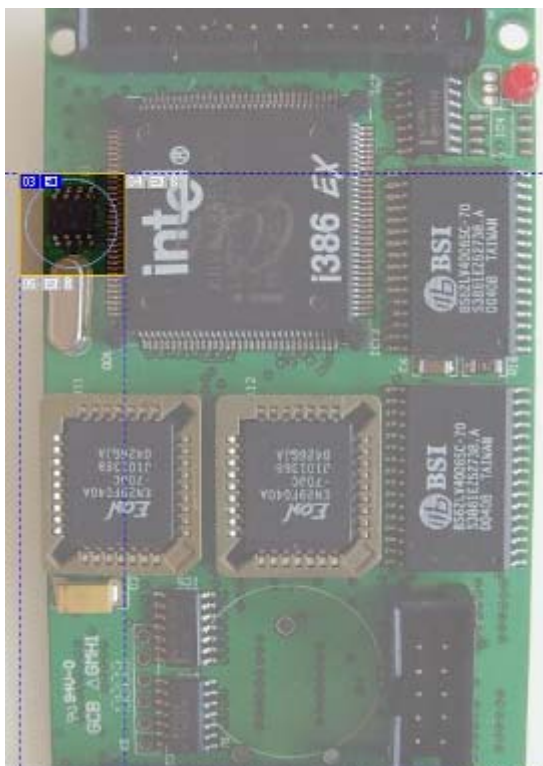


Picture 3A

picture 3B

Note: pay attention to CPU BOARD in picture 3A. First of all, the IC socket should be taken out from AT24C02 and then weld AT20C02 to the specified position in picture 3B.

Step 4. Find PIC12F629 on CPU BOARD. Remove the previous IC by using electric iron and then place PIC12F629 on the corresponding location to guarantee the direction of IC. See picture 4A, 4B.



Picture 4A



picture 4B

Step 5. The update will be finished by returning CPUBOARD to the principal machine. Update is complete.