

New Slim-Line Scientific Programmables HP-15C, HP-16C



The HP-15C. Your power over numbers.

The most powerful calculator ever built for advanced mathematical calculations.

Hewlett-Packard knows that your time is valuable. Armed with an HP-15C, you can say goodbye to time-consuming ciphering. Some of your most tedious calculations, such as matrix operations, can be performed at the touch of a key. So throw away your eraser and let the HP-15C give you power over numbers.

An Array of Matrix Calculations.

Remember how clumsy it was to perform matrix operations by hand? The HP-15C eliminates this awkward chore by enabling you to store and recall up to five matrices in its memory. You can enter up to a total of 64 elements. Once you designate a result matrix, you can perform such matrix operations as addition, subtraction, multiplication, inversion, transpose, and more. You'll discover that the matrix capability of the HP-15C is invaluable when determining solutions for a system of equations.

Complex Functions—The Real and the Imaginary.

With the HP-15C's Complex Mode, you'll be able to perform calculations with complex numbers as easily as with real numbers. To do this, the HP-15C has two parallel stacks, one for the real part, the other for the imaginary part of a complex number: you perform operations on the contents of both stacks simultaneously.

This capability is the perfect tool in such applications as electrical circuit analysis, as well as surveying, navigation, and numerous others.

Getting to the Root of an Equation.

Instead of plowing through algebraic manipulations by hand, use the SOLVE key to find the real roots of an equation. Simply enter the equation and your estimates of the roots and let SOLVE go to work for you. Even if your estimates fail to bracket the root, the HP-15C will automatically expand the search until the roots are found.

Numerical Integration.

Use the HP-15C's Integrate key to calculate the definite integral of a function without the necessity of complex programs. Merely enter the equation and the limits of integration and the HP-15C will effortlessly determine the answer.

Advanced Programming Capability.

The HP-15C offers 67 storage registers which you can allocate to a maximum of 448 program lines as you need them. And, the HP-15C's editing tools allow you to debug

your program. The Backarrow key enables you to remove program lines when necessary. To add a line, simply position the HP-15C to the specific point in your program and key in the new line. The lines below the new one will be automatically renumbered. You can move forward and backward through a program for line-by-line inspection. Additional HP-15C programming features: 25 program labels, 12 conditional tests and controlled looping.

More Than Shirt-Pocket Portability.

The HP-15C features slim-line portability. And, like all HP calculators, the HP-15C has RPN, an efficient logic system that eliminates the need for "equals" and parenthetical keystrokes. RPN also allows you to view the intermediate results of any calculation. In addition, the HP-15C has an easy-to-read liquid-crystal display and Continuous Memory which saves your data even when the calculator is turned off.



Become a logic master with the HP-16C.

The most powerful calculator ever designed for computer science and digital electronics applications.

As a technical professional, you spend a lot of your time on "grunt work"—converting among number bases, determining the outcome of Boolean operations, or emulating individual processor instructions. Let the HP-16C free you from the tedious paperwork, and instead use your valuable time to keep on top of your profession.

The Key to Number Base Conversions.

