A microprocessor trainer with standard features like small keypad, LED display, monitor program etc, has becoming popular in training and development areas probably due to its low cost. Microprocessor applications are increasing and the requirement for a more advanced microcomputer trainer with powerful system software & additional hardware started growing. **GSAS 85A** is a result of **GSAS’s** conscious effort to satisfy this requirement. **GSAS 85A** has most of the useful features any single board computer user wishes to have for which **GSAS’s** products are popular.

**GSAS 85A** is an extremely powerful microprocessor trainer based on Intel's 8085 CPU. The system firmware provides on-board EPROM Programmer, stand-alone monitor, 2 pass assembler, disassembler and text editor. **GSAS 85A** is supplied with comprehensive and user friendly documentation as well as windows based communication software with on line help.

### MAIN FEATURES

- GSAS 85A can be operated either from on-board Keypad or from a PC through USB or RS 232-C interface.
- Keypad and serial monitor programs support the entry of user programs, editing and relocation: debug facilities like breakpoints and single-stepping, direct port input/output and full speed execution of user programs.
- On board text editor, assembler and disassembler facility in serial mode.
- User friendly windows and DOS driver software for the upload/download to/from host PC.
- On board EPROM Programmer features a 28-pin ZIF socket to program all standard EPROMs, 2716 through 27512 and EEROM, 2816A.
- On board Parallel Printer Port.
- On board Programmable Interrupt Controller 8259A.
- 32K bytes of CMOS static RAM with optional battery backup. Total on board memory can be expanded upto 64K bytes.
- Allows multi-processor system design by supporting the HOLD and HLDA signals.
- STD bus compatible signals available on the ribbon cable connector for easy system expansion.

### ACCESSORIES (Optional)

- Power Supply: +5V @ 3A, +12V @ 250mA, -12V @ 250mA and +30V @ 100mA.
- Interface modules for training purpose:
  - Keyboard, Elevator, Display, Dual DAC, 12 bit 8 Channel ADC, Logic Controller, Traffic Lights, Tone Generator, Stepper Motor, opto Isolated Input, Opto Isolated Output, Relay Output, DC Motor Interface, TXDR ADC Interface, Latch Interface etc.
- Study Cards for 8255, 8279, 8251/8253 and 8259 Peripherals.
- Parallel Printer cable.
- 3.6 V Ni-Cd Battery for power backup to RAM.
- RS-232C cable.

www.gsasindia.com
**SPECIFICATIONS**

**MCU**

Clock: 8085 @ 3.072 MHz

**MEMORY**

Three 28 pin JEDEC sockets offer 64K bytes of follows:

ROM: 16K bytes of firmware in 27128 at U4 socket.

RAM: 32K bytes of static RAM using 62256 at U6 socket.

**OPTIONAL**: EPROM/RAM at US socket, which can be configured for 2764/27128/6264/62256, through jumper Settings.

**FIRMWARE**

Serial and keyboard monitor programs

Text Editor Assembler (2 pass) and Disassembler in serial mode

Drivers for printer interface and EPROM Programmer etc.

**PERIPHERALS**

8279: Controls 32 keys keypad and 6-digit, 0.5” seven segment LED display

8253: 3 programmable interval timers.

Timer 0 is used for implementing single-step facility. Timer 1 is used for generating baud clock. Timer 2 is available to user.

8251: For serial communication supporting all standard bauds from 110 to 19,200

8259: Programmable interrupt controller accepts 8 interrupt signals

8255: (4 numbers) Two are used by the system to implement on-board EPROM Programmer and Parallel Printer port. The other two are available to the user giving 48 programmable I/O lines.

BUS: STD Compatible Bus signals are available on a 50 pin Ribbon Cable Connector.

**INTERFACE SIGNALS**

Parallel I/O: 48 TTL compatible lines [2×8255] are brought out through two 26 pin Ribbon cable Connectors

Serial I/O: RS-232-C compatible signals are available on on-board 9 pin D type female connector

Printer: Parallel printer interface available on a 25 pin D type female connector (compatible to PC printer port.)

**INTERRUPTS**

All interrupts except TRAP (used for single-step Implementation) are available to user if single-step is not required, user can utilize TRAP also via jumper option

**GENERAL**

Power supply requirement: +5V @ 1A, +12V @ 250mA, +30V @ 100mA

Dimensions: (L) 365mm x (B) 275 mm x (H) 55 mm (Approx.)

Weight: 1400 gms (Approx.)

**SCOPE OF SUPPLY**

1. GSAS 85A Trainer.
2. USB A-B cable
3. Windows and DOS driver software CD
4. User Manual with Schematics
5. 8085 Assembly Reference card.

(Note: Specifications are subject to change without prior notice)

**OUR PRODUCT RANGE**: EDA Tools and FPGA development boards from ALTIUM; Zeroplus Logic cum Protocol Analyzers, Portable Microscopes, Testing & Measuring Equipment, Testing & Measuring Systems, Universal Device Programmers; ARM, PIC Trainer and Interface Modules, Incircuit test and Flash Systems; In-Circuit Emulators; ROM Emulators; Microcomputer Development Systems; Add-on Cards, AD/DA cards, DIO cards, Microprinters, Microprocessor Trainers for 8085, 8086/88; Microcontroller Trainers for 8031/51 etc.