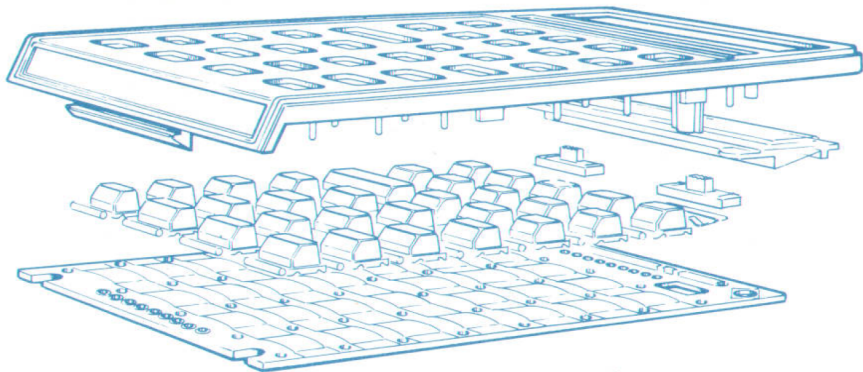


C47/R47 Application note 018:

Keyboard Functions and Settings



HP Woodstock keyboard design (HP Journal – November 1975)

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Summary

This chapter describes the keyboard logic and configuration mechanisms. It explains how key behaviour is defined across modes and how the available interaction mechanisms can be combined to adapt the keyboard for individual usage.

The keyboard follows some HP conventions and extends them through multiple functions, soft keys, and context-dependent behaviour. Shift keys, long press and double press actions provide alternative access paths to functions for ease of use and to reduce keystroke counts.

Key assignments are supported at several levels, including physical keys, soft keys, and menus. This extends the traditional USER mode and custom menu concepts, allowing functions, programs, variables, menus, and characters to be bound to keys as required. Limited Normal-mode key customisation (as opposed to USER-mode key customisation) is also supported for frequently used functions.

Revision	Date	Description
1.0	2026-01-23	First publication.

Section 1: Overview

This document's goal is not to describe each individual key function but rather to explain the keyboard logic and the different mechanisms implemented on the C47 and R47, and their configuration, allowing each user to set up the keyboard as needed.

The keyboard is the main way to interact with the calculator through the display. The C47 and R47 keyboard layouts and functions have been inspired by several HP calculators (in particular the HP-42S, HP-41C, or the HP-34C) and provide three functions per key and support many options and customisation possibilities.

The C47 keyboard layout leverages the HP-42S layout with identical primary function keys and many identical f-shifted keys to allow reusing the DM42/DM42n hardware with a simple overlay. As there is only one shift key, the g-shifted functions are accessed by pressing the shift key twice.

The R47 keyboard layout is an evolution of the C47 layout with the HP-42S layout compatibility constraint removed, thus implementing two shift keys, a yellow f-shift and a blue g-shift, as traditional HP calculators.

Both the C47 and the R47 support the HP-42S-style soft keys in addition to the standard keys. The soft keys are associated with soft menus displayed at the bottom part of the screen and each soft key can have three functions: primary, f-shifted, and g-shifted. The primary functions are displayed on the bottom line of the menu, just above the soft keys. The f-shifted functions are displayed on the line above the primary functions, and the g-shifted functions on the line above the f-shifted functions.

In addition to the standard functions accessed by directly pressing the key or prefixing it with a shift key, the C47 and R47 support a long press or double press mechanism which can replace the shift keys or provide access to different functions as described in the related sections below.

The C47 and R47 support user key assignment similar to the one introduced on the HP-41C, allowing a fully customisable keyboard in USER mode. They also leverage and extend the HP-42S custom menu, allowing the creation of new user custom menus or the customisation of some system menus.

And finally, both calculators support the customisation of one key in Normal mode (out of USER mode): the C47 $\Sigma+$ key and the R47 Blank key.

