

### MODEL: BGC8088 MICROENGINEER

# INTEL 8088 MICROPROCESSOR STANDALONE TRAINING SYSTEM with APPLICATION



Trainer shown here with optional experiment boards

### FEATURES:

A complete education microprocessor training system based on the popular Intel 8088 microprocessor. An user friendly standalone system with unsurpassed features. Programs commands can be keyed in directly using the keyboard or downloaded into the target board using a host computer.

The architecture and standard addressing modes makes it a straight forward and easy to teach and study. It is also a suitable target system to develop & run interface application controlled programs, developed based on this microprocessor.

Comes with a wide choice of selectable experiment modules to suit most common microprocessor interfacing application.

#### **SYSTEM SPECIFICATION:**

- CPU: Intel 8088 Microprocessor
- Clock Rate: 4.77MHz.
- RAM: 8K on-board standard. (upgradeable to 32K)
- ROM: 32K program memory (EPROM).
- Keyboard: 56 keypads set with alphanumeric characters A~Z, 0~9,and special ASCII symbols.
- Display: 40 x 2 LCD.
- Printer interface: Built-in standard centronics interface
- RS-232 interface: The 8250 controls the serial interface, can be programmed for different baud rates, data bits and stop bits. Includes download and upload of programs options.
- I/O expansion slot: 62-pin expansion slot, signals compatible with the IBM PC expansion slot, but without DMA.
- Status port LED indicators.
- Parallel Control Interface: 8255 PPI, 8254
  Timer, 8259 Interrupt Controller.
- Prototyping area on board for circuit design and experiment.
- Ni-MH Backup & Charger
- Power supply requirements: +5VDC & ±12VDC.
- Housed in a portable sturdy case

- 8088 Assembler / Disassembler.
- Memory commands: D-Display, M-Move, C-Compare, E-Edit, and F-Fill.
- Display and rewrite the content of registers.
- Single step program execution and debugging.
- Breakpoint debug: for Setting up to 10 breakpoints for program debugging.
- Numerical systems conversions and calculations, such as conversion from binary to decimal or the addition of hexadecimal numbers.
- Communication routines for Downloading and Uploading between the system and host PC.
- Driver routines for RS-232, Keyboard, Printer, Hercules card, LCD display. And BIOS Resume.
- EPROM driver routine.

#### **STANDARD ACCESSORIES:**

- Operational user manual.
- Experiment program samples
- Assembler & utility software (on-disk)
- Switching power supply.
- RS-232C interface software.
- RS232C serial cable.
- 50-Pin IDC flat-cable.





**DYNAMIC SCAN EXPERIMENT BOARD** [8802-1]

TEMPERATURE SENSOR EXPERIMENT BOARD [8803]



ADC & DAC EXPERIMENT BOARD [8804]

#### **CURRICULUM COVERAGE:**

- Keypad Input Scanning (Dynamic)
- ON-OFF Relay Control
- 7-Segmant LÉDs output control
- Password ON-OFF control

#### **SPECIFICATION:**

- Matrix 4\*7 keypad
- Built-in Buzzer
- Relay
- 6 Digits 7-Segment LEDs

#### **CURRICULUM COVERAGE:**

- Analog to Digital Conversion
- Characteristic of sensors
- Temperature sensing programming
- Single point temperature sensing setting
- Double point (High & Low) temperature sensing setting
- Thermal control applications

#### **SPECIFICATION:**

- AD590 Sensor
- LM335 Sensor
- A/D Converter
- Sensor selector

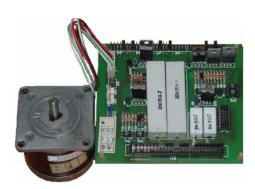
#### **CURRICULUM COVERAGE:**

- Analog to Digital Conversion
- Digital to Analog Conversion
- Characteristic of ADC & DAC ICs & circuits
- Digital output display & measurement
- Analog output display & measurement
- Waveform generators
- ADC & DAČ applications

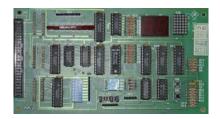
#### **SPECIFICATION:**

- A/D Converter
- D/A Converter
- Analogue I/O Port
- Jumper selector





## MOTOR CONTROL EXPERIMENT BOARD [8805]



BASIC INPUT/OUTPUT EXPERIMENT BOARD [8806]

### **STANDARD ACCESSORIES:**

- Lab Experiment Manual
- Experiment program samples

#### **CURRICULUM COVERAGE:**

- Basic of DC servo motor interfacing & wiring
- Basic of stepper motor interfacing & wiring
- Characteristic of DC motor & Stepper motor
- Motor direction and motion speed control

#### **SPECIFICATION:**

- Stepper Motor
- DC Servo Motor
- Transistor Drive Circuit
- Signal adjustment jumpers

#### **CURRICULUM COVERAGE:**

- Digital Input/Output via 8255 PPI
- 7-Segment decoder output control
- Dot-Matrix LED output control
- Switch sensing
- Counter
- Buffered output control
- Characteristic of decoder, latch & buffer ICs

#### **SPECIFICATION:**

- 8-Bit Output LEDs
- 2 Digit 7-Segment LEDs
- 8-Bit Input Switches
- Tact Switches
- Thumb Wheel Switch
- Signal selection jumpers



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