

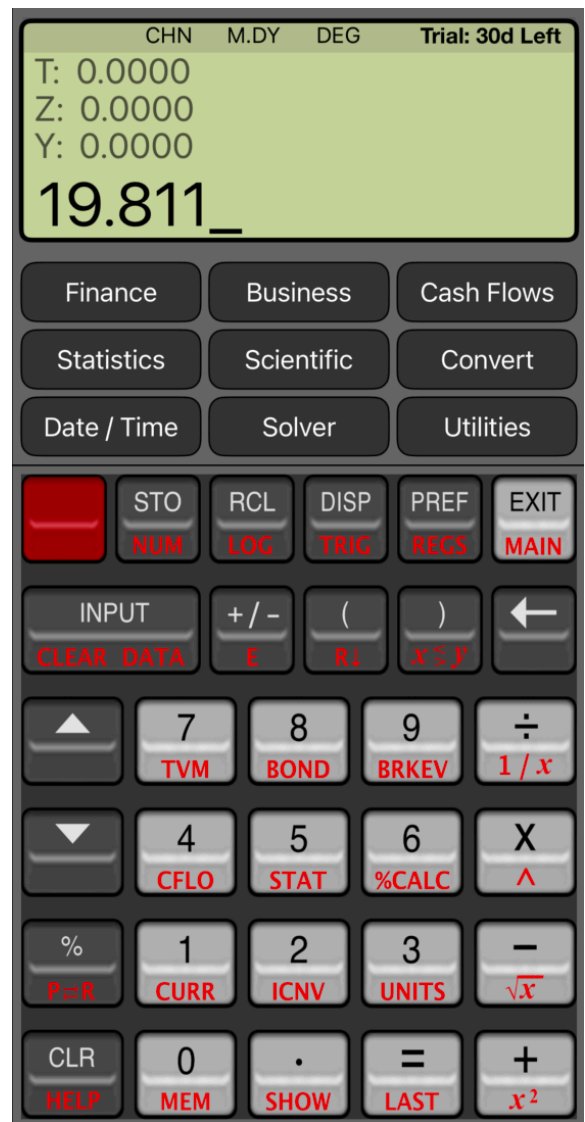
General Overview

The RLM-19BX calculator application is an extensive set of tools and enhancements inspired in the real HP-19BII calculator series made by Hewlett Packard Corp.

The first “HP-19BII” calculator was designed and introduced by Hewlett Packard in 1988 and it was a pocket business calculator with algebraic and RPN logic. It was the most powerful business calculator at that time, in a folding case with alphanumeric keyboard and menus that contains most of its functions.



Old Skin



New Skin

Since the calculator is inspired in the real **HP-19BII**, we strongly recommend that you obtain the real calculator **Owner's Manual** available in internet and review all the help topics selecting the “**Help Documents**” from the “**Utilities**” menu.

How the calculator is organised

Everything the calculator can do is reached in one of three ways: the keyboard keys, the nine buttons of the Main menu, or the gold (shift) key that turns the number keys and several others into shortcuts. A menu opens as a worksheet over the keyboard; “**EXIT**” goes back one level and “**MAIN**” returns to the Main menu from anywhere.

The Main Menu



Finance, **Business**, **Cash Flows**, **Statistics**, **Scientific**, **Convert** and **Utilities** open a pop-up list of worksheets. **Date / Time** and **Solver** open their worksheet directly.

Finance

Menu	What it does
Account Balance	Balance of a credit-line account at any date, from a dated list of cash movements and the rates that apply.
Loan Amortization	Complete amortization schedule: principal and interest paid by one payment or by a group of payments.
Bond Price & Yield	Price and yield of annual or semi-annual coupon bonds, on an actual or a 360-day calendar.
Black-Scholes Options	CALL and PUT option prices and the five Greeks, by the Black-Scholes model.
Depreciation	Depreciation schedules: SL, SOYD, DB, DBX and MACRS.
Interest Conversion	Converts Nominal and Effective annual rates, three cases side by side.
Time Value of Money	Loans, savings, leases and annuities: five linked variables, enter four and solve the fifth.

