APPLICATIONS BOARD

APPS-BD

The ABITEC APPLICATIONS BOARD (APPS-BD) contains a broad variety of applications on one product and is an ideal, economic target for demonstrating how to interface a computer to the outside world.

A Micro-controller or Microprocessor Training system or an IBM compatible P.C. can be used to create simple programs involving the "real time" application of control and measurement devices.

The techniques of controlling Fibre Optic Data Transmission, Keyboard entry, Digital sound production, D.C. and Stepper motors, Heaters, and Visual displays such as Traffic lights and Electronic Message boards can all be clearly demonstrated using this product.
This will involve the fundamentals of microprocessor programming, such as decision making, D/A and A/D conversion, open and closed loop control, creating delay loops, using subroutines and event counting.
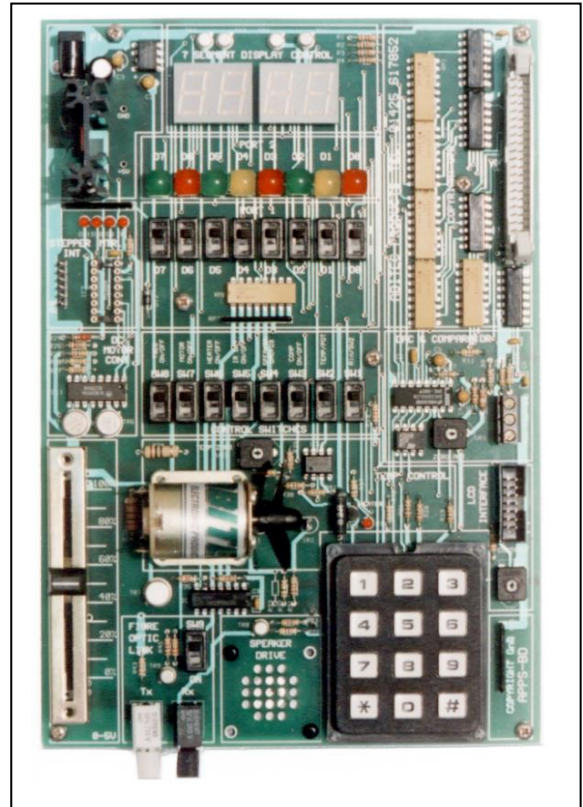
INPUTS

OPTICAL FIBRE RECEIVER - Can be linked by 1mm Fibre optic cable directly to the Optical Fibre Transmitter on the same board or to receive signals from a separate board

8 BIT DIGITAL SWITCH BANK - Slide switches of a substantial size that can be quickly set, the position of each being immediately recognised.

NUMERICAL KEYPAD - standard 12 key telephone layout matrix circuit.

OPTICAL SPEED and POSITION SENSOR - a three bladed propeller mounted on the DC motor is positioned to pass between an infrared transmitter and detector.

TEMPERATURE SENSOR - positioned to monitor the temperature of the heater which in turn is controlled by the propeller fitted to the DC motor.

SLIDE POTENTIOMETER - The 60mm slider moves adjacent to a 0-100% graduated scale giving the student a positional guide when using the potentiometer to vary the analog I/P voltage to the ADC.

EXTERNAL ANALOGUE INPUT - a high impedance I/P suitable for transducers with a range of 0-2.5 V DC.

OUTPUTS

OPTICAL FIBRE TRANSMITTER - Can be linked by 1mm Fibre optic cable directly to the Optical Fibre receiver on the same board or to transmit signals to a separate board

D.C. MOTOR - capable of speeds of up to 9000 RPM and fitted with a three bladed propeller

8 LARGE L.E.D.s - 8mm square "Tombstones" in Red, Yellow and Green arranged in sequence to enable two sets of Traffic light and a pedestrian crossing to be simulated.

HEATER - achieved using a 2.5W resistor, with a temperature sensor in close proximity, is positioned in the cooling air path generated by the motor propeller.

2 DUAL SEVEN SEGMENT DISPLAYS - Bright red 0.56" high characters can be put to many uses including monitoring the temperature of the on board heater or the speed of the DC motor.