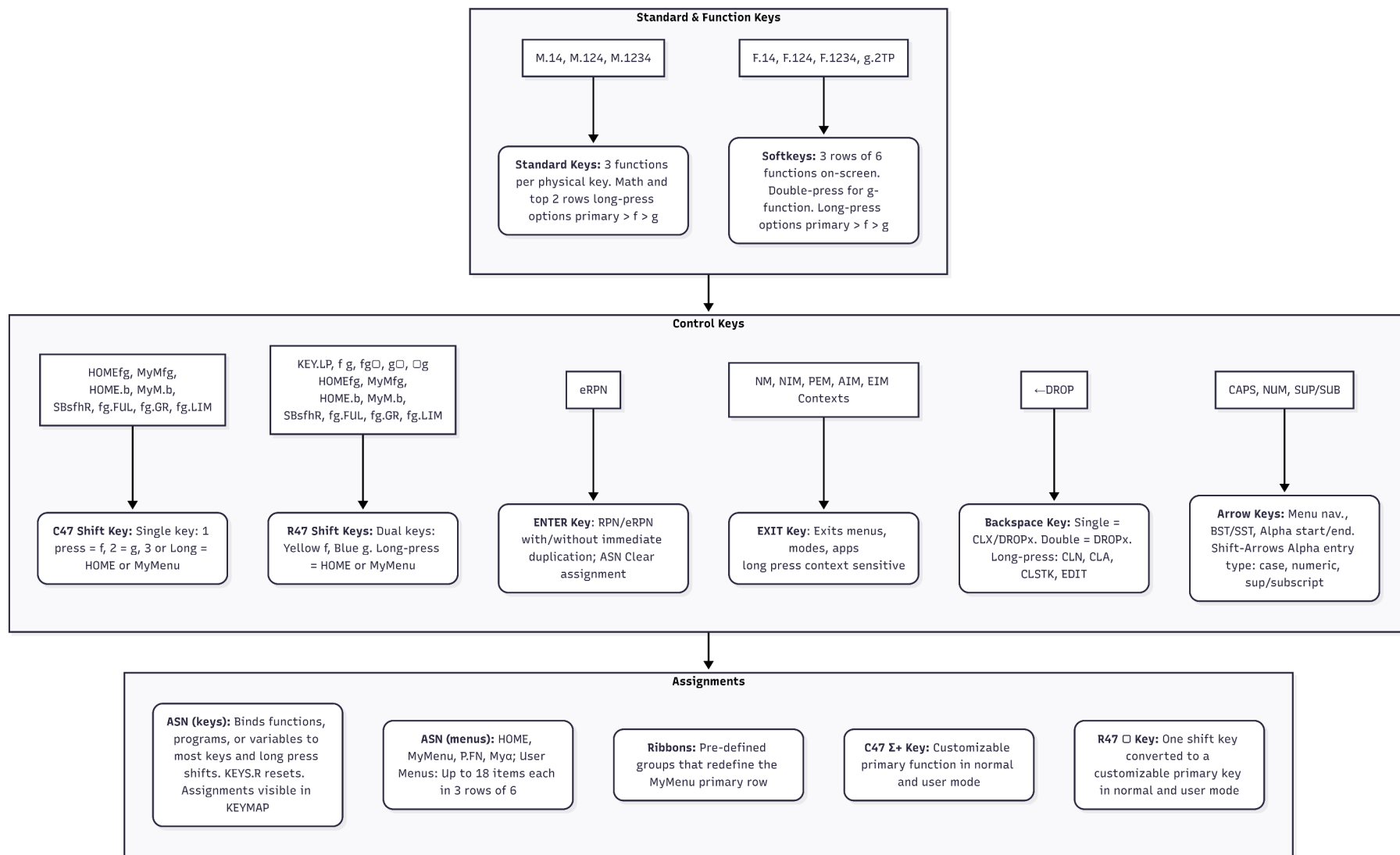


Figure 1: Key operation overview diagram

Section 2: Standard Keys functions and settings

The ENTER key

The ENTER key is the main characteristic of an RPN calculator; its function is to close entries and push entries onto the stack.

Traditionally, on HP calculators, ENTER does both: when entering a number, pressing ENTER will close the number entry in the X-register and duplicate it in the Y-register, pushing the content of the previous stack registers above the Y-register, ready for a new number entry in the X-register.

Lately, HP introduced a different ENTER working model where the two functions are separated: pressing ENTER when entering a number just closes the entry and places the number in the X-register, pushing the content of the previous stack registers above the X-register; then the duplication of the X-register is done when pressing ENTER out of entry mode. This is called Entry RPN or eRPN and is the mode selected by default on the C47 and R47.

The Backspace key (←)

The backspace key is used to clear digits during number entry (or characters during string entry or program steps in program entry mode), and when not in entry mode it clears the X-register as on traditional HP RPN calculators.

Change backspace to drop the X-register as on HP RPL calculators, by setting the flag **←DROP** in the C47 **MODE > CFLG** menu or the R47 **PREF > CFLG** menu.

Note: when **←DROP** is cleared, a double press on the backspace key will drop the X-register, but when **←DROP** is set pressing twice on the backspace key will drop the X-register twice.

Key double press

A quick² double press on some keys will lead to specific actions:

- double press on the backspace key (←) will drop the X-register by default (**←DROP** flag cleared in the **CFLG** menu)
- double press on a soft key will execute the associated g-shifted function by default (**g.2TP** flag set in the C47 **MODE** menu or the R47 **PREF** menu)

Note: This double press is blocked for the navigation keys in editing menus such as the ALPHA menu, where pressing twice an arrow key just executes it twice. This is indicated by a small stroke in the top right angle of the soft key primary label.

² The delay between two key press to get them recognised as a double press can vary but is generally below 150ms. When a function key is pressed the primary function is only executed 150ms after releasing the function key, unless a second press occurs on the same key during this delay in which case the g-shifted function is executed. For the backspace key the primary function is always executed when the key is released, and if it is pressed a second time within 150ms and **←DROP** is cleared then **DROPx** is executed.

Key long press

Key long press was introduced on the HP-41C as a way to display the function name associated to a key, with a possibility to not execute it by keeping the key pressed until the function name is replaced by NULL. This is particularly useful in USER mode when a function assigned to a key is different from the standard function printed on the key or on the bezel.