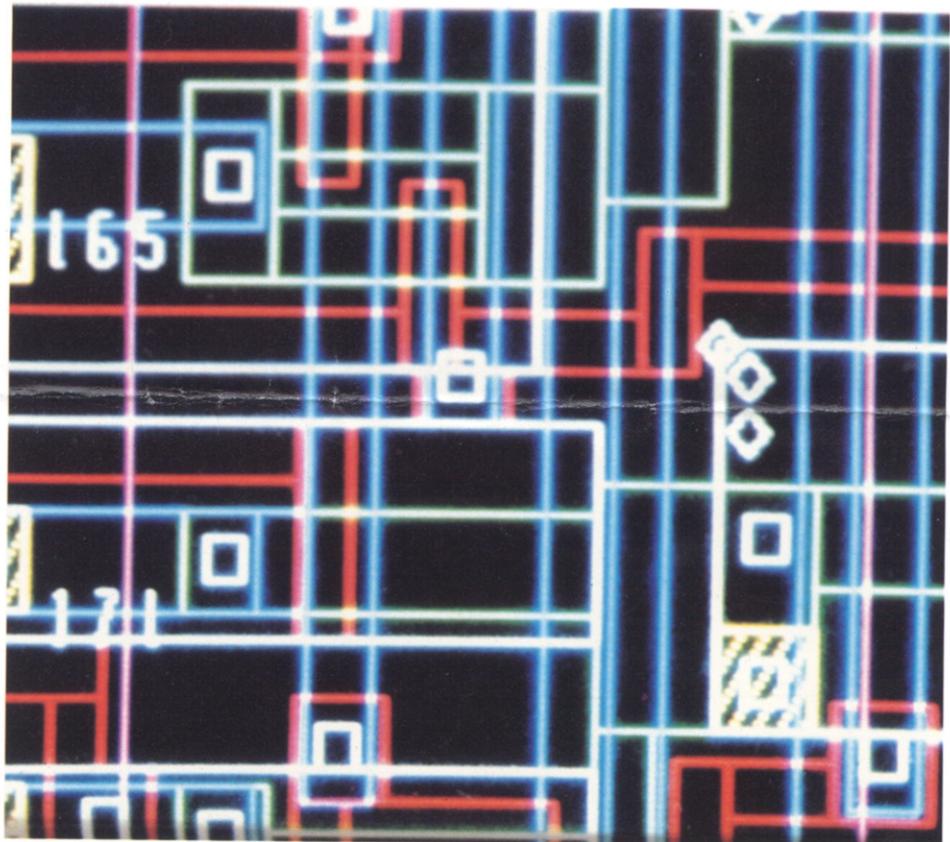
Now you no longer have to memorize number base conversions or work them out by hand. At the press of a key, the HP-16C will convert your number into one of four number bases: binary, octal, decimal, or hexadecimal. You can even perform arithmetic in any one of the four number bases.

Advanced Programmability Simplifies Your Tasks.

With the aid of the HP-16C's programming features, you can perform such tasks as simulating processor instructions. The HP-16C can hold a maximum of 203 program lines or 101 16-bit data registers. Utilize the HP-16C's insert/delete editing tools to debug your programs. You get 16 program labels, 4 levels of subroutines, 6 flags, and 8 conditional branching tests.

Setting Word Size and Complement Mode.

Select any word size up to 64 bits. Eight digits at a time can be displayed and a status indicator will tell



you if there are undisplayed digits to the right or left of the digits currently in the display. You can see the remaining groups of digits through the calculator's scrolling and window functions. For versatile number representation and formation of complements, set 1's and 2's Complements and Unsigned Modes.

Versatile Bit Manipulation.

Take advantage of the HP-16C's shift and rotate bit functions. Rotating bits to the right or left will shift bits out of the word, re-entering them at the opposite end of the word.

Operating with Boolean Logic.

The HP-16C has four Boolean operators. The operators OR, AND, and XOR compare the bits in corresponding positions in two numbers. The NOT operator automatically

inverts the values of bits in the binary quantity.

Keystroke, Easy Bit Testing.

The HP-16C's bit-testing function lets you check the status of any bit position. Using the checksum capability, you can find the sum of the bits in a number.

Use Like an Ordinary Calculator.

The HP-16C can be used for decimal point calculations by simply shifting to Floating-Point Decimal Mode. These calculations are performed using RPN, a logic system that minimizes the necessary number of keystrokes. Continuous Memory lets the HP-16C retain data even if you've turned off the calculator. You'll also discover that the characters in the HP-16C's liquid-crystal display are easy to read, despite bright sunlight.

