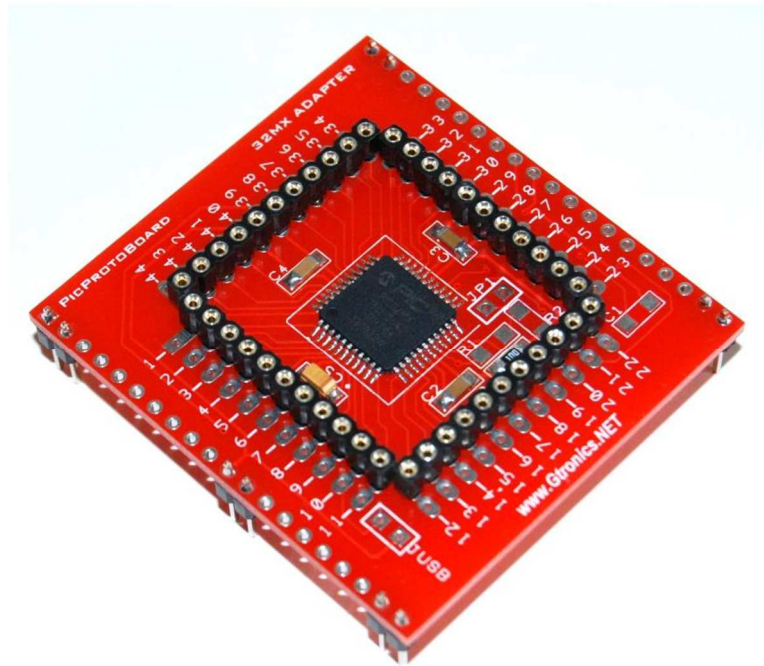


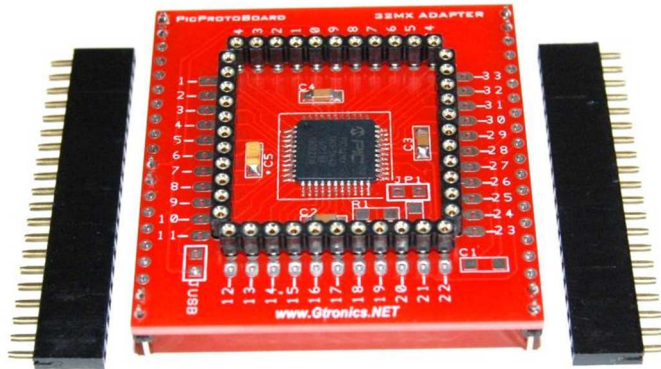
PICPROTOBOARD 32MX ADAPTER USER MANUAL



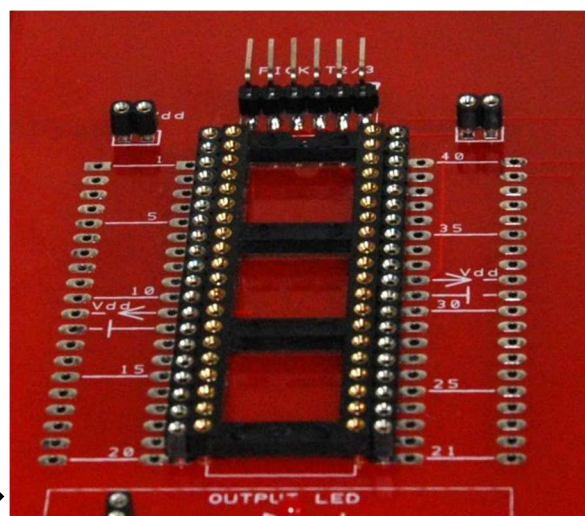
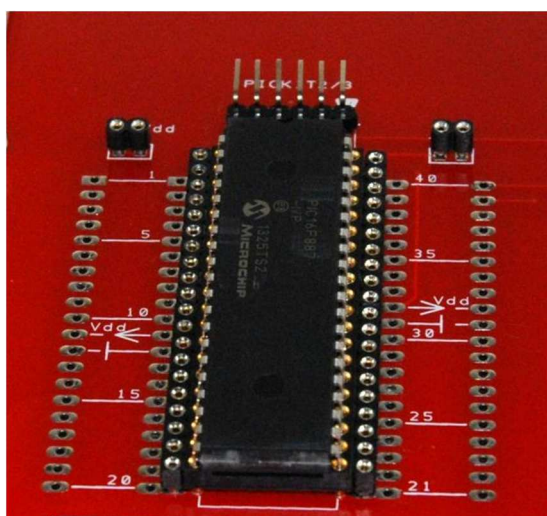
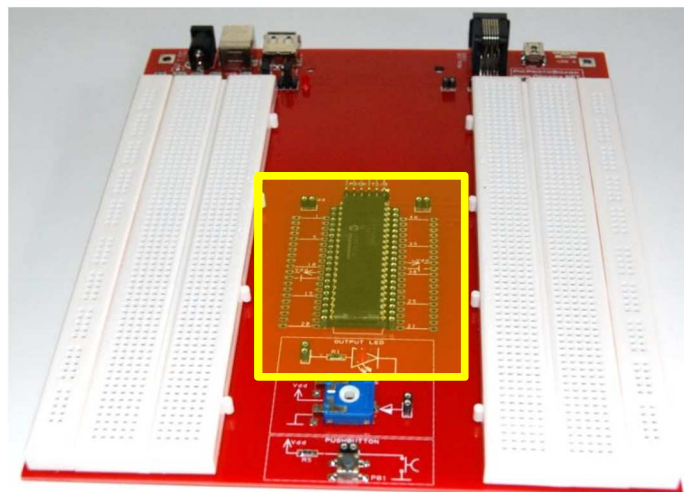
The **32MX ADAPTER** turns your **PICPROTOBOARD** into a 32bit testing environment. It is compatible with any PIC32MX 44 pin TQFP with pinout compatible with the PIC32MX130F064D. It is provided with or without a pre-mounted PIC32MX130F064D. In case of the one