On the C47/R47, this has been extended so that long press on some keys can be used as a shortcut to access shifted functions or additional functions: during a long press, a sequence of functions is displayed on the top left of the screen. Releasing the key will execute the function displayed:

Key long press EXIT & BKSPC

- **Long press on EXIT** will show the following context sensitive sequences

	R47	C47
Normal mode (NM)	EXIT – SNAP – CLRMOD – NOP	EXIT – MyMenu – CLRMOD – NOP
Number entry (NIM)	EXIT – SNAP – CLRMOD – NOP	EXIT – MyMenu – CLRMOD – NOP
Program Edit (PEM)	EXIT – P.FN – SNAP – CLRMOD – NOP	EXIT – P.FN – MyMenu – CLRMOD – NOP
Alpha Edit (AIM)	EXIT – MyAlpha – CLRMOD – NOP	EXIT – MyAlpha – CLRMOD – NOP
Equation Edit (EIM)	EXIT – MyAlpha – CLRMOD – NOP	EXIT – MyAlpha – CLRMOD – NOP

- **Long press on the backspace key (←)** will show the following context-sensitive sequences: providing a shortcut access to the various clear options (CLN), (CLA), clear stack function (CLSTK) and the EDIT function.

	R47/C47	Detail
Normal mode (NM)	CLX* – CLSTK – EDIT – NOP	CLSTK: Clear stack←
Number entry (NIM)	BKSPC – CLN – NOP	CLN: Clear the numeric input buffer
Program Edit (PEM)	BKSPC – EDIT – NOP	EDIT: Edit the current text
Alpha Edit (AIM)	BKSPC – CLA – EDIT – NOP	CLA: Clear the alpha input buffer
Equation Edit (EIM)	BKSPC – CLA – EDIT – NOP	CLA: Clear the equation (alpha) input buffer

*CLX is replaced by DROPx when the flag ←DROP is set

Key long press Soft keys

Normal mode (NM) and Numeric Input Mode (NIM):

- Long press on a soft key; the key will depend on the settings: F.14, F.124 and F.1234³:
 - F.14 set: the sequence will be: *primary_function* – NOP

³ In the C47 MODE menu or the R47 PREF menu.

- **F.124** set: the sequence will be: *primary_function* – *f-shifted function* – NOP
(this is the default setting)
- **F.1234** set: the sequence will be: *primary_function* – *f-shifted function* – *g-shifted function* – NOP

Key long press - Normal Mode (NM) and Numeric Input Mode (NIM)

- Long press on a math key (the two rows below the function keys, plus $x \leftrightarrow y$ and $+/-$ on the C47 or $x \leftrightarrow y$, CHS and XEQ on the R47) will depend on the settings **M.14**, **M.124** and **M.1234**³:
 - **M.14** set: the sequence will be: *primary_function* – NOP
(with two exceptions⁴: the XEQ sequence is: XEQ – α – NOP, the DRG sequence is: DRG – USER – NOP)
 - **M.124** set: the sequence will be: *primary_function* – *f-shifted function* – NOP
 - **M.1234** set: the sequence will be: *primary_function* – *f-shifted function* – *g-shifted function* – NOP
(this is the default setting)
- Long press on **ENTER** in Normal mode NM and number entry NIM mode, the usual **M.14**, **M.124** and **M.1234**, will determine the sequence, see the long press tables above.
- Long press on a number entry key (0-9 digits, . (dot), E or EEX) has no effect
- Long press on an operator key, an arrow key or the R/S key will just lead to NOP
- Long press on a Shift key is described in the next section

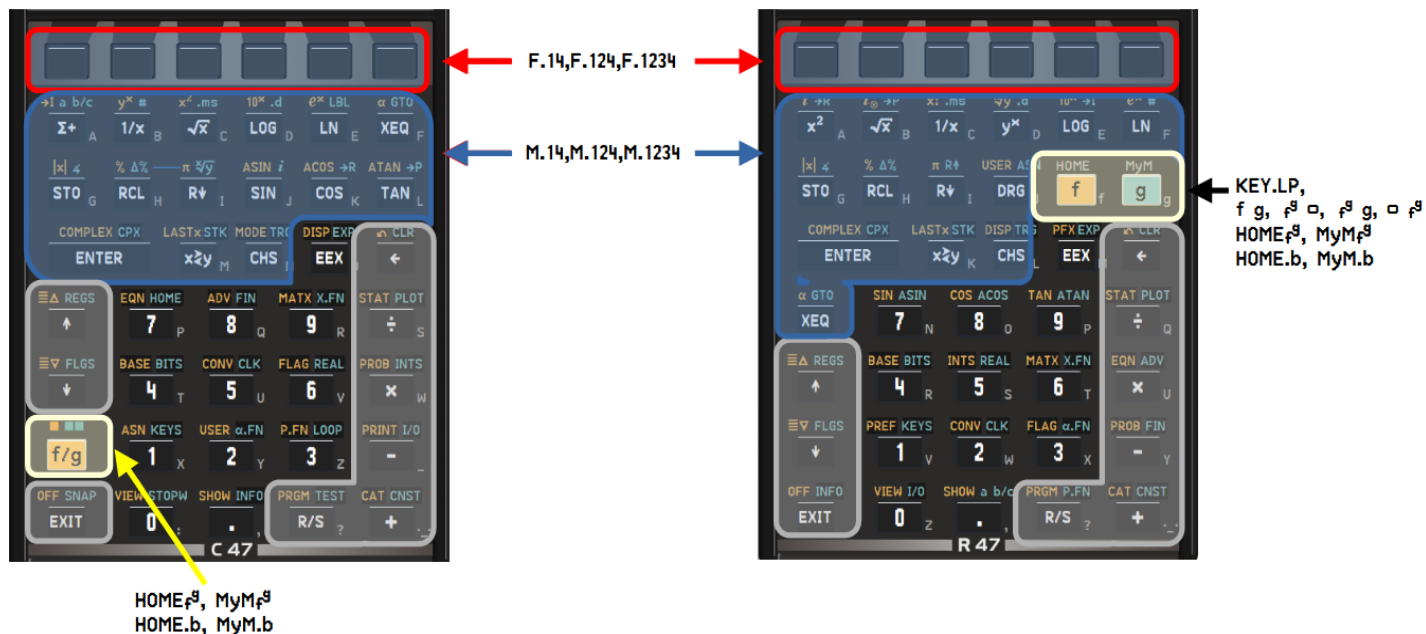


Figure 2: Keys with long press functions and the settings controlling their behaviour.