Business

Menu	What it does
Bill-Tip-Split	Tip on a restaurant bill and the share of each person.
Break-Even	Price, unit cost, quantity, fixed costs and profit.
Currency Exchange	Converts an amount between two currencies; the rate is typed or fetched from the internet.
Inventory Turn Over	Relates opening stock, closing stock, cost of goods sold and the turnover.
Percents & Margins	Three independent worksheets, for everyday percentage problems.
Return on Investment	Revenue, profit margin and investment: enter three, get the fourth.

Cash Flows

Menu	What it does
Equal Periods Cash Flows	Values a stream of one amount per period (NPV, IRR and related answers) from a named list.
Unequal Periods Cash Flows	The same for amounts that fall on dates of their own choosing.

Statistics

Menu	What it does
(X,N)-List Statistics	One or two Variable Statistics for a list of values and their frequencies and Curve Fitting through the lists.
(X,Y)-List Statistics	Twenty-two statistics for a list of paired readings, and Curve Fitting with six curve shapes and estimates of X or Y.
Probability Distributions	Sixteen probability distributions, all build in the same way. Calculate probability density, lower or upper tail, expected value and most probable value.

Scientific

Menu	What it does
Angles & Polar	Changes the unit of an angle and converts between rectangular and polar coordinates.
Complex Numbers	A stack of complex numbers with arithmetic, powers, angle, dot product and an F(z) menu of functions.
Combinations & Permutations	Number of combinations and permutations and uniform [0...1] pseudo random number generator.
Logarithms	Natural, base 10, 2, 3 and free-base logarithms and their anti-logarithms.
Number Alteration	Sign, integer and fractional parts, rounding, truncation, factorial and division with remainder.
Quadratic Equation	Solves $A \cdot x^2 + B \cdot x + C = 0$: give any three of the five values and the other two follow.
> Triangle Solution Plane Triangle Spherical Triangle	Plane triangles, and spherical triangles with a given radius: any three measurements give the rest, the perimeter and the area.
Trigonometry & Hyperbolic	Sine, cosine, tangent, their inverses and the hyperbolic set; angles in five units; π and its fractions.
Universal Constants	Table of 354 CODATA 2018 physical constants; a tap sends the value to the display.
3D Vectors	A stack of vectors with sum, difference, length, angle, dot and cross products.

Convert

Menu	What it does
Angles & Polar	Same as in Scientific menu.
Currencies Exchange	Same as in Business menu.
Interest Conversion	Same as in Finance menu.
Units Conversion	Physical units conversion in twelve categories that are completely customizable.

Date / Time and Solver

Menu	What it does
Date / Time	Days between two dates, a date a number of days before or after another, elapsed time, $\Delta 360$ and $\Delta 365$ day counts, Today and Now, and $\rightarrow$ HMS / $\rightarrow$ HR.
Solver	Write an equation once, name it, give values to every letter but one and the calculator finds the last.

Utilities

Menu	What it does
General Settings	Colors, calculation logic, number and date formats, angle unit, key feel and sound; fourteen settings with a Default button.
Storage Registers	The ten registers R_0 to R_9 : store, recall and do arithmetic on them.
Memory Content	Shows a view to see all memory content with backup and restore all of it.
Help Documents	Shows the help view to learn by example about all the calculator's menus.
Editors >	Shows a submenu to quickly open any of the editors for the different data types required in menus.
Account Balance List	Create or Edit an Account Balance list.
Date-Cash Flow List	Create or Edit an Unequal Periods Cash Flow list.
(X,N)-List	Create or Edit a value-frequency list for Statistics and Equal Periods Cash Flow .
(X,Y)-List	Create or Edit a paired X,Y values list for Statistics
Solver Equation	Create or edit arbitrary equations for the Solver .
Units Conversions	Edit the units database adding, removing or editing categories and Units Conversion .