without the pre-mounted PIC32MX130F064D, you can mount the PIC32MX that you prefer, according to the pinout compatibility (shown at the end of this document). The internal oscillator of the PIC32MX family, avoid the need of using an external oscillator (that can be used anyway if you need it for your purposes).

Installing the 32MX ADAPTER on the PICPROTOBOARD

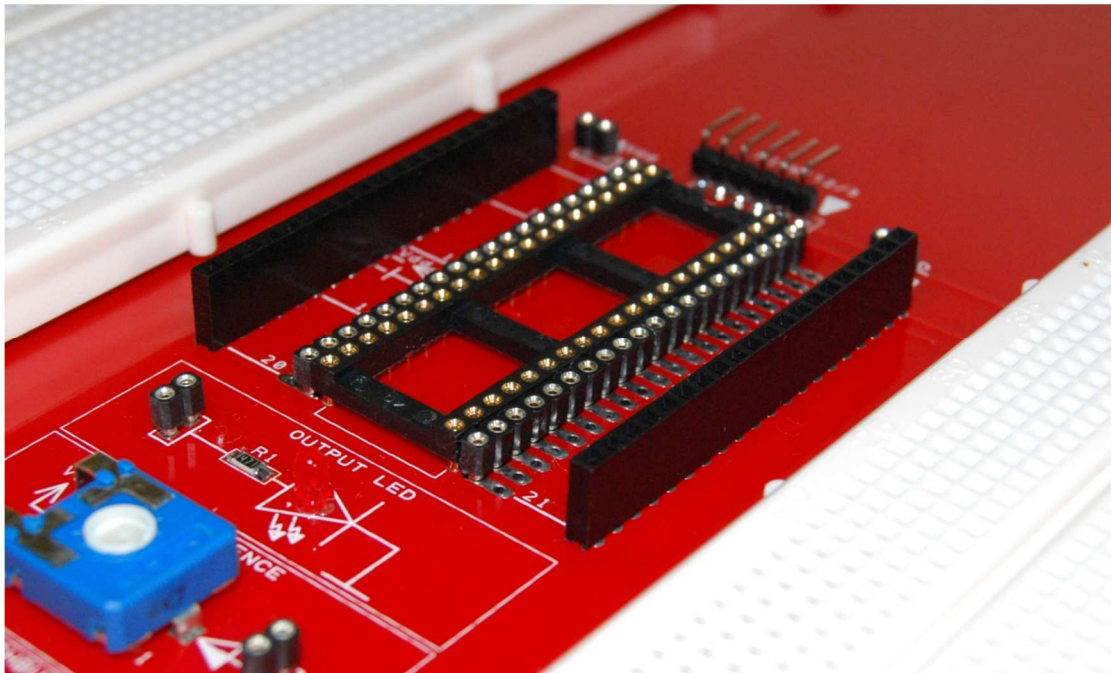
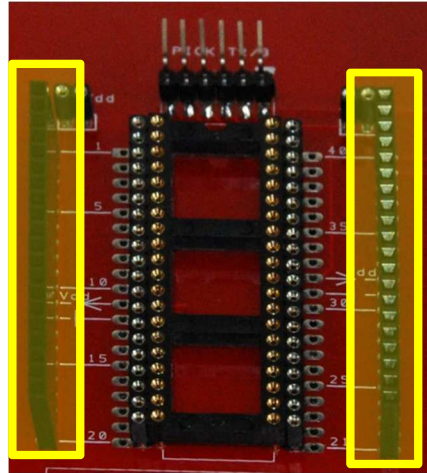
The **PIC32MX ADAPTER** is provided with two 20 pins female strips.