⁴ **M.14** is similar to the HP-41C long press, and these two exceptions provide quick access to **USER** and **ALPHA** which are primary keys on the HP-41C.

Key long press - Alpha Input Mode (AIM) and Equation Input Mode (EIM)

- Long press on **ENTER** within AIM or EIM modes will produce the sequence **EDIT – CR – NOP**.
CR produces the character ↵ used with AVIEW, to add a TI comment.
- Long press on a key with a white alpha letter A-Z also some punctuation, will initiate a single delay and cause the key-top label to be entered into the string, eg. pressing a digit will first produce the white alpha label, then time-out to the actual digit.

This shortcut to get to the digits and operators while entering formulas in EIM is very useful.
- Long press on a Shift key is described in the next section

The Shift keys

C47 yellow shift key

As with the HP-42S, the C47 has only one yellow shift key. On the C47, it acts as a combined f/g key: a single press on the yellow shift key provides access to the f-shifted functions, and a double press provides access to the g-shifted functions.

The C47 shift key also provides access to a third function, either with a triple press or with the long press sequence **f – g – <function>**: by default it is the **HOME** menu, but it can be configured to be **MyMenu** or can be disabled, depending on the settings of **HOME_f**, **MyM_f**, **HOME.b** and **MyM.b** in the C47 **MODE** menu:

	Normal mode		AIM
	HOME.b or MyM.b set	HOME.b cleared MyM.b cleared	
	HOME _f set MyM _f set HOME _f cleared MyM _f cleared		
	HOME*	HOME	ALPHA*
	MyMenu	blank	Myα
	None	None	None

* Default

R47 yellow and blue shift keys

The R47 has two shift keys, a yellow f key providing access to the f-shifted functions, and a blue g key providing access to the g-shifted functions.

The R47 shift keys can also provide access to a third function with a long press: by default it is the **HOME** menu for the yellow shift key, and **MyMenu** for the blue shift key (corresponding the **CUST** name on the bezel). The long press access is controlled by **KEY.LP** in the R47 **PREF** menu.

The R47 shift keys can also be configured in a different way than the standard f and g shift keys: one key can be configured as the C47 f/g shift key, and another key can be configured as a blank key fully configurable (see details in the related section). The R47 shift keys configuration is controlled by 4 options in the **KEYS** menu according to the following table:

KEYS option	Normal mode				AIM			
	Yellow key	Yellow Key long press	Blue key	Blue Key long press	Yellow key	Yellow Key long press	Blue key	Blue Key long press
f g	f	HOME ⁽¹⁾	g	MyMenu ⁽¹⁾⁽³⁾ (or blank)	f	ALPHA ⁽¹⁾	g	Myα ⁽¹⁾
f^g □	f/g	HOME ⁽⁴⁾	Blank key ⁽²⁾ (default no item)	None	f/g	ALPHA ⁽⁴⁾	Blank key ⁽²⁾ (default no item)	None
f^g g	f/g	HOME ⁽⁴⁾	g	MyMenu ⁽³⁾ (or blank)	f/g	ALPHA ⁽⁴⁾	g	Myα
□ f^g	Blank key ⁽²⁾ (default no item)	None	f/g	MyMenu ⁽³⁾⁽⁵⁾ (or blank)	Blank key ⁽²⁾ (default no item)	None	f/g	Myα ⁽⁵⁾

⁽¹⁾ Long Press is disabled if **KEY.LP** is cleared in **PREF**.

⁽²⁾ The Blank key in normal mode is defined by the **□ KEY** menu in **KEYS**.

⁽³⁾ If both **HOME.b** and **MyM.b** are cleared **MyMenu** is replaced by the blank base menu

⁽⁴⁾ **HOME** and **ALPHA** are the defaults for long press **f^g** but this depends on the settings of **HOME.f^g**, **MyM.f^g**, **HOME.b** and **MyM.b** (see the C47 **f^g long press** table)

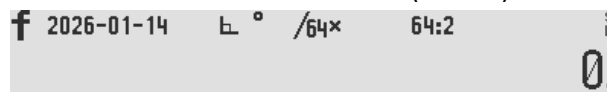
⁽⁵⁾ When **f^g** is defined on the blue shift key the default setting matches the key location : **MyMenu** and **Myα** on the blue shift key

Shift status display

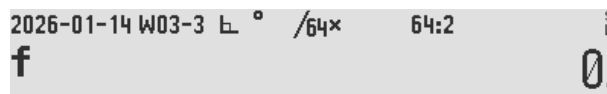
The shift status determines the function executed by the next key press and is indicated on the top left of the display and depends on the status of the flag **SBshfR**:

