

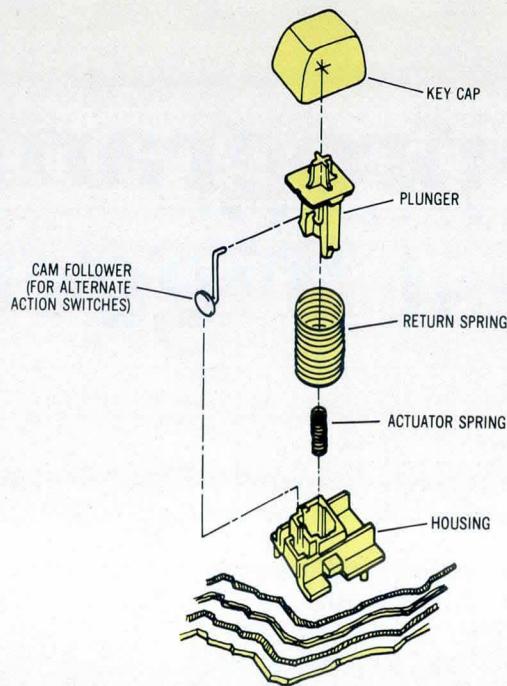
## TECHNOLOGY REVIEW

### Full Travel Keyboard Uses Membrane Technology For Low Cost/Reliability

Full travel membrane (FTM) keyboard, a basic matrix keyboard that combines standard human engineered feel and touch of a full travel key design with membrane switch technology, provides a price/performance mix that is claimed to be unmatched by any other type of keyboard currently available. Developed by Oak Technology Inc, Switch Div, 100 S Main St, Crystal Lake, IL 60014, the keyboard features a full travel (0.160" or 0.406-cm) key with industry standard feel and touch. The switch incorporates pretravel, overtravel, and hysteresis—important when it comes to operator ease and low fatigue considerations.

Basic design consists of a plastic housing, plunger, and spring attached to a prepunched metal plate and

*(continued on page 84)*



Oak Technology's FTM keyboard combines full travel plastic key parts with membrane technology. Basic design consists of plastic housing, plunger, and spring attached to prepunched metal plate and sandwich film base contact assembly

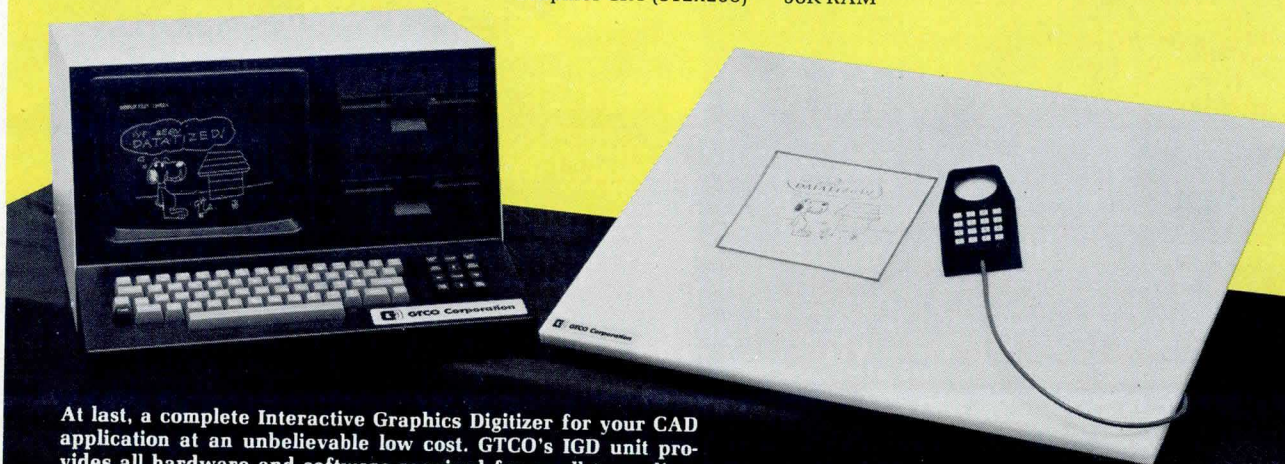
## IGD - Interactive "Grafic" Digitizer...from \$9865

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## TECHNOLOGY REVIEW

"sandwich" film base contact assembly. The design eliminates the double-sided, plated through hole printed circuit board and all the switch contacts and mounting terminal normally contained in the switch modules. In addition, it eliminates diodes and their mounting cost by using a software program in the microprocessor to provide N-key rollover.

Typically 5 x 13" (12.7 x 33.0 cm), the base mounting plate is made of a perforated 0.060" (0.152-cm) aluminum plate. The touch in panel (TIP) film contact sandwich and key modules are mounted on this plate by a plastic welding process. The polymer contact subassembly consists of substrate and membrane that have flexible conductive contacts screened on them, held together by an adhesive spacer with holes in it at each key switch position. The subassembly has perforations in it that correspond with the holes in the base mounting plate.

Attached to the mounting plate by a plastic welding process, the housing is a molded plastic part in which the plunger slides to provide a key travel motion. The plunger is held in the up position by the spring and has a key

cap attached to its top. On one side of the plunger, a series of small ramps are molded in to provide alternate action. A small plastic part called a cam follower hook is added to any key module to convert it from momentary to alternate action. Pushing the key once causes it to stay down; pushing it again causes it to return to the full up position.

The standard key of an FTM keyboard is 4-mode: shift, unshift, shift control, and alphalock. Reliability is extremely high, with testing showing up to 100M cycles. In addition, the keyboard is front sealed to protect against spilled liquids and other contaminants. Automatic testing procedures assure high quality levels and long life for minimal field service.

The keyboard can be configured to protect against emi, rfi, and static discharge. It is from 5 to 7 key positions deep and 27 positions long with 52 to 180 keys. Key height of 1.25" (3.175 cm) assures adaptability to low profile designs. The standard microprocessor based keyboard contains the ASCII code which can be modified to specific requirements.

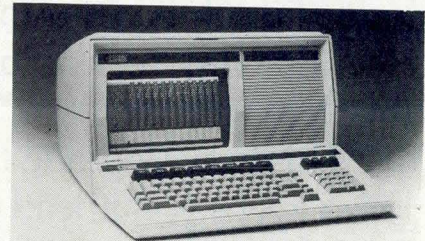
Circle 412 on Inquiry Card

## Video Display Terminal Configures Parameters From Keyboard

High performance and high resolution are provided by the software based VP 800/A video display terminal developed by Direct Inc, 1279 Lawrence Station Rd, Sunnyvale, CA 94086. The unit allows the operator or the host computer to configure all terminal parameters and is capable of emulating many other terminals. Its low profile and foldup keyboard adapt it to use in laboratory and office environments.

The table driven terminal incorporates those features proven popular in most of today's terminals as well as capabilities not customarily found. Standard machine features include multiple pages of memory, 80-char by

24-line or 132-char by 28-line display with an additional programmable status line, bidirectional smooth scroll at two distinct scrolling rates, and split screen. Full video attributes include double-high or double-wide characters.



Low profile, and foldup keyboard of Direct's VP 800/A video display terminal adapt it to laboratory or office environments. Unit can display 28 lines of 132 characters with an additional programmable status line

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