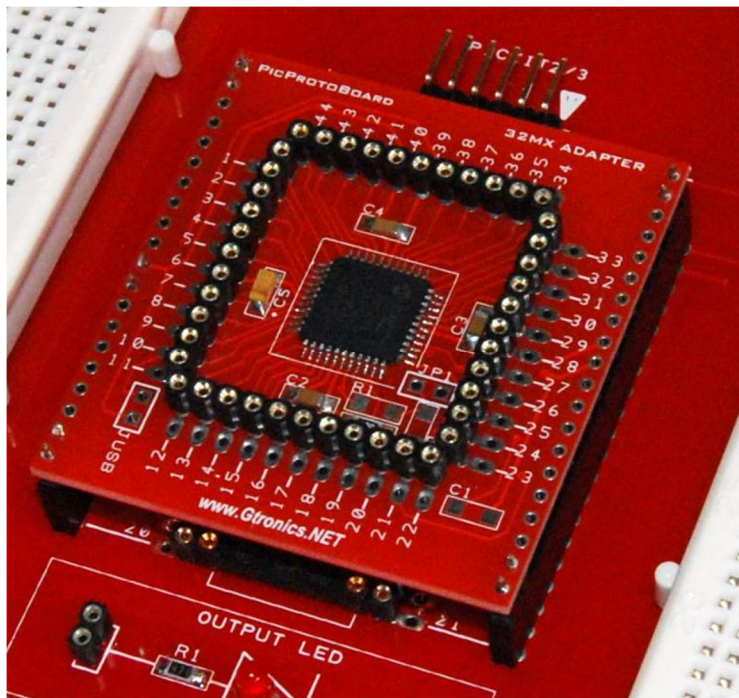
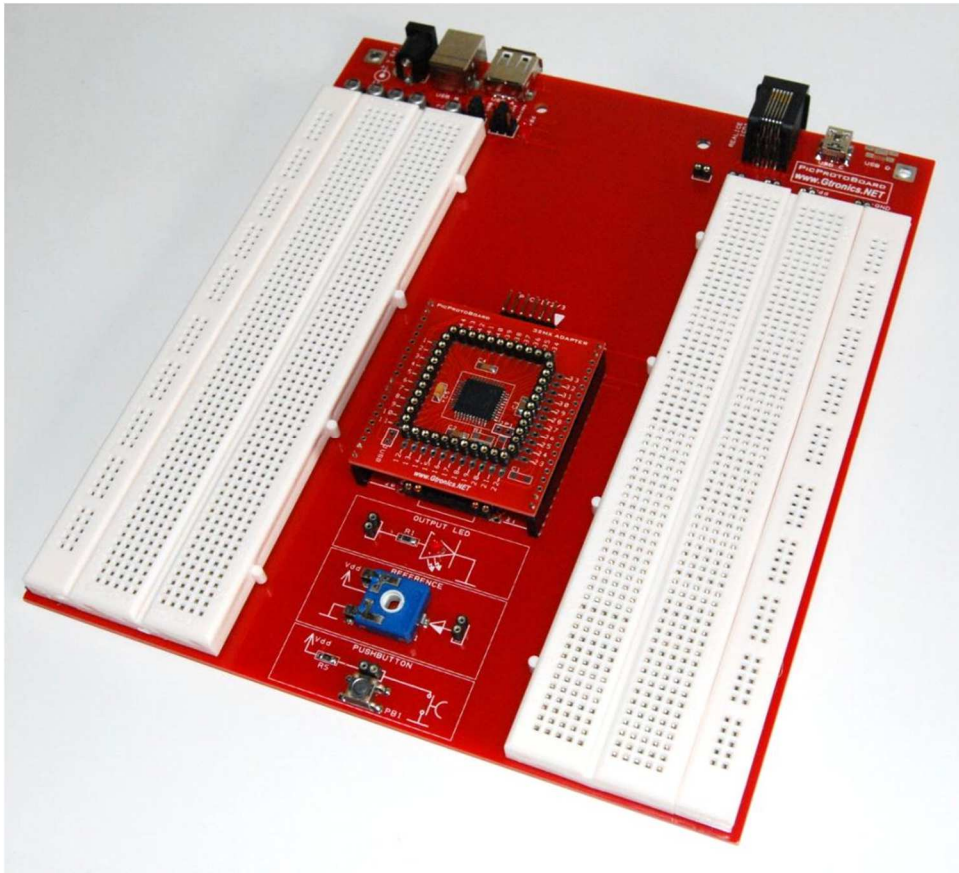
Disconnect the **PICPROTOBOARD** from the power supply and from the programmer / debugger. Remove the PIC16F or PIC18F from the socket (being careful not to bend the pins).



