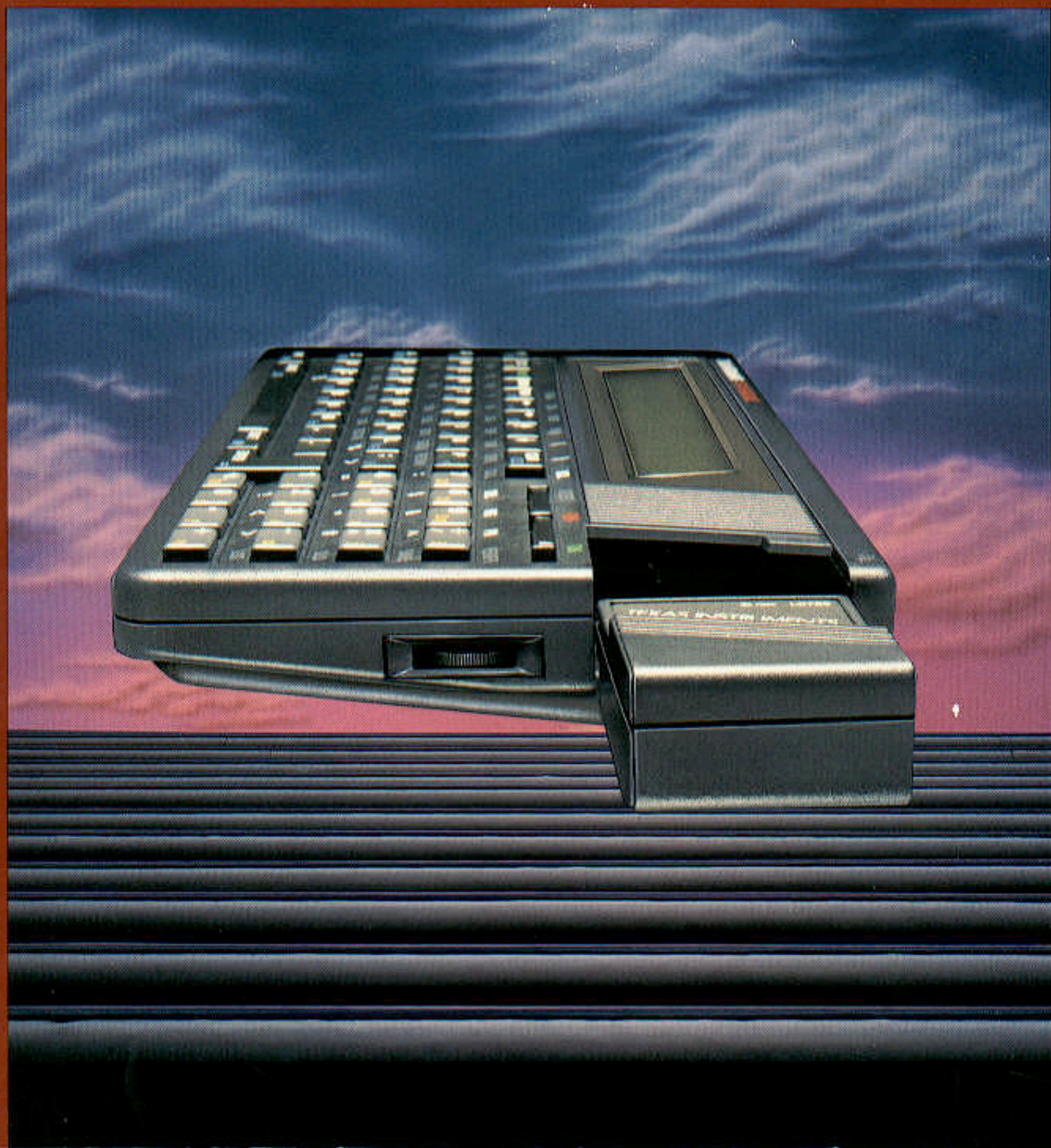


TEXAS INSTRUMENTS CUSTOM SOFTWARE MODULES

Tailored to deliver unprecedented productivity and savings



Now TI can help you develop modules that work with hand-held computer systems to fit your specific applications.

Instant time and cost savings for any type of business.

When immediate, accurate answers are critical to your people, they can't afford to spend extra time crunching numbers in front of clients . . . can't afford to plug in lengthy formulas to interpret results . . . can't afford to run back to the office for cost estimates or "what if" calculations.

Texas Instruments can now integrate the formulas, programs, estimating procedures, books and other data your people use most frequently into one hand-held, computer-programmable system, exclusively designed for your special business applications.

