

Other Information

To obtain the most recent and complete documentation for this demonstration board, including:

- User's Guide
- Board Description
- Board Schematics
- Source Code
- Application Examples
- Links to Web Seminars

please refer to the Microchip web site: www.microchip.com/xlp

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XLP 8-Bit Development Kit Quick Start Guide

Overview

The XLP 8-Bit Development Board is pre-programmed with a demonstration program. The board must be connected as described in this document to use the demonstration program. To measure current consumption, the current analyzer cable must be set up as described in this document.

XLP 8-Bit Development Board Setup

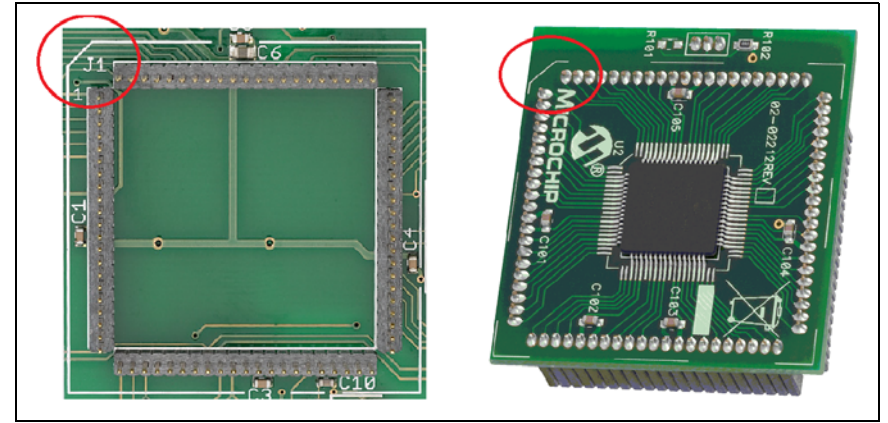
The kit includes the XLP 8-Bit Development Board, current analyzer cable, USB connection cable, bag of 15 jumpers, and Microchip's PIC16LF1947 and PIC18F87K22 microcontrollers. To use the kit, follow the steps below:

1. Insert either the PIC16LF1947 or PIC18F87K22 microcontrollers onto the XLP 8-bit board.

Make sure you insert the microcontroller as shown in the figure below.

CAUTION

Ensure that the bevel indicators on the PIM and board match up for correct placement (see figure below). Failure to do so may damage the device.



2. Confirm jumper configurations using the table provided.
3. Connect the current analyzer cable to the pins as indicated in this document.

Board Power-Up

Supply power to the board in one of the following ways:

- Connect the USB cable using the J13 connector. [J8 is ON]
- Connect two (2) AAA Batteries to B1 & B2, or a coin battery to B3. [J9 is ON; J12 is USED]
- Connect an external 3.3-S VDC supply to (+VEXT) and (GND). [J10 is ON]
- Connect Microchip's Harvester device to J17. [J11 is ON]

LED D5 will immediately turn on after power-on.

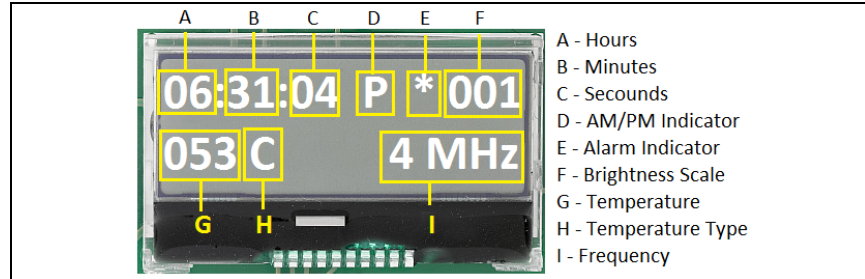
Note: Using the table on the next page, confirm your power source jumper configurations before supplying power to the board.