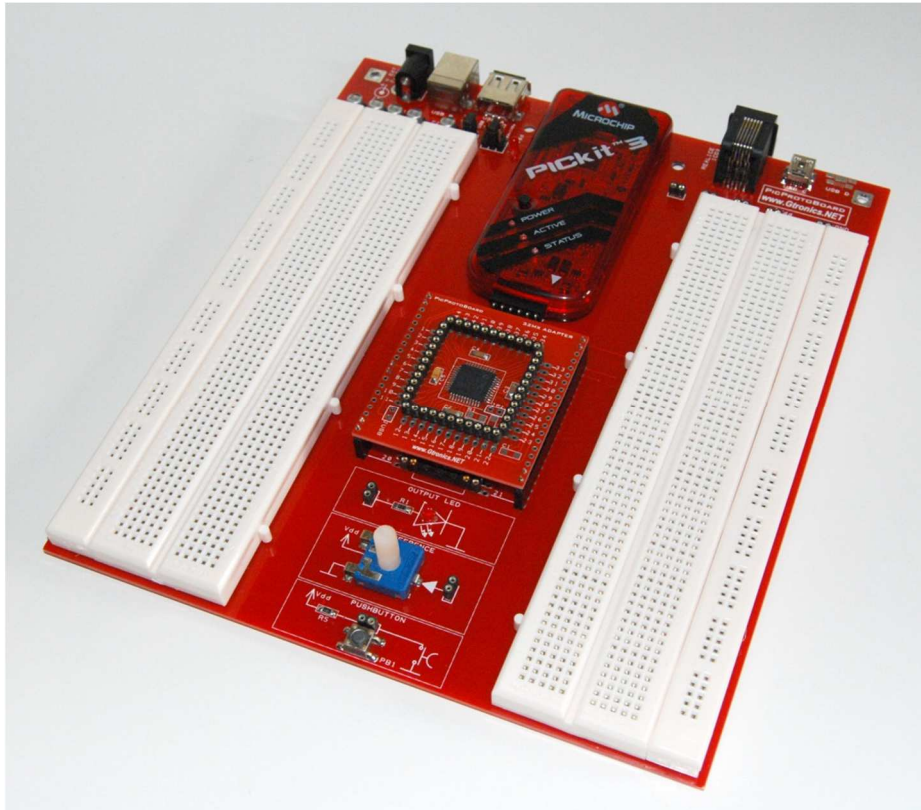
Solder the two 20 pins female strips provided with the adapter as shown in pictures below.