In seconds, your customized cartridge or module can be plugged into a BASIC-programmable TI hand-held computer that is as easy to use as

a calculator and as powerful and fast as some PCs. You get instant solutions in the field, at the plant, in the lab, at the office. What's more, you can connect a compatible printer to the hand-held computer for fast hardcopies of results.

No more scratch pads. No more guesswork. No more unproductive time or expensive lap-top computers. Just the reliable ammunition needed to work the problems you deal with most often, at the touch of a button.

No limit to business applications.

Texas Instruments customized modules—working with hand-held computer systems—are already increasing productivity, efficiency, speed and cost savings in such diverse fields as:

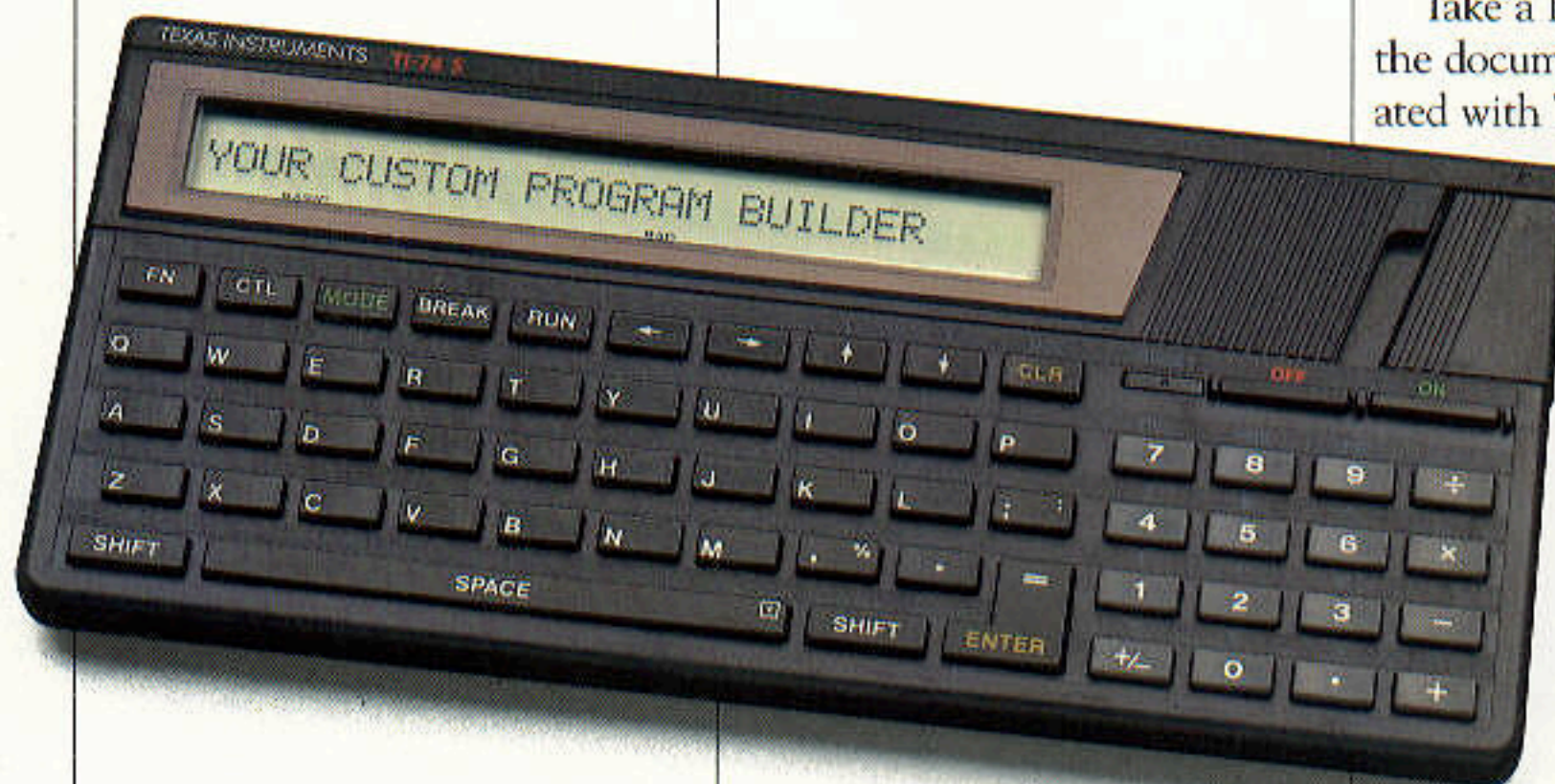
- Accounting—especially for tax-related purposes

- Medicine—especially in radiology and anesthesiology
- Chemical/Mechanical Engineering—quality, accuracy and speed of lab and field results
- Health Sciences—nutrition and dietary planning
- Insurance—especially actuarial tables
- Manufacturing—inventory control, data collection, spreadsheets
- Sales—phone service systems, air conditioning service systems, many others
- Real Estate—loan qualification, number of mortgage payments
- Financial—annual percentage rate calculations for savings and loan institutions
- Construction—home and commercial builders, insulators, carpenters, pipe fitters . . . and many, many more areas

Not just tools. Solutions.

