

## C47 Keyboard row 2

| Key       | Row | Column | Kind    | Label           | FullName        | Extended description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Type                         | Catalog         | Default |
|-----------|-----|--------|---------|-----------------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|-----------------|---------|
| C47.21.11 | 2   | 1      |         | $\Sigma+$       | Sigma+          | Enter data into the statistics matrix (STATS) ; the $[\Sigma+]$ key also is the hotkey that can be used for special key assignments in NORMAL mode, using menu $\Sigma+$ KEY (TI : nnn data point(s) ; Info : if a nx2 matrix is in X, $\Sigma+$ appends the data to the STATS matrix (creating it as necessary) ; $\Sigma+$ disables automatic stack lift for the next entry)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Command                      | $\Sigma+$       |         |
| C47.21.12 | 2   | 1      | f       | $\rightarrow I$ | To integer      | Convert to Long integer (0), Short integer (8.02-8.16) (cyclic, max 1000 digits) (Info : Short integer indicated by subscript <sub>10</sub> ; can show TI: 0vrfl<0: or 0vrfl>64 bits : which can be abbreviated as 0F, indicating overflow condition)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Function (monadic, cyclic)   | $\rightarrow I$ |         |
| C47.21.13 | 2   | 1      | g       | $a^b/c$         | Fractions modes | Set and cycle fractions modes : proper (mixed), improper fractions (denominator determined by DMX, DENFIX, DENANY) ; or fractional approximations including irrationals ; exit fractions mode via .d (g[LOG]) ; starts in mode last used or as set by flags PROPF, FRACT and IRFRAC ; When FRCYC is SET full cycle is available, when CLEAR, flag PROPF is excluded (used as is) and OFF state is included in cycle (Shortcut : <a> [. ] <b> [. ] <c> ; Info : IRFRAC and FRACT are linked (both cannot be SET at the same time) ; SBI xI or .I indicates that approximate multiples or fractions can be used, of the irrational numbers $\sqrt{2}$ , $\sqrt{3}$ , $\sqrt{5}$ , $\sqrt{7}$ , $\phi$ , $\pi^{-2}$ , $\pi^{-1}$ , $\sqrt{\pi}$ , $\pi$ , $\pi^2$ , $e^{-2}$ , $e^{-1}$ , $e$ and $e^2$ (with tolerance $10^{-24}$ ) ; Prefix $\approx$ + <approximation> ; multiplication symbol $\times$ or $\cdot$ according to flag MULT $\times$ ; SBI $\approx$ indicates FDIGS < 34 ; SBI is shown if flag SBfrac is SET ; Ref : <a href="https://47calc.com/doc/C47/Reference/C47_Fractions.pdf">https://47calc.com/doc/C47/Reference/C47_Fractions.pdf</a> ) | Setting (cyclic, pgm, stack) |                 | OFF     |
| C47.21.31 | 2   | 1      | alpha   | A               | A               | Character A (Fontcode : 0041 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Character                    |                 |         |
| C47.21.32 | 2   | 1      | alpha f | a               | a               | Character a (Fontcode : 0061 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Character                    |                 |         |
| C47.21.33 | 2   | 1      | alpha g | $\Sigma$        | SIGMA           | Character $\Sigma$ (Shortcut : alpha g [ $\Sigma+$ ] ; Info : Fontcode : 03A3 <sub>16</sub> ; press [ $\blacktriangledown$ ] for $\sigma$ at [ $\alpha...$ w.2] F2)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | Character                    |                 |         |
| C47.21.41 | 2   | 1      | TAM     | {A}             | Register A      | Easy access to Register A (104) : Stack level