- SBshfR** cleared (default):

- f** or **g** letter on the left of the status bar when the time (**SBtime**) and the week of year (**SBwoy**) display is off:

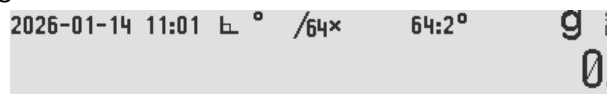


- f** or **g** letter on the left of the T-register display line⁵, below the status bar, when the time (**SBtime**) or the week of year (**SBwoy**) display is on:



- SBshfR** set:

- f** or **g** letter on the right of the status bar :



The shift status can also be reflected in the display of the current menu where either a line is drawn under the **f**- or the **g**- menu row when **f** or **g** is pressed, or the corresponding line is highlighted.

This is controlled by the flags **fg.LIM**, **fg.FULL** and **fg.GR**:

	fg.FULL set	fg.LIM set	fg.FULL cleared fg.LIM cleared
fg.GR cleared	Show all f - and g -lines (default)	Show lines for non empty-rows only	Don't show f - and g -lines
fg.GR set	Highlight all f - and g -menu rows	Highlight non empty-rows only	Don't highlight f - or g -menu rows

⁵ A smaller **f** or **g** is displayed if the T-line content doesn't allow for the full size **f** or **g**

Examples:

- **fg.GR** cleared, **fg.FULL** set and **f-shift** pressed :

SEED					
RAN#	RANI#	C _{yx}	P _{yx}	x!	DISTR

- **fg.GR** cleared, **fg.FULL** set and **g-shift** pressed :

SEED					
RAN#	RANI#	C _{yx}	P _{yx}	x!	DISTR

- **fg.GR** set, **fg.LIM** set and **f-shift** pressed :

SEED					
RAN#	RANI#	C _{yx}	P _{yx}	x!	DISTR

- **fg.GR** set, **fg.LIM** set and **g-shift** pressed :

SEED					
RAN#	RANI#	C _{yx}	P _{yx}	x!	DISTR

The Up and Down arrow keys

The Up (↑) and Down (↓) arrows have different functions depending on the context :

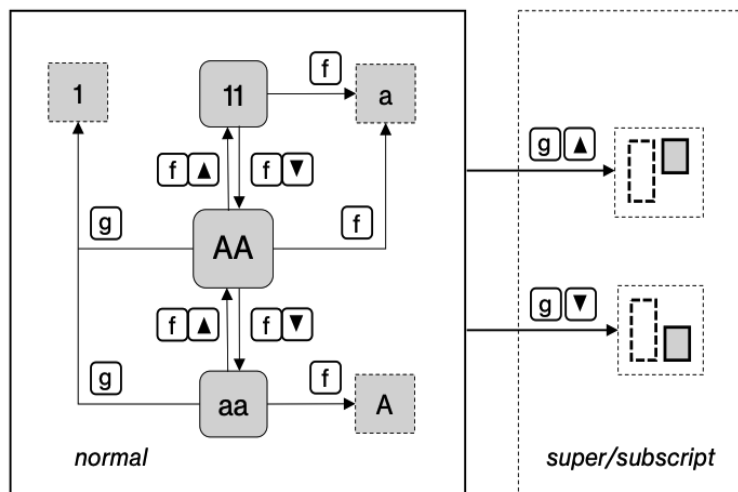
- When a multi-page menu or catalog is open, users navigate up or down by one page (in menus) or one line (in catalogs).
- in Alpha entry they move to the beginning (↑) or end (↓) of the current string
- in normal mode ↑ does BST and ↓ does SST

The Shift Up (⇧↑) and Shift Down (⇧↓) arrows have different functions depending on the context :

- When a catalog is in Alpha Search Mode (ASM) or during alpha input, users select the alpha entry type (uppercase, lowercase, or numeric) as shown in the figure below
- otherwise ⇧↑ does BST and ⇧↓ does SST

Alpha entry mode selection with the shift, up and down keys

In addition to the flags **CAPS**, **NUM** and SUP_{SUB} available in the **ALPHA** and **TamAlpha** menus, the selection of Upper case, Lower case, Numeric, Superscript or Subscript alpha entry mode can be done by a combination of the f and g shift keys and the Up and Down arrows as described in the following figure where solid boxes indicate a persistent mode and dotted boxes indicate a transient mode applicable to the next character only:



The current Alpha entry mode is indicated in the status bar by a single letter :

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A Upper case	^A Upper case superscript	_A Upper case subscript
a Lower case	^a Lower case superscript	_a Lower case subscript
N Numeric	^N Numeric superscript	_N Numeric subscript

The Greek letters and International characters catalogs in the **ALPHA** and **TamAlpha** menus will follow the Upper/Lower case status :

- Upper case : **A...Ω** and **αINTL**
- Lower case : **α...ω** and **αintl**

When the Greek letters and International characters catalogs are opened, the Up and Down keys are used for both navigating in the catalogs and changing the case :

- **A...Ω** or **αINTL** opened :
 - Up moves to next catalog line while staying in upper case
 - Down changes to the lower case catalog (**α...ω** or **αintl**)
- **α...ω** or **αintl** opened :
 - Up changes to the upper case catalog (**A...Ω** or **αINTL**)
 - Down moves to previous catalog line while staying in lower case

Section 3: Key assignments

The USER mode with the capability of assigning functions or programs to specific keys has been introduced on the HP-41C. The HP-42S replaced this USER mode by a CUSTOM menu where the soft keys could be assigned specific functions, programs, or variables.