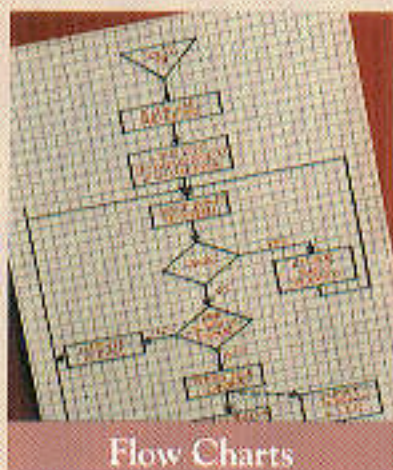
Take a look at just a few of the documented successes initiated with TI customized mod-

ules and hand-held computer systems. **Critical time savings**—By carrying a hand-held calculator with a module pre-programmed with special formulas for analyzing blood gases, anesthesiologists at one hospital were able to interpret

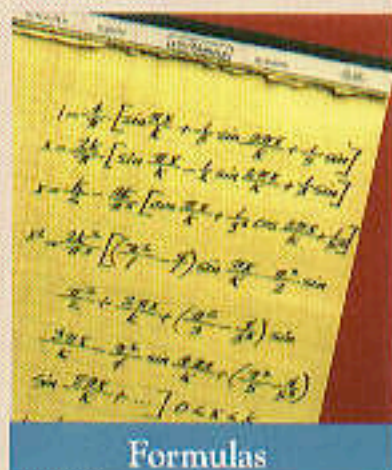


TI-74 BASICALC hand-held computer. It's simple to use as a calculator with 70 built-in scientific functions.

Texas Instruments will program vital information into a single module, customized to your unique applications. Enter such data as . . .



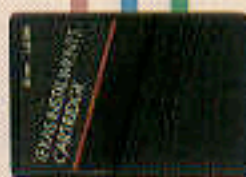
Flow Charts



Formulas

Reference Tables

Count on your plug-in module for instant solutions in a host of situations.



Example: An electrical contractor needs to determine the amount of wiring of a certain thickness required for two rooms, at a given price. The answer is as easy as pressing several preprogrammed keys. Now the customer asks for an estimate for seven rooms of a different thickness, at a lower, discounted rate. With the formula preprogrammed in, it's a matter of seconds . . . without sitting down and going through lengthy computations.

You can also get a portable PC-324 thermal printer that connects to your hand-held computer. It can generate copies of computer or calculator information at 24 characters per line, 48 lines per minute. Power is by batteries or an optional AC adapter.

results instantly and inform surgeons of patient conditions. A delay in such processing of results could have been life-threatening.

Improved accuracy—A group of ophthalmic surgeons were able to reduce the incidence of pre-operative measurement errors.

Faster assessments—Nutrition dieticians at one hospital were able to perform nutrient intake analyses and other related calculations in seconds with unprecedented accuracy.

Man-hours cut 75%—By reducing calibration time by 75%, a chemical company realized a savings of 1,056 man-hours per field technician.

Labor costs reduced—When the number of pipe fittings were reduced, a plumbing contractor saved \$1200 in labor costs with each building constructed.

Waste trimmed—A hospital saved \$20,000 annually in X-ray and processing costs.

No system has ever been more compact, cost-efficient or comprehensive.

TI custom hand-held computer systems can be carried anywhere. The hard plastic case easily fits in a briefcase.

The computer is a TI-74 BASICALC, with 70 built-in functions—from advanced scientific to statistical applications—and up to 113 programmable commands in the simple, straightforward BASIC language. It can store over 7200 program steps (8K bytes) of memory and data. And yield results as fast or faster than some PCs.

Plug in the customized module that TI has developed specifically for your business and you only have to push one or two buttons to find the answer you're looking for, saving valuable time and keystrokes.

Manager's Helper makes short work of tough government housing form.