The keyboard

The shift key at the left of the number pad shifts the next key: its lower label, written under the key, is the function that runs. Most lower labels are shortcuts to a worksheet:

Shift + key	Worksheet or function
NUM	Number Alteration
LOG	Logarithms
TRIG	Trigonometry & Hyperbolic
REGS	Storage Registers
MAIN	Main menu, from anywhere
TVM	Time Value of Money
BOND	Bonds Price & Yield
BRKEV	Break Even
CFLO	Equal Periods Cash Flows
STAT	(X,N) Statistics
%CALC	Percents Calculations
P$\rightleftharpoons$R	Angles & Polar
CURR	Currency Exchange
ICNV	Interest Conversion
UNITS	Units Conversion
HELP	HELP Documents
MEM	Memory Content

Other lower labels are calculator functions:

Shift + key	Function
CLEAR DATA	Clears the stack, the pending calculation and the data of the current worksheet.
E	Ends the mantissa to type the power-of-10 exponent.
R↓	Scrolls the history stack down.
x↔y	Swaps X and Y.
1/x √x x² ^	Reciprocal, square root, square, and Y to the power X.
SHOW	Shows the full precision of the displayed number.
LAST	Retrieves the last number.

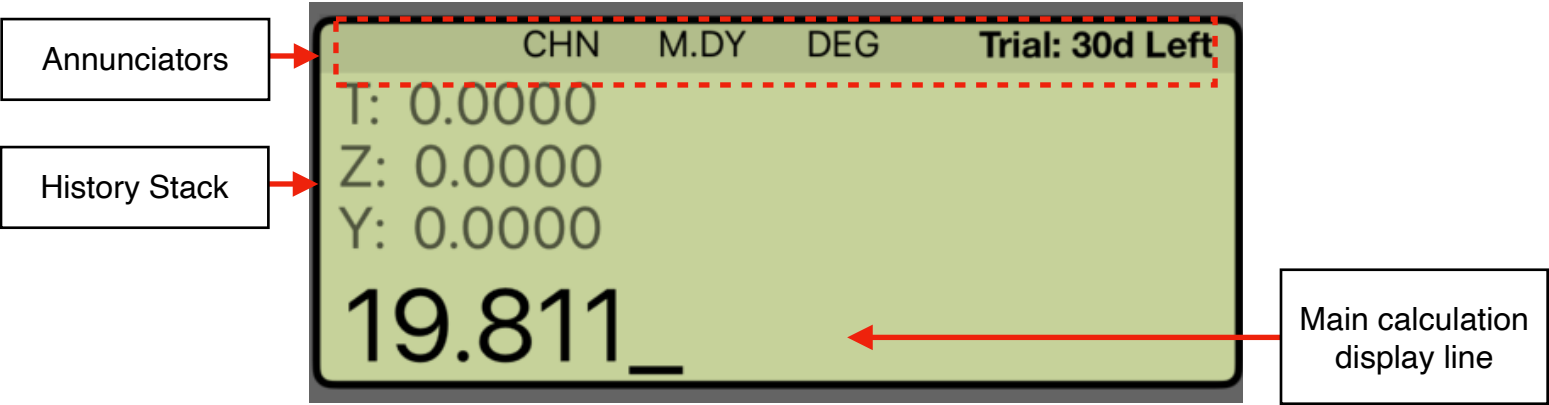
Without the shift key the keys are as expected: the digits and the four operations, INPUT or = to finish a calculation, +/- to change sign, (and) to group, ← to erase, CLR to clear the display, and ▲ ▼ to scroll the history stack. STO and RCL followed by a register digit store and recall a number; followed by ÷ × − + or ^ they do arithmetic on the register. % finds a percentage or adds and subtracts one. DISP opens the display settings, PREF the General Settings and EXIT leaves the current worksheet.