The C47 and R47 support and extend both ways of providing user keys. This is done via the ASN (ASSIGN) function as described below, and allows assignment of functions, programs, variables as well as menus or characters to specific keys in USER mode, to some of the system menus, and to user-created menus.

Note: ASN is not programmable, so assignments cannot be done programmatically.

Key assignments

To assign a specific item (function, program, variable, menu or character) to a key the generic mechanism is:

ASN *<item to assign>* *<destination key>*

ASN: on **f-1** for the C47 and **g-DRG** for the R47. **ASN** is not available on a key during alpha entry, it is in the **ALPHA** menu for alpha character assignments. **ASN** is also in the **KEYS** menu.

- *<item to assign>*: can be selected directly on the keyboard (via a key or a soft key), selected from a menu, or by entering its name in alpha. Pressing a menu on the keyboard will actually open the menu. To assign a menu name, it must be selected from **CAT > MENUS**. Similarly, to assign a program or variable, it must be selected from **CAT > PROGS** or **CAT > VARS**. Characters can only be assigned in Alpha mode by selecting them on the keyboard or in one of the alpha menus. Pressing **ENTER** at this stage will assign **NULL** to the destination key, restoring its default function.
- *<destination key>*: press the key where the item should be assigned. This can be a primary key, an f-shifted key or a g-shifted key. To assign an item to a shift key long press function, just long press the shift key.

The existing key assignments can be visualised in **KEYS > KEYMAP** on the different keyboard planes (unshifted, f-shift, g-shift, alpha unshifted, alpha f-shift, alpha g-shift). Long press assignments are visible on the g-shift plane.

Once the item is assigned to a key, pressing this key in **USER** mode will execute the item:

- function: the function will be executed
- program: while only the program name is visible in **KEYMAP** or in a soft menu, the action executed is **XEQ 'program'**
- variable: while only the variable name is visible in **KEYMAP** or in a soft menu, the action executed is **RCL 'variable'**
- menu: the assigned menu will be opened
- character: in alpha input mode the character will be inserted at the cursor location

Some specific function keys which are used in the assignment sequence need to be selected by their name to be assigned to a new location or as a destination key: **ENTER**, **USER**, **EXIT**, **UP**, **DOWN** and **BKSPC**.

The only keys that cannot be assigned to are the shift keys (**f/g**, **f** and **g**) and the **α** key (**f-XEQ**), so if you end up stuck in **USER** mode after re-assigning the **USER** key, there is always an escape path with **f-α** as **USER** is present in the **ALPHA** menu.

Soft keys and user menus assignments

Assigning to soft keys

Generally system menus are fixed and cannot be modified, however there are 4 system menus that can be customised by assigning specific items to their soft keys :

- **HOME**
- **MyMenu**
- **Myα**
- **P.FN**

Important! Once set with user soft keys, user menus will not change when new features are added in new firmware. **KEYS** **RESETS** **Myα.R**, **MyM.R**, **HOME.R** and **PFN.R** will reset the content to default.

HOME, **MyMenu** and **P.FN** have default functions already populated while **Myα** is empty, but any soft key of these 4 menus can be assigned a different item.

Assigning a specific item (function, program, variable, menu or character) to a soft key follows the generic mechanism presented above:

ASN *<item to assign>* *<destination key>*

where the *<destination key>* is a soft key of the menu displayed on the screen.

It is recommended before calling **ASN** to bring the destination menu on the screen so that after selecting the item to assign, if necessary, the destination menu can be easily brought back on the screen with **EXIT**, before pressing the destination key.

Note that after selecting the item to assign, two useful shortcuts are available:

- pressing **f USER** will bring back **MyMenu**, useful when assigning to **MyMenu**.
- Long pressing **EXIT** at this point, cycles the three writable menus **MyMenu**, **HOME** and **P.FN** which can be called up.

After the selection of the item to assign, a valid destination soft key is indicated by the 'tiled' view, ie. nails on the 4 corners of the soft key label.

Note : soft key assignments are independent of the **USER** mode.

MyMenu pre-defined ribbons

A set of pre-defined functions for the primary soft keys of **MyMenu** is available in the **KEYS > RIBBONS** menu. The ribbon collection attempts to provide frequently used groups of keys ready for instant replacement.

Each ribbon will redefine the primary function line of **MyMenu** for a different usage, meaning that if you use ribbons, prior assignments to **F1...F6** will be lost. See the [RIBBONS menu](#) for the detailed definition of the different ribbons.

Creating user menus

In addition to the 4 assignable system menus, it is possible to create user menus and to assign any item to these menus.

User menus can contain up to 18 items (3 rows of 6 soft keys) in a single menu page.

The creation of a user menu is done by the following sequence :

ASN USER *<user_menu_name>*

- *<user_menu_name>* should not be the name of an existing system or user menu

Once a user menu is created it is available in CAT > MENUS and can be selected to assign items to the different soft keys.

A user menu can be deleted with g CLR > DELETE > DELITM > MENUS > *<menu>*

C47 $\Sigma+$ key and R47 Blank key

The C47 and R47 also support the customisation of one key in Normal mode (out of USER mode): the C47 $\Sigma+$ key and the R47 Blank key (one of the shift keys).