Low-income rural government housing programs sponsored by the Farmers Home Administration (FmHA) require that resident managers (RMs) of privately-owned, government subsidized apartment complexes complete Tenant Certification paperwork annually to determine if each tenant is eligible to live in the project and the rent they must pay. Recent changes in FmHA procedures have made Form 1944-8 more complicated and lengthy than ever. This is especially difficult for the RM, who is usually a tenant and may be elderly or have limited education.

Private management agents, who manage several complexes, work with resident managers to keep track of all records the FmHA needs. Though Form 1944-8 remains the resident manager's responsibility, its new complexity has forced many RMs to subcontract agents to complete the form, an expensive procedure. Most MAs also have access to a PC, which RMs cannot afford.

Hand-held relief.

Sensing the RM's critical need for a faster, more accurate method of completing the certification process without the added expense of using an MA, High Tech Solutions of Seattle, Washington designed the Manager's Helper. This TI-74 based

package features a hand-held computer-calculator that helps the RM speed through Form 1944-8 in minutes, with no errors. And every question and answer is displayed in plain English, so it is easy to understand.

The Manager's Helper utilizes an erase-protected, plug-in module containing the program instructions to complete the form. In the event the FmHA alters the 1944-8, this module can easily be re-programmed to reflect the changes.

Each Manager's Helper is set up specifically for the complex it will be used at. Every complex has unique data related to its rents, utility allowances, unit sizes and income limits. These variables are placed in the system by HTS prior to shipping, so it is ready to run when received by the RM. The user is able to easily update the variables when required, such as in the event of a rent change.

As managers work through each line of the form, the built-in logic of the Manager's Helper automatically eliminates miscalculation errors by remembering answers to income calculations, then applying these to tenant contribution and worksheet calculations. Among answers generated are Total Annual Income, Eligibility Income Level, Elderly Adjustments and Final Net Tenant Contribution. An optional

printer further verifies correct inputs and provides a handy tape for record-keeping.

As a supplement to the Manager's Helper and to the FmHA Handbook, High Tech Solutions provides an instruction manual especially written by the Company. It contains step-by-step explanations for operating the computer and completing the form, as well as instructions for gathering tenant information. **Well-received for its simplicity and savings.**

How fast and easy has the Manager's Helper proven to its users? Most RMs can now complete a tenant certification form in just 5 minutes—a fraction of the time previously spent—freeing them up to perform other management tasks.

"The response has been tremendous since we introduced the Manager's Helper in the summer of 1987," states High Tech Solutions president Maurice King. Users—most unfamiliar with computers till now—are enthusiastic over the ease of operation. "In fact, some of the resident managers are over 80 years old and they still breeze through the forms."

With so much less chance of error, the FmHA spends less time correcting and returning forms to RMs for further recalculation, with attached fines. Management agents save time and errors as well because Form

1944-8 results must be transcribed onto Form 1944-29, a summary report on tenants in all complexes.

More solutions ahead.

As Maurice King and his business partner, Tom Merriam, perfect and market the Manager's Helper throughout the country, they are also at work on other government form-based

packages. The HUD Helper is a low-income housing counterpart for tenant certification forms in urban areas. Applications in other fields include a construction estimator package and a gas station inventory loss control program.

High Tech Solutions takes pride in having initiated a tool that so simplifies Tenant Certification forms. Given the amount of paperwork increasingly

required by government agencies, infinite opportunities exist for the ease and flexibility of hand-held computer/calculators and custom modules.



Cummins Drives Home TruckSpec Advantage

Cummins Engine Company, Inc. of Columbus, Indiana is the world's leading independent manufacturer of diesel engines, components and services, and one of the most innovative,

powering 55% of the heavy-duty trucks in North America. Because Cummins is the premium diesel company in the industry, a Cummins Distributor's representative is often called upon to direct a truck purchaser on the overall vehicle powertrain specification.

When a customer specs a truck, one critical concern is spec'ing the proper

powertrain... the proper transmission, axle ratio, tire type and other variables that affect fuel efficiency and vehicle driveability. If a powertrain spec doesn't work, it is sometimes interpreted as an engine problem.

Original Equipment Manufacturer (OEM) dealers are also involved in spec'ing many other components of the vehicle, such as wheelbase and axle, so they may not concentrate as heavily on providing the most advantageous powertrain specs. Many times the dealer recommends a powertrain based on past experiences. Spec books and other tools exist but involve a very time-consuming process to work through.

TruckSpec: the long-awaited powertrain answer.

Using their own internal resources, Cummins developed the TruckSpec, a TI-74 programmed to calculate powertrain specs in just minutes, at a minimum cost. Cummins reps can now easily compare the power available from the engine to the power required, reserve power and other parameters that affect fuel efficiency and driveability, including desired cruise speed, geared speed and torque peak speed. If the truck is spec'd incorrectly, the TruckSpec automatically displays where the problem is.