XLP 8-Bit Development Kit Quick Start Guide

Program Layout

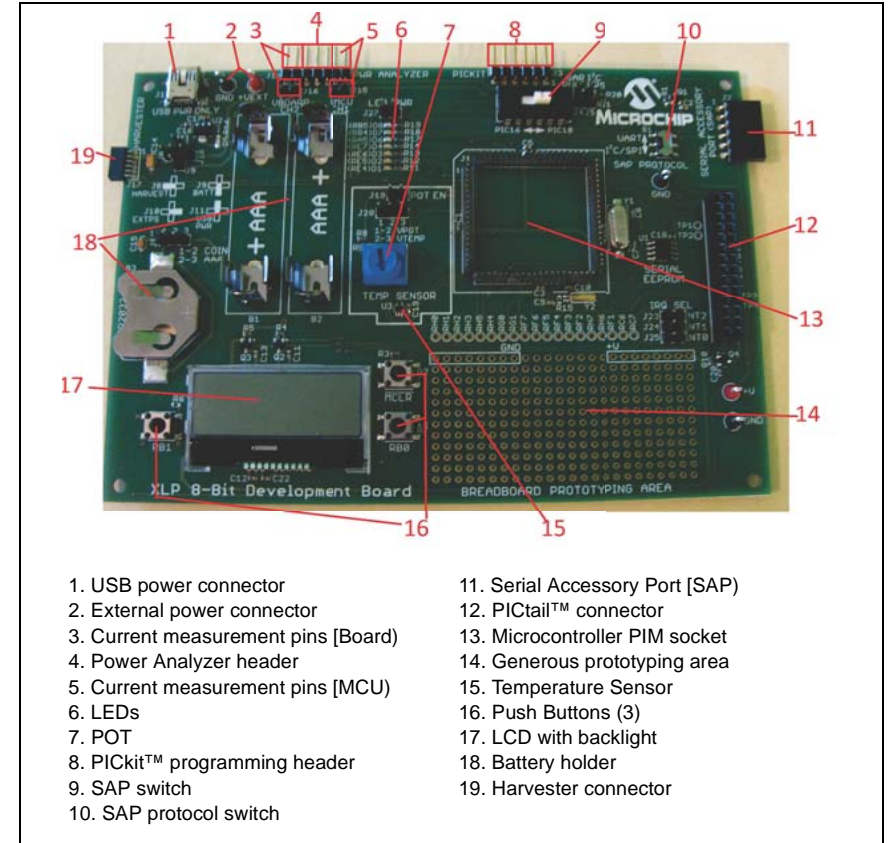
XLP 8-Bit Welcome Screen – [2 sec]

- Button Layout – Display button function layout [2 sec]
- Initial Clock Setup – Set up clock. Increase hours and minutes; starts in global time.
- Main Menu – [2 Sec] Introduction screen. Select demonstration mode.
 - Active Mode – Run current mode. CPU on; peripherals on.



- With CPU on and peripherals on, the chip is at full strength. In this mode it will show clock, temperature, frequency, brightness scale and alarm indicator.
 - Exit Condition: Select [RB1] or Alarm.
- Conserve Mode – Idle current mode. CPU off; peripherals on.
 - With CPU off and peripherals on, the current consumption is minimized while keeping track of time. Dependent upon settings (wake-up, display length), the CPU will wake up and enter Active mode for a set amount of time before returning to Sleep.
 - Exit Condition: Select [RB1] or Alarm.
- Sleep Mode – Sleep current mode. CPU off; peripherals off.
 - With CPU off and peripherals off, current consumption is at a minimal. The device is no longer able to keep track of time. Only outside interrupts will wake it from Sleep.
 - Exit Conditions: Select [RB1]
- Settings Menu – [2 Sec] Introduction screen. Select custom settings.
 - Time – Custom time-related settings.
 - Set Time – Adjust hours and minutes.
 - Time Standard – Select [24 – HR] or [12 – HR] time standard.
 - Set Alarm – Select 30 or 60 minute nap alarm; set custom time for alarm.
 - Alarm Toggle – Enable/Disable alarm.
 - Wake-up Interval – Used in conserve mode. Select to wake up every 15, 30 or 50 seconds, or do not wake up.
 - Display Length – When woken up, display for 5 or 10 seconds. Disabled if none.
 - Frequency
 - 32 kHz – Run at 32 kHz; LFINTOSC
 - 500 kHz – Run at 500 kHz; MFINTOSC
 - 4 MHz – Run at 4 MHz; HFINTOSC
 - 32 MHz – Run at 8 MHz with PLL enabled; HFINTOSC + PLL
 - Temperature
 - Display Temperature – Display temperature in Celsius or Fahrenheit.
 - Temperature Standard – Choose Celsius or Fahrenheit for display.
 - LCD
 - Backlight Toggle – Enable/Disable LCD backlight.
 - Adjust Brightness – Adjust brightness of backlight.
 - Save Custom – Save Settings to EEPROM.

XLP 8-Bit Development Board



Jumper Setup

Jumper	PIC16LF1947	PIC18F87K22	Function
J4	ON	ON	PIC16 SAP I ² C Pullup
J5	ON	ON	PIC18 SAP I ² C Pullup
J15	ON	ON	MCU Current
J16	ON	ON	Board Current
J19	ON	ON	POT Enable
J20	ON	ON	Select: POT[1-2]; Temp Sensor[2-3]
J27	OFF	OFF	LEDs
J23	ON	ON	IRQ: INT2 (RB2)
J24	OFF	OFF	IRQ: INT1 (RB1)
J25	OFF	OFF	IRQ: INT0 (RB0)
Power Source Jumpers			
J8	ON	ON	USB Power
J9	OFF	OFF	Battery [J12 Used]
J10	OFF	OFF	External Power
J11	OFF	OFF	Harvester
J12	OFF	OFF	Select: - [J9 Used] Coin [1-2]; AAA [2-3]