Insert the **32MX ADAPTER** as shown in the pictures below.
The **PICPROTOBOARD** is ready for use.



Testing and Using the PICPROTOBOARD with 32-bit PIC MCUs



This is not intended to be a programming course or a lesson of any kind about the usage of PIC MCUs.

If you are already familiar with PIC MCUs, you can probably skip this session.

It is suggested to download the *PIC 32MX1XX_2XX data sheet* and the *PIC 32MX Reference Manual 61132B* from the www.microchip.com website, so as to have the full documentation of this device/s.

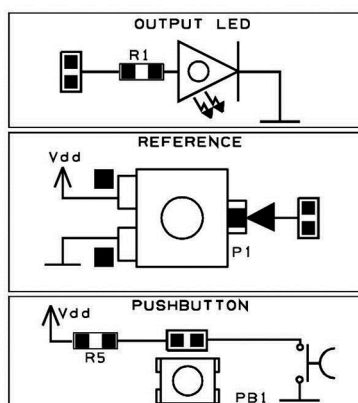
You can download the test projects from the www.Gtronics.NET website.

The projects are developed in MPLABx (ver. 2.00) with XC32 compiler (ver. 1.31), so if you do not already have these software you need to download them from the www.microchip.com website and follow their instructions to install them into your PC.

The demo projects available from the www.Gtronics.NET website are:

1. Blinking LED
2. Switch LED
3. Freq LED

These three projects make use of the three devices provided on board: OUTPUT LED, PUSHBUTTON and REFERENCE potentiometer.



Blinking LED

This very simple program makes the OUTPUT LED blinking at a fixed frequency.

1. Connect Pin RA0 (pin#19) of the PIC32MX130F064D to the OUTPUT LED.
2. Compile and run the project: the OUTPUT LED starts blinking.

Switch LED

This program switches the OUTPUT LED on and off according to the PUSHBUTTON state: the OUTPUT LED will be on as long as the PUSHBUTTON is pressed.

1. Connect Pin RA0 (pin#19) of the PIC32MX130F064D to the OUTPUT LED.
2. Connect Pin RA1 (pin#20) of the PIC32MX130F064D to the PUSHBUTTON.
3. Compile and run the project: the OUTPUT LED will be on as long as the PUSHBUTTON is pressed.

Freq LED

This program makes the OUTPUT LED blinks at variable frequency, according to the REFERENCE knob position.

1. Connect Pin RA0 (pin#19) of the PIC32MX130F064D to the OUTPUT LED.
2. Connect Pin RA1 (pin#20) of the PIC32MX130F064D to the REFERENCE potentiometer.
3. Compile and run the project: the OUTPUT LED starts blinking, the frequency varies according to the REFERENCE knob position.

The **32MX ADAPTER** uses pins #21 and #22 for PGED1 and PGEC1 signals, hence PGED1 and PGEC1 must be set in the device configuration for programming and debugging.

Each pin of the PIC is available for breadboarding connection, just be careful and follow the datasheet instructions if you need to use the PGED1 (pin#21), PGEC1 (pin#22), and MCLR (pin#18) pins for your own circuit.

If you want to use another PIC with the same 44 pin TQFP pinout (see the compatibility list at the end of this document), you can purchase the **32MX ADAPTER NAKED** in order to solder the PIC32MX that better suits your needs.

Before changing the PIC, always check the datasheet of the device to be sure of the pin-out and the Vdd.

Compatibility list

PIC32MX 44 pin TQFP compatibility list:

PIC32MX110F016D, PIC32MX120F032D, PIC32MX130F064D, PIC32MX150F128D, PIC32MX210F016D,
PIC32MX220F032D, PIC32MX230F064D, PIC32MX250F128D