TruckSpec pre-solves for three different engine speeds in the computer so that their rep can save a lot of time by instantly changing variables, running different ratios and making side by side comparisons at those speeds . . . all right in front of the customer. Specially designed Quick Reference Cards aid reps with much of the required input information such as torque available at torque speed, axle ratios, rpm, transmission gear ratios and horsepower ratings. **Success after success.**

Since the TruckSpec's field introduction in December, 1987, the response has been overwhelmingly positive.

Says Product Training Manager Chuck Goode, "We've developed a tool for our reps that presents Cummins as an intelligent consultant to our direct customers and OEM dealers. The more sophisticated customers—purchasing agents for large truck operations—are impressed by our thorough knowledge and expertise. The TruckSpec makes it quick and easy for them to understand our recommendations."

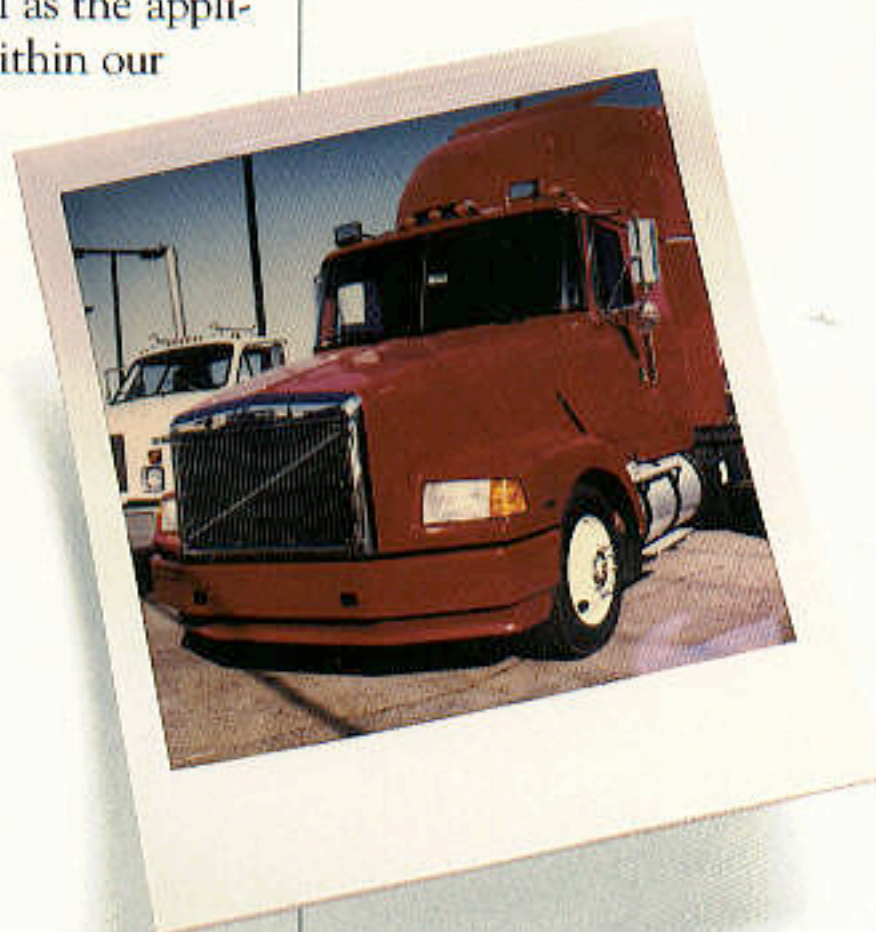
The TruckSpec has not only given Cummins reps a better image in the marketplace; it has improved each rep's self-image. By being able to sit down with a customer and instantly show him what components make the best specs for his needs and why,

it instantly presents the rep as professional and highly knowledgeable in determining the most efficient vehicle spec for the customer.

The new industry standard?

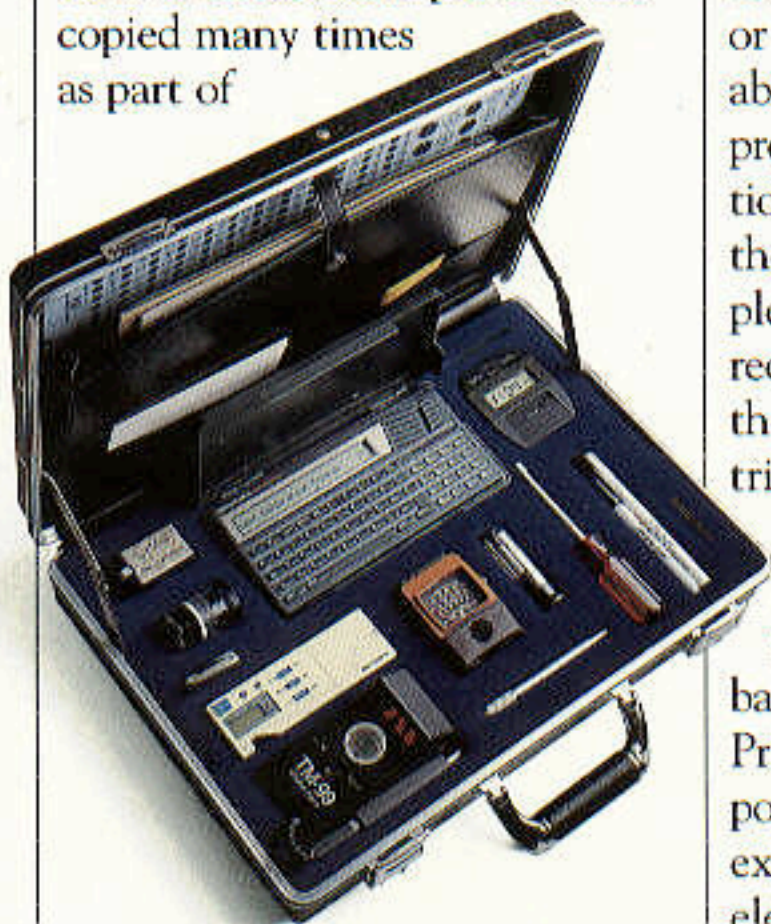
As the TruckSpec gains more acceptance and consistently yields on-target results, direct customers and OEM dealers will increasingly realize that today's changing market cannot support most traditional time-consuming spec'ing methods.

According to Scott Davidson, Manager-Technical Sales, future possibilities are exciting. "There are certainly many more enhancements we can make for the automotive market. The TruckSpec has helped our market expand as well as the applications possible within our organization."



Kodak makes positive graphic impressions with customized software modules.

Few industries rely on consistent accuracy as heavily as the graphic arts professions, especially in the area of color separations. Over 200,000 color images are prepared for printing each week using 1,800+ color separation scanners across the nation. Once separated and converted to halftone images, each of these color pictures are copied many times as part of



the image assembly process and these images must remain constant from generation to generation. This involves determining critical exposures and/or exposure changes in a contact frame with allowable error tolerances of only 5 to 10%. The Graphics Imaging Systems Division of the Eastman Kodak Company supports the printing and publishing industry by providing it with films, hardware, and other

materials. Additionally, Kodak's Field Sales Representatives (FSRs) help color separators maintain exposure consistency while using their products.

Over and above maintaining consistency in the images produced, there is yet another requirement to selectively modify these pictures to achieve the results desired by the advertiser or editor. It is estimated that about 80% of all color pictures produced must have some additional "corrections" made after the initial separation is completed. Traditionally these corrections are made by re-scanning the original image or by lengthy trial-and-error calibrations and tests.

In the fall of 1986, Kodak introduced its innovative PC-based Dry Dot Etching System Program. This system also incorporated accurate dot-for-dot exposure as the key calibration element in the computational system. Right from the start, Kodak dry dot etching software proved time-saving and easy for operators to master on their PCs, eliminating extensive exposure testing and calibrations, while reducing the risk of error.

Yet Kodak's FSRs still found themselves in need of similar, portable field computational tools that could help DDE customers use their software even more effectively. It was certainly cost-prohibitive and impractical

to carry around a PC-based system for on-the-spot contacting or image assembly calculations and calibrations.

A portable solution.

Working with Texas Instruments, Kodak converted a portion of its PC based dry dot etching software into a customized EPROM (erasable programmable read only memory) module that plugged into a TI-74 hand-held computer/calculator. The TI-74 soon became the central component of the Kodak GISD FSR Field Kit, which also houses other vital temperature and dimensional computational tools in a briefcase.

Now FSRs have the adequate I/O to provide quick-turnaround calculations and calibrations right in front of their customers, saving time and maximizing productivity. Using the TI-74, such procedures can be completed in just 15-20 minutes, instead of the previous 3-4 hours. At the touch of a button, any FSR can perform a variety of dot-for-dot calibrations, dot density conversions, Log exposure changes (photographic materials respond logarithmically, rather than linearly) and U.S. measurement/metric conversions.

A value-added image.

There are additional side benefits of the use of the TI-74 by Kodak FSRs. The image of the FSR is greatly enhanced,

because customers know they can depend on Kodak for fast, accurate service as well as superior film and support materials. FSRs can also spend more time strengthening business relationships with the customer, instead of doing laborious manual exposure calibrations. One key internal advantage is the ease with which FSRs can service one client and quickly move on to the next.

At present, all of the Kodak GISD Film FSRs utilize these Field Kits. Consistently favorable responses have been received from both customers and FSRs themselves throughout the country. Kodak also uses the TI-74 and the kit to service the Graphic Data marketplace, another area of the industry

which includes businesses that use Kodak films in printed circuit boards, drawing reproduction and other related areas.

Future opportunities include the addition of more software tools as well as the distribution of the FSR Tool Kit to Kodak FSRs throughout the world.

Kodak's continued application of technology, coupled with its use of tools—such as the Texas Instruments TI-74 and its customized software modules—will help provide a sound scientific footing for customers in the graphic arts.



Custom modules help Revenue Canada make big deductions in audit time.

When the field payroll auditors of Revenue Canada Taxation, the Canadian Department of Revenue, found their work suddenly complicated by the 1986 introduction of compounded daily interest, they knew the manual paper, pencil and pocket calculator method just wouldn't do any longer. Not only did their responsibilities include making sure that money withheld from payroll deductions was remitted regularly; but now detailed interest rate calculations on money owed had to reflect each interest update. In addition, income tax rates varied from province to province; some changed as often as twice a year.

The portable, fast, economical solution: the hand-held TI-74 computer with a plug-in module, customized to Revenue Canada's rapidly changing needs. Currently, Revenue Canada uses over 500 TI-74 units with printers in District Offices and Taxation Centres from coast to coast and off-shore.

For Garth MacDonald, Senior Procedures and Operations Officer, a hand-held computer system like the TI-74 was a natural choice. "With so many categories of payroll deductions, tax calculations, Social Insurance (Social Security) number validations and reports that needed to be checked and re-checked, the TI-74 was the best hand-held system that met the capabilities we required."

By entering just a few numbers and answering several questions, dozens of calculations that used to take 10 to 15 minutes can now be performed in seconds, on-site. Specific applications for each province and audit situation, pre-programmed onto modules that plug into the menu-driven computer, have minimized audit and calculation time. And the easy-to-learn BASIC programming language provides display manipulation and other advanced features, such as French language prompts.

MacDonald is most impressed with the productivity gains and time savings users have experienced since Revenue Canada introduced the TI-74s to its payroll auditors in the field in early 1987. "Now we are saving an average of 20 minutes of clerical time per audit—time we used to spend doing lengthy calculations and paperwork."

"With our spreadsheet program," adds Bob Fage, Payroll Auditor, "we can go back and forth across categories, cross-check, make corrections easily, see the previous entry, you name it. For each second it takes to perform circular calculations we save a minute. What's more, our answers are always right to the penny."

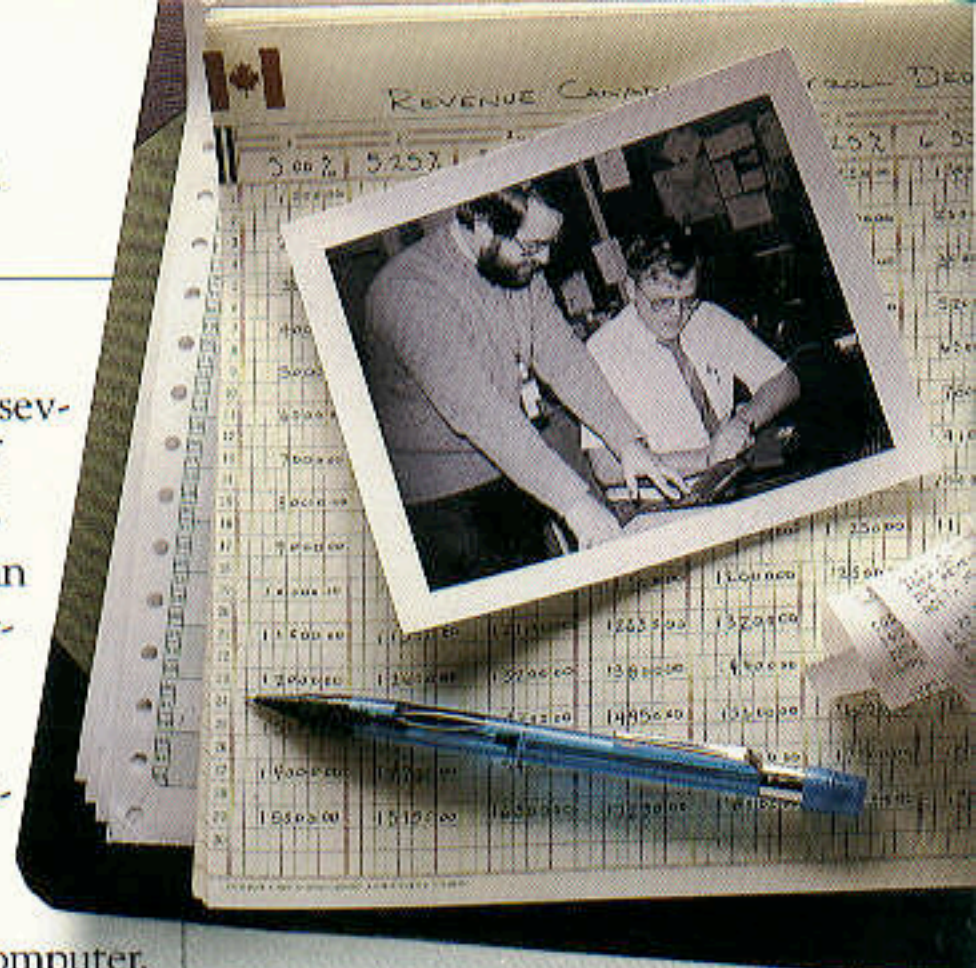
User feedback from the field has been very positive. Because each computer is small and light, it's not as intimidating as a

larger computer. And certainly not as expensive.

"To get any more sophisticated", concludes MacDonald, "we'd have to step up to a laptop computer that weighs 15 lbs. and costs around \$3000."

Into the future, Revenue Canada sees the TI-74 playing an increasing role in saving time during audits. For instance, the capability to enter in variables and get all deductions back in seconds will leave more time for test-checks using the computer, instead of having to constantly flip through tables. Interface packaging has linked the TI-74 and the desk-top PC, making programs word-processable.

With its portability, low cost, easy operation and flexibility to the ever-changing demands of Revenue Canada's field personnel, the TI-74 will continue to make short work of some very complex audit situations. And time saving computers such as the TI-74 are cost-saving for the Canadian taxpayer, in the long run.



TI works with you.

Here's how we will help you formulate a customized system:

- TI will meet with you and identify your unique needs
- TI will work with you to compile the formulas, calculations and information your key people use most often in the field, lab, plant or office
- TI will develop your customized software cartridge and package it to meet your specifications

Immediate payback.

With a system price as low as \$100, the payback is virtually instantaneous.

We're flexible to your demands.

No matter what business you're in, Texas Instruments has the resources to help you put together the right hand-held system to meet your specific objectives. Together, we can determine how and where to best utilize your new system.

You don't have to completely figure out how to customize your system ahead of time. But you're probably already more than halfway there.

Most likely, your people need our customized system if they:

- use certain, specific calculations repetitively and frequently
- often encounter "what if" situations, variations in cost determination or a bottom line that changes frequently
- need to increase sales, productivity, cost savings or efficiency
- use look-up tables or books often

In one module, we can capture formulas, reference books and other vital data.

And you can always add more data and applications as the need arises.

If you'd like, we'll work with your already finished program. This situation is ideal for firms already equipped with the TI-74 BASICALC.

If you've got an application, contact TI.

To find out how TI can go to work for you today, call (214) 995-1627 or write: Texas Instruments, Vertical Marketing, Consumer Products Division, 7800 Banner Drive, MS 3943, Dallas, Texas 75251.

A Texas Instruments representative will talk with you and show you how the simplicity and potential cost savings of the system can best fit your requirements.

We've already helped hundreds of businesses get solid results with substantial dollar savings. We have the know-how and the background to give you a powerful, competitive edge in the marketplace... adapted to your company's own applications for even greater effectiveness.

**Call 1-214-995-1627
today and share your
customization ideas with
Texas Instruments.**

Immediate responsiveness to the technical needs of our users has long been a Texas Instruments tradition. It is reflected in our constantly changing range of quality electronics products, developed for specialized business and consumer applications. And now, more than ever, the same solid support is underscored with our custom software module capabilities. You can count on the kind of expertise and service that will ensure faster, more efficient ways to perform "what-if" comparisons, estimates and other routine procedures. As important as cost reduction and time management programs are these days, customized module and hand-held computer systems are not only ideal tools to increase productivity and savings, they are becoming essentials.

Larry Walker
Vertical Marketing Manager
Consumer Products Division