Worksheet buttons

The worksheets share one language of colors. Type a number and press a button to store it, or press a button with no number to calculate it.

Colour	Meaning
Blue	A value you stored.
Green	A blue value the worksheet calculated.
Black	A parameter or option, such as the N° of payments per year.
Red	A calculated value, storing nothing.
Yellow	Opens a related list, editor or worksheet.

Calculator display

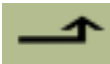


Annunciators: show the current status of the calculator: the calculation logic (CHN chain, ALG algebraic, RPN reverse Polish), the date order (M.DY, D.MY or Y.MD), the angle unit (DEG in the picture) and the Trial period left.

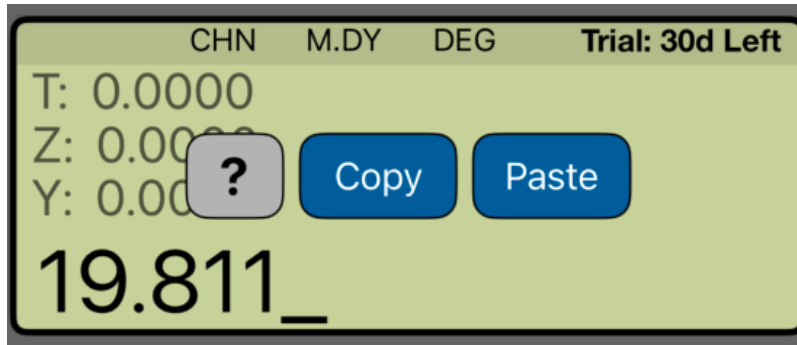
History stack area: shows the values of the stack registers T, Z and Y, or a relevant message depending on the calculation performed.

Main calculation line: shows the number being entered, a calculation in progress or a result.

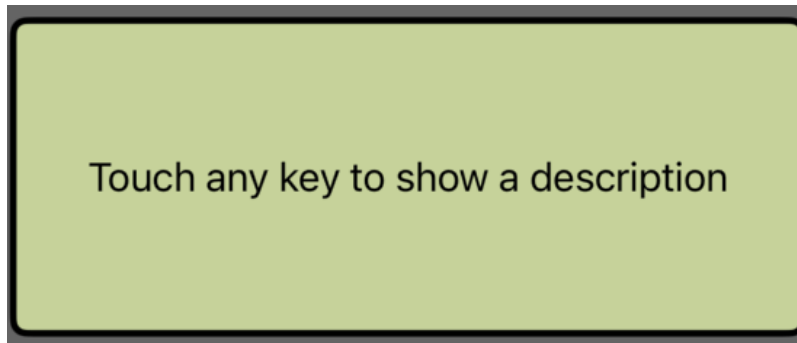
Annunciators: Show the current status of the calculators:

Display Annunciators	
	When shown, the shift functions are active in the keyboard.
ALG CHN RPN	Algebraic operation logic ($1 + 2 \times 3 = 7$). Chain operation logic ($1 + 2 \times 3 = 9$). Reverse-Polish-Notation operation logic.
M.DY D.MY Y.MD	Date format set to Month-Day-Year (MM.DDYYYY). Date format set to Day-Month-Year (DD.MMYYYY). Date format set to Year-Month-Day (YYYY.MMDD).
DEG RAD GRD DMS ↗%	Current angles unit set to Decimal Degrees. Current angles unit set to Radians. Current angles unit set to Gradians. Current angles unit set to Degrees-Minutes-Seconds. Current angles unit set to Slope Percent.
Trial:	Shows the number of free trial days left. It is not shown if the app was paid.

Touching the display at any time brings up the Help-Copy-Paste buttons to the front. There you can “Copy” the displayed number or “Paste” previously copied one.



The “?” button turn on the quick help hint for a short description of any keyboard or menu button.



For further information and support go to...

“www.rlmttools.com”

or send an email to...

“support@rlmttools.com”

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