The C47 $\Sigma+$ key

The C47 allows the customisation of the primary function of the $\Sigma+$ key in Normal mode. This is done by selecting a function in the menu KEYS > $\Sigma+$ KEY.

The default function for this key is $\Sigma+$ and a set of alternate functions is available in this menu. If the standard options are not sufficient U→N will transfer any primary assignment done for the $\Sigma+$ key in USER mode to the $\Sigma+$ key in Normal mode.

See the [\$\Sigma+\$ KEY](#) menu for the definition of the different options.

The R47 Blank key

The R47 allows also the customisation of one key in Normal mode: one of the shift keys. This is done by changing either the yellow or blue shift to the f^g shift function and defining the other shift key as a blank key in the R47 KEYS menu.

Once either shift key has been defined as blank key, the primary function for this key can be selected in KEYS > □ KEY. If the standard options are not sufficient U→N will transfer any primary assignment done for the blank key in USER mode to the blank key in Normal mode.

[f-shifted and g-shifted functions can be also assigned to the Blank key in normal mode by transferring them by U→N once assigned in USER mode. – This is not yet implemented]

Note : when a shift key is defined as a Blank key, long press is not supported and instead it supports only primary, f-shifted and g-shifted access as a standard key.

See the [□ KEY](#) menu for the definition of the different options.

Removing assignments

A key or soft key assignment is removed by assigning **NULL** to the key with **ASN ENTER <destination key>**

All key assignments on the keyboard can be removed by **KEYS > RESETS > KEYS.R** (this doesn't remove soft key assignments in menus).

When a program, variable or user menu is deleted, all assignments of this program, variable or user menu are also deleted from keys on the keyboard or soft keys in menus.

Key assignments example

Here is a simple example showing the different types of assignments.

First start with entering the following program with the 3 routines : →UNIT to set the UNIT display mode and ↑UNIT and ↓UNIT to increase or decrease the unit factor (the arrows →↑↓ are in the second page of the αMISC catalog):

```
0001: LBL '→UNIT'
0002:  UNIT 04
0003: RTN

0004: LBL '↑UNIT'
0005:  1.×103
0006:  ×
0007: RTN

0008: LBL '↓UNIT'
0009:  1.×103
0010:  ÷
0011: END
```

Assignments to keys

Let us assign →UNIT to the 1/× key, ↑UNIT to the Up arrow key and ↓UNIT to the down arrow key :

```
ASN f CAT PROGS →UNIT 1/×
ASN PROGS ↑UNIT f α 'UP' ENTER
ASN PROGS ↓UNIT f α 'DOWN' ENTER
```

KEYS > KEYMAP shows the assignments done to the USER primary key functions :

2026-01-12 L ° /64× 64:2 S L					
unshifted keyboard mapping (USER KEYS)					
Σ+	→UNIT	√x	LOG	LN	XEQ
STO	RCL	R↓	SIN	COS	TAN
ENTER	x↔y	CHS	EEX	←	
↑UNIT	7	8	9	÷	
↓UNIT	4	5	6	×	
f/g	1	2	3	-	
EXIT	0	.	R/S	+	
[↑][↓] Browse - [.] Toggle STD/USER View					

C47 KEYMAP

2026-01-12 L ° /64× 64:2 S L					
unshifted keyboard mapping (USER KEYS)					
x ²	√x	→UNIT	y ^x	LOG	LN
STO	RCL	R↓	DRG	f	g
ENTER	x↔y	CHS	EEX	←	
XEQ	7	8	9	÷	
↑UNIT	4	5	6	×	
↓UNIT	1	2	3	-	
EXIT	0	.	R/S	+	
[↑][↓] Browse - [.] Toggle STD/USER View					

R47 KEYMAP

Press f USER to select the USER mode, enter a number and press 1/× , this will execute →UNIT and set the UNIT mode.

Now pressing the Up arrow will change the number to the next upper unit and pressing the Down arrow will change the number to the next lower unit.

Assignments to a User Menu

Instead of assigning the different programs to standard keys, it may be preferable to create a user menu and assign them to this user menu.

First delete your current key assignments with **KEYS > RESETS > KEYS.R**. Verify the assignments are gone in **KEYMAP**.

Let us create a user menu named **TESTMNU** :

```
ASN USER 'TESTMNU'6
```

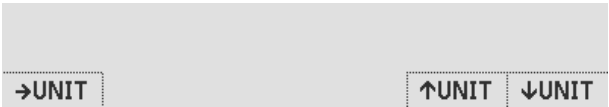
Open this newly created menu :

```
f CAT MENUS T7 TESTMNU
```

Assign the different programs to the menu softkeys :

```
ASN f CAT PROGS →UNIT EXIT F18  
ASN f CAT PROGS ↑UNIT EXIT F5  
ASN f CAT PROGS ↓UNIT EXIT F6
```

You should end up with the following menu :



Assign this user menu to a long press shift function :

```
ASN f CAT MENUS T TESTMNU long_press_on_Yellow_Shift
```

This will replace in **USER** mode the default **HOME** menu by **TESTMNU**, this is visible in **KEYS > KEYMAP** on the g-shift plane where the long press assignments are shown :

