F LASH L AB

FlashLab is a PC104 style Pic microcontroller development system consisting of a main micro controller board with RS232 connectivity and stackable prototyping boards. Included is the Mecanique Microcode Loader software and bootloader firmware in the onboard Pic. This means that no hardware programmer is needed to programme the Pic, only a serial connection to a PC and a standard *.hex file produced by virtually any compiler or assembler.

Features include:

♦ Bootloader programming (no hardware programmer required)
♦ 16F877A, 18F452 or 18F4455 pic (**other pics available on request)
♦ RS232 connector for boot -loading and serial comms
♦ DTR, RX and TX separately available
♦ Onboard 5V regulator
♦ Socketed 20MHz crystal
♦ 40 pin PC104 stack through gold plated connections
♦ Microcode Loader software/firmware and all documentation on CD

All I/O lines, PIC functions, 5V supply and reset line connect to the PC104 connector and thus are passed through to stacked prototype boards. Prototyping boards connect by stacking and picking up the PC104 connections. Spacers, nuts and screws are included to enable a compact and solid assembly to be constructed which can be used as a finished project if so required. Prototype circuits can be saved intact to be used again, thus saving repetitive wiring work for future projects, the same main board being used to develop many projects.

The RS232 connection not only allows bootloading but also integration with a PC based system further enhancing design possibilities.

The FlashLab mainboard is assembled utilising quality components including an optional 40 pin pic chip with bootloader, requiring only the end user's programme and custom circuitry constructed on a stackable protoboard. Ideal for development, it can also be utilised as part of a finished system and is also an ideal low -cost replacement for PLC modules.

All software and documentation is provided on CD.
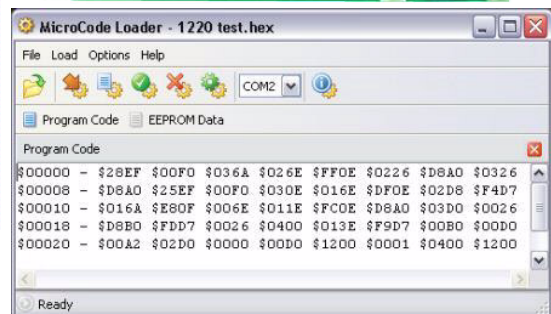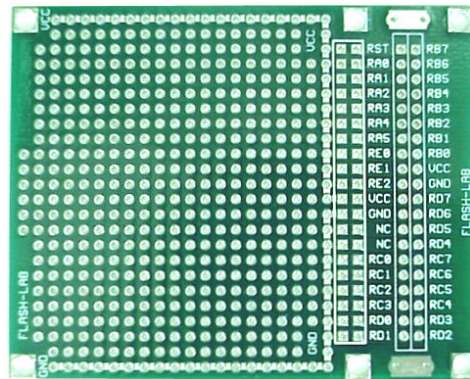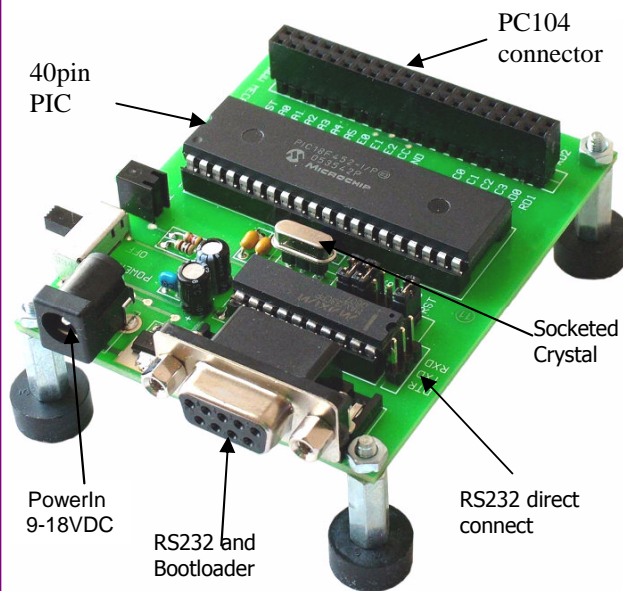
DC supply voltage range	9-18VDC (2.1mm*5.5mm centre+ve)
PIC	16F877A, 18F452, 18F4455**
Socketed crystal	20MHz supplied
Dimensions	65x80mms (stacked board height 16mms)
RoHS	Yes

XTAL Socket

Direct RS232 port access

vcc

R1
4K7

R2
100R

13 OSC1/CLKI   RC0/T1OSO/T1CKI 15
1 MCLR/VPP   RC1/T1OSI/CCP2A 16
                 RC2/CCP1 17
2 RA0/AN0   RC3/SCK/SCL 18
3 RA1/AN1   RC4/SDI/SDA 23
4 RA2/AN2/VREF- RC5/SDO 24
5 RA3/AN3/VREF+ RC6/TX/CK 25
6 RA4/T0CKI   RC7/RX/DT 26
7 RA5/AN4/SS/LVDIN
14 RA6/OSC2/CLKO RD0/PSP0 19
                 RD1/PSP1 20
33 RB0/INT0   RD2/PSP2 21
34 RB1/INT1   RD3/PSP3 22
35 RB2/INT2   RD4/PSP4 27
36 RB3/CCP2B   RD5/PSP5 28
37 RB4   RD6/PSP6 29
38 RB5/PGM   RD7/PSP7 30
39 RB6/PGC
40 RB7/PGD   RE0/RD/AN5 8
                 RE1/WR/AN6 9
                 RE2/CS/AN7 10

40 PIN PIC MICROCONTROLLER

PIN CONFIGURATIONS MAY VARY DEPENDING ON PIC USED

OSC1
OSC2

C2   C1
22pF 22pF

Remove C1 & C2 if a 3 terminal
resonator is used

MAX233
6 Gnd   Gnd 9
16 C2-   V-   17
10 C2-   V-   12
15 C2+   C1- 13
11 C2+   C1+ 8
19 R2in   R2out 20
4 R1in   R1out 3
18 T2out   T2in 1
5 T1out   T1in 2
14 V+   Vcc   7

Vcc

Reset

5 5
9 9
4 Reset
8 8
3 Tx
7
2 Rx
6
1

DB9F

Reset

1 2 RC7
3 4 RC6
5 6 RA4
7 8 RA5
9 10

5X5 HEADER

Reset 1   2 RB7
RA0   3   4 RB6
RA1   5   6 RB5
RA2   7   8 RB4
RA3   9 10 RB3
RA4   11 12 RB2
RA5   13 14 B1
RE0   15 16 RB0
RE1   17 18 Vcc
RE2   19 20 Gnd
Vcc   21 22 RD7
Gnd   23 24 RD6
      25 26 RD5
      27 28 RD4
RC0   29 30 RC7
RC1   31 32 RC6
RC2   33 34 RC5
RC3   35 36 RC4
RD0   37 38 RD3
RD1   39 40 RD2

STACKTHROUGH PC104 40WAY

Power

Centre +ve

1
2
Power Jack

LM340 5V
1 VI   VO 3
     GND
      2

Vcc

D1
LED

R3
330R

C5   C7   C4   C3   C6
10uF   100nF   10uF   10nF 10nF

POWERLITE SYSTEMS   www.powerlite.co.uk

flashlab_main.DSN   Flash Lab main board

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