

C.P.D. NEWS

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HERE'S THE "ICOM"--INTEGRATED CIRCUIT OSCILLATOR MODULE. Shown are Joe Ernsberger of Design Engineering who was responsible for the micro-circuit adaptation, Ralph Sherman of Design Engineering who did the electrical circuit design, Bob Hahn of Advance Manufacturing Engineering who is coordinator of manufacturing for the ICOM, and Hank Schaefer of Design Engineering who did the mechanical design. Also, many others have been involved in this major new step in CPD's product line.

CPD TO MARKET BASE STATIONS USING MICRO-MINIATURIZED INTEGRATED CIRCUITS...

ICOM Announced

Lynchburg General Electric has announced it will begin marketing the commercial FM two-way radio industry's first base stations to use micro-miniaturized integrated circuits.

FIRST APPLICATION OF THESE ULTRA-RELIABLE CIRCUITS WILL BE IN THE PRECISE FREQUENCY CONTROL OF THE RADIO TRANSMITTERS AND RECEIVERS IN THE 450 MC. BAND.

Such precision has been made necessary by recent Federal Communications Commission decisions to double the number of users in the 450 megacycle commercial two-way radio bands by reducing the allowable band width and assigning new users to the half-way channels.

WITH A TINY PILL BOX-SIZED DEVICE CALLED "ICOM"--INTEGRATED CIRCUIT OSCILLATOR MODULE--AS A FREQUENCY CONTROL ELEMENT, GENERAL ELECTRIC SAYS ITS USERS CAN OBTAIN FREQUENCY STABILITY OF PLUS OR MINUS 0.0002%.

In a watch, this would be about the same accuracy as gaining or losing no more than one minute in a year!

THIS IS 30% BETTER THAN IS
(See "ICOM".....page 2)
GE STOCK closed at 89-1/4.

CONGRATULATIONS...FOR EIGHT YEARS OF PERFECT ATTENDANCE!

SPD Cell Process Manager Curt Grey recently congratulated Process Control Expeditor David Karnes for an outstanding attendance record ...on January 19 he passed the eight-year mark for perfect attendance.

WHAT'S THE SECRET OF THIS EXCELLENT RECORD? WE ASKED. "I'VE BEEN BLESSED WITH GOOD HEALTH," SAID DAVID, "AND I'M GRATEFUL THAT I HAVE A JOB THAT I CAN DEPEND ON."

"We're mighty proud of David's record," commented Curt, "and we are glad to have him in the Cell Process



area.

"DEPENDABLE EMPLOYEES CONTRIBUTE GREATLY TO THE DEPENDABILITY OF OUR BUSINESS."

FRIDAY FEATURE
**NATIONAL
 ELECTRICAL
 WEEK**
 FEBRUARY 5-11

Electricity **POWERS**
Progress

Progress at Your Fingertips

Just flip the switch. You could start a rocket roaring off to the moon, or set a computer into action reading data at a rate that would enable it to polish off "Gone With The Wind" in 20 seconds. Or you could turn on a television set or start a machine that milks a cow.

IT IS THE UNLIMITED POWER AND VERSATILITY OF ELECTRICITY THAT MAKES POSSIBLE THE WONDERS OF OUR AGE AND PUTS THEM AT YOUR FINGERTIPS.

But as exciting as today's wonders may be, the best is yet to come, according to leaders in the electrical industry, which observes National Electrical Week, February

"ICOM".....(Continued)

REQUIRED BY THE NEW FCC TECHNICAL STANDARDS AND IS ACHIEVED INSTANTLY WHEN THE RADIO IS TURNED ON.

This accuracy is maintained from 30°F below zero to + 140°F.

THE ICOM UNIT WEIGHS LESS THAN ONE-HALF OUNCE AND OCCUPIES LESS THAN ONE-HALF A CUBIC INCH. INSIDE IS A CRYSTAL-CONTROLLED RADIO FREQUENCY OSCILLATOR CONSTRUCTED ON A HYBRID THICK FILM INTEGRATED CIRCUIT CHIP.