2026-01-18 L ° /64× 64:2 S L

g-shift keyboard mapping (USER KEYS)

a b/c	#	.ms	.d	LBL	GTO
4	Δ%	√y	i	→R	→P
CPX		STK	TRG	EXP	CLR
REGS	HOME	FIN	X.FN	PLOT	
FLGS	BITS	CLK	REAL	INTS	
TESTMNU	KEYS	α.FN	LOOP	I/O	
SNAP	STOPW	INFO	TEST	CNST	

[↑][↓] Browse - [.] Toggle STD/USER View

C47 KEYMAP

2026-01-18 14:47 ° /64× 64:2°

g-shift keyboard mapping (USER KEYS)

→R	→P	.ms	.d	→I	#
4	Δ%	R↑	ASN	TESTMNU	
CPX		STK	TRG	EXP	CLR
GTO	ASIN	ACOS	ATAN	PLOT	
REGS	BITS	REAL	X.FN	ADV	
FLGS	KEYS	CLK	α.FN	FIN	
INFO	I/O	a b/c	P.FN	CNST	

[↑][↓] Browse - [.] Toggle STD/USER View

R47 KEYMAP

In **USER** mode, a long press on the Yellow Shift key will open the assigned **TESTMNU**.

⁶ As the menu name has the maximum number of characters (7) the ASN instruction is completed automatically once the last character is entered.
⁷ Pressing the letter T in the MENUS catalog will move to the names starting with T.
⁸ F1, F5 and F6 means pressing the corresponding function key numbered from left to right.

Assignments to the C47 $\Sigma+$ key

If USER mode is often used it could be interesting to assign it to a primary key that could also be accessed in normal mode, this is possible with the C47 $\Sigma+$ key.

In **KEYS > $\Sigma+$ KEY**, select **->USER** this assigns the USER function to the $\Sigma+$ key in normal mode.

To make this key a USER mode toggle key, the USER function should also be assigned in USER mode:

Press the $\Sigma+$ key to set USER mode⁹, then **ASN f α 'USER' ENTER $\Sigma+$**

Now pressing the $\Sigma+$ key will toggle between normal and USER mode.

2026-01-18 L ° /64x 64:2 S L

unshifted keyboard mapping (USER KEYS)

USER	1/x	$\sqrt{x}$	LOG	LN	XEQ
STO	RCL	R↓	SIN	COS	TAN
ENTER		$x \rightarrow y$	CHS	EEX	←
↑	7	8	9	÷	
↓	4	5	6	×	
f/g	1	2	3	-	
EXIT	0	.	R/S	+	

[↑][↓] Browse - [.] Toggle STD/USER View

Instead of the predefined USER function the $\Sigma+$ key can be used to directly call the user menu **TESTMNU**.

Ensure **USER** mode is selected, then **ASN f CAT MENUS T TESTMNU $\Sigma+$** will assign **TESTMNU** to the $\Sigma+$ key in USER mode.

Once done this assignment can be transferred to the normal mode with **KEYS > $\Sigma+$ KEY > U→N**

The default $\Sigma+$ key function in normal mode is restored either by **KEYS > RESETS > KEYS.R** which clears all keys assignments, or by selecting **-> $\Sigma+$** in **KEYS > $\Sigma+$ KEY**.

⁹ The $\Sigma+$ assignment needs to be done in USER mode, because in normal mode this key is now the **USER** key.

Assignments to the R47 Blank key

If USER mode is often used it could be interesting to assign it to a primary key that could also be accessed in normal mode, this is possible with the R47 Blank key.

First one of the R47 shift key needs to be defined as a blank key. Let say the blue shift key will be the blank key and the yellow shift key will be the confined f/g shift (it could also be the opposite).

This is done with **KEYS > f^g □**

Now, in **KEYS > □ KEY**, select **→USER** this assigns the USER function to the Blue shift key in normal mode.

To make this key a USER mode toggle key, the USER function should also be assigned in USER mode:

Press the Blue shift key to set USER mode¹⁰, then **ASN¹¹ f α 'USER' ENTER Blue_shift**

Now pressing the Blue shift key will toggle between normal and USER mode.

2026-01-18 15:48 L ° /64x 64:2° S L

unshifted keyboard mapping (USER KEYS)					
x ²	√x	1/x	y ^x	LOG	LN
STO	RCL	R↓	DRG	f/g	USER
ENTER		x↗y	CHS	EEX	←
XEQ	7	8	9	÷	
↑	4	5	6	×	
↓	1	2	3	-	
EXIT	0	.	R/S	+	
[↑][↓] Browse - [.] Toggle STD/USER View					

Instead of the predefined USER function the Blank key can be used to directly call the user menu **TESTMNU**.

Ensure **USER** mode is selected, then **ASN f CAT MENUS T TESTMNU Blue_shift** will assign **TESTMNU** to the Blue shift key in USER mode. Once done this assignment can be transferred to the normal mode with **KEYS > □ KEY > U→N**

The default Blank key function in normal mode is restored either by **KEYS > RESETS > KEYS.R** which clears all keys assignments, or by selecting **→nil** in **KEYS > □ KEY**.

¹⁰ The blank key assignment needs to be done in USER mode, because in normal mode this key is now the **USER** key.

¹¹ With the Blue shift configured as a blank key, access to the **g** prefix is done by pressing twice the yellow shift key (**f/g**).

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