HP-15C Feature Overview

Size and Weight

12.7 × 8 × 1.5 cm (5 × 3 1/8 × 5/8 in.)
113 g (4 oz)

Scientific Features

Solve, Integrate
Complex functions
Matrix operations:

Dimension
Add, multiply, subtract, inversion, system solutions
Complex transform, Inverse complex transform
Transpose, Transpose multiply
Row norm, Frobenius norm
Determinant, Residual
Trigonometric functions:
Modes, (degrees, radians, grads)
Sin, Sin⁻¹, Cos, Cos⁻¹, Tan, Tan⁻¹*
Hyperbolic and inverses*

Rectangular ↔ polar coordinates
Decimal angle ↔ angle in degrees (hrs)/min/sec
Degrees ↔ radians
Ln x, x^y, Log x, 10^x*

Display Modes

Fixed, scientific, or engineering notation
Automatic over/underflow into scientific notation

Statistical Features

Mean (1- or 2-variable)
Standard deviation (1- or 2-variable)

Summation (n, Σx, Σx², Σy, Σy², Σxy)

Linear regression/estimate

Correlation coefficient

Factorial, Gamma

Permutations and combinations

Random number generator

General Features

+, -, ×, /, y^x, √x, 1/x, x²*

CHS (change sign)

Absolute value*

Integer/fractional part

Round

Percent, Percent change

Storage register arithmetic

Programming Features

Maximum number of program lines: 448

User-definable keys: 5

Alpha program labels: 5

Numeric program labels: 20

Program review with scrolling (single/backstep)

Insert/delete editing, Pause

Conditional and unconditional branching

Levels of subroutines: 7

Conditional tests: 12

Flags: 10

Controlled looping

Indirect control of:

Data storage and recall
Storage register arithmetic
Branching
Controlled looping
Flags
Display format

User mode

Operating Features

RPN logic system:

Automatic four-memory stack
Error recovery (LAST X)
Stack manipulation: roll up and down

Continuous Memory

Liquid-crystal display, Low battery indicator

Long-life disposable batteries

Automatic power off

Diagnostic self-check

Error codes/messages, Status annunciators

Two modes for display separators and decimal points:

European (1.000,00)

U.S. (1,000.00)

Maximum number of data storage registers: 67

Maximum number of digits displayed: 10

Number of digits used in computation: 10

One-year limited warranty

Documentation

HP-15C Owner's Handbook

HP-15C Advanced Functions Handbook (sold separately, available Winter 1982)

Rotate right, left

Rotate right, left through carry

Multiple rotation

Left justify

Mask right, left

Bit set, clear, Bit test, checksum

Boolean Operators

NOT, OR, XOR, AND

Programming Features

Maximum number of program lines: 203

Automatic memory allocation

Alpha program labels: 6

Numeric program labels: 10

Program review with scrolling (single/backstep)

Insert/delete editing, Pause

Conditional and unconditional branching

Levels of subroutines: 4

Conditional tests: 8

Flags: 6

Controlled looping

Indirect control of:

Data storage and recall

Branching

Number of data storage registers:

4-bit: 406 32-bit: 50

8-bit: 203 64-bit: 25

16-bit: 101

Operating Features

RPN logic system:

Automatic four-memory stack

Error recovery (LAST X)

Stack manipulation: roll up and down

Continuous Memory

Liquid-crystal display, Low battery indicator

Long-life disposable batteries

Automatic power off

Diagnostic self-check

Error codes/messages, Status annunciators

Two modes for display separators and decimal points†:

European (1.000,00)

U.S. (1,000.00)

Maximum number of digits displayed†: 10

Number of digits used in computation: 10

One-year limited warranty

Documentation

HP-16C Owner's Handbook

HP-16C Feature Overview

Size and Weight

12.7 × 8 × 1.5 cm (5 × 3 1/8 × 5/8 in.)

113 g (4 oz)

Number Base Modes

Hexadecimal, Decimal, Octal, Binary

Floating-Point Decimal

Display Control

Window, Word size

Scroll left, right

Complement Modes

1's, 2's, Unsigned

General Features

+, -, ×, /, 1/x, √x,

CHS (change sign), remainder

Absolute value

Double ×, /, remainder

Bit Manipulation

Shift right, left

Arithmetic shift right

* Real or Complex inputs.

† In Floating-Point Decimal Mode

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