This construction accounts for the small size and ultra-reliability and is similar to the technique now being used for space electronics and large scale computers. This, however, is the first application in the commercial two-way radio field.

THE TINY MODULE IS A SELF-CONTAINED CIRCUIT PACKAGE CONTAINING NOT ONLY THE OSCILLATOR BUT ALSO A VOLTAGE



Engineering Secretaries Betty English and Doris Hesson call attention to National Electrical Week which will be observed here next week with many specials on sale at the Employees' Store.

5-11. (At Lynchburg GE, a highlight of the observance will be a host of specials on sale at the Employees' Store.)

IMAGINE SELECTING A STEAK FOR DINNER BY CALLING THE MARKET WITH YOUR PICTURE PHONE WHICH LETS YOU VIEW THE ENTIRE MEAT TRAY FROM YOUR KITCHEN. YOU PLACE THE ORDER BY SLIPPING A PUNCHED DIALING CARD INTO A MACHINE. USING OTHER PUNCHED CARDS, YOU ORDER YOUR ENTIRE GROCERY NEEDS. YOU PAY THE BILL BY DIALING THE BANK, PUSHING BUTTONS TO INDI-

REGULATOR. AN AMPLIFIER STAGE CAN BE TONE MODULATED AND INCLUDES PATENTED TEMPERATURE COMPENSATION.

Equivalent circuits using conventional construction techniques would be nearly 2-1/2 times as large and would not have the same reliability.

THIS REPRESENTS THE MOST UP-TO-DATE DESIGN AND PRODUCTION APPLIED TO COMMERCIAL PRODUCTS. HERETOFORE, SUCH TECHNIQUES HAVE BEEN LIMITED TO COSTLY AND SPECIALIZED APPLICATIONS SUCH AS COMMUNICATIONS SATELLITES WHERE RELIABILITY AND SMALL SIZE ARE KEY FACTORS.

General Electric's continuing emphasis on product improvement has led to its development of ways to bring these micro-electronic construction processes into commercial hardware...for use not only in government bands but in our equipment which will be purchased by business communications users.

CATE THE AMOUNT AND THE STORE'S CODE NUMBER.

Consider reading the latest best seller by simply dialing the library with the picture phone. The book is projected on a screen in your living room and you turn the pages by pushing buttons.

THE HOUSEWORK IS DONE BY A ROBOT MAID, A SELF-MOVING APPLIANCE WITH A VARIETY OF TELESCOPING ARMS, FINGERS, BRUSHES, SUCTION TUBES, OPTICAL AND AUDIO RECEIVERS BUILT INTO ITS ANATOMY. ON YOUR SIGNAL, THE ROBOT GLIDES FROM THE STORAGE CLOSET AND BEGINS DUSTING, VACUUMING, SCRUBBING AND ALL OF THE OTHER CHORES IN A PROGRAMMED SCHEDULE.

Your car of the future gets its power from a fuel cell. There is little noise and no fumes. For the out-of-town trips you just turn the car over to the electronic driver, and the vehicle straddles, electromagnetically, a cable buried in the middle of the traffic lane.

THE ELECTRICAL INDUSTRY LEADERS EMPHASIZE THAT THE PREDICTIONS ARE NOT FIGMENTS OF FREE-WHEELING IMAGINATION. RATHER, THEY ARE BASED ON RESPONSIBLE REPORTS BY SCIENTISTS, INDUSTRIAL LEADERS AND TECHNICAL EDITORS.

These reports also forecast electrical progress that will benefit business, education and medicine.

TO INSURE THIS PROGRESS, THE ELECTRICAL INDUSTRY SPENDS MORE THAN \$2.5 BILLION ANNUALLY FOR RESEARCH. MANUFACTURERS OF ELECTRICAL MACHINERY AND SUPPLIES EMPLOY ONE-FOURTH OF ALL ENGINEERS AND SCIENTISTS IN RESEARCH AND DEVELOPMENT WORK IN ALL AMERICAN INDUSTRY.

As the electrical industry moves forward, so will America. For history has proven -- electricity powers progress...and at General Electric... *Progress is Our Most Important Product!*

Watch for details on Employees' Store specials for National Electrical Week