ANALOGUE OUTPUT - digitally generated, an output of 0-2.5V can be achieved.

SPEAKER - with a frequency range of 1.3 to 8KHz it can be connected to digital line or to the digital to analog converter allowing the students program their own tunes.

OPTIONAL

The STEPPER MOTOR MODULE
(STEP-OPT) is an optional accessory ready to connect
to P3 for the APPLICATIONS BOARD (APPS-BD).
The Uni-polar stepper motor is supplied mounted
between two acrylic plates and the motor shaft fitted
with a pointer. The top plate forms a dial marked with
30 degree divisions for demonstration purposes. Removal
of the pointer allows the customer to fit their own
application. The option is supplied with a driver I/C to plug
into socket IC7 of the control circuitry built into the Applications
board where LEDs indicate the status of the drive to the
Stepper motor.

Order Code………STEP-OPT

The LIQUID CRYSTAL DISPLAY MODULE
(LCDM-OPT) is also an optional accessory
for the APPLICATIONS BOARD (APPS-BD).
Ready to connect to P4 of the APPS-BD,
the 2 line by 20 digit LCD Module is
supplied mounted in an acrylic frame for
ease of handling. This option is invaluable for
demonstrating the display of messages,
warnings or instructions, as used on small
instruments or on large public information
boards such as those found at stations,
airports, etc.
The techniques for rolling, flashing and
alternating messages can be shown.

Order Code….LCDM-OPT
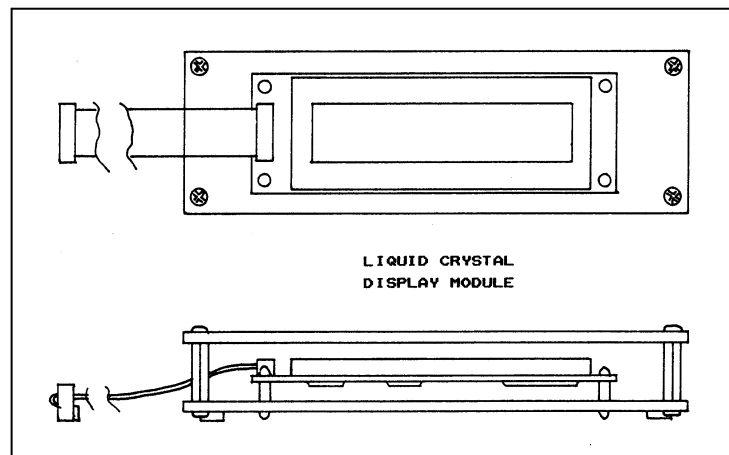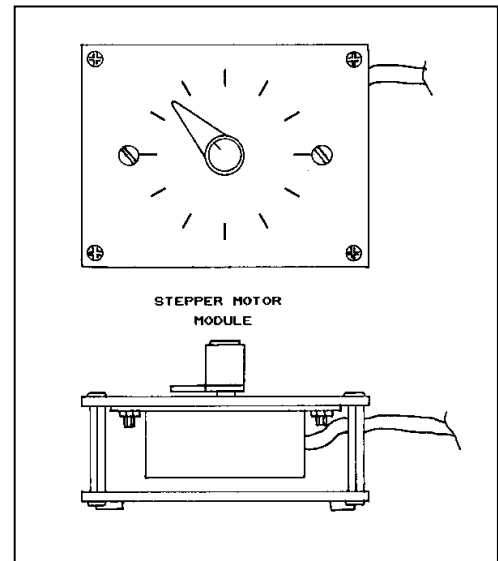
Applications boards are supplied with a Storage Case , User Manual and Power Supply Unit as standard.

Experiment manuals are available for Motorola 68000, Zilog Z80, Intel 8086 microprocessors and for the PIC, 8051 ARM3 Cortex, ARM7S and 68HC11 micro-controllers. The applications board is fully compatible with the Abitec target systems Z80-DATS, 8086-DATS, 8051-DATS, C5X-DATS, 877-TB, ARM7S-TB, KAYCOMP II 68000, PL-DATS ARM7S-TB ARM3S-TB and MC11-DATS. Interface cables can be custom made to suit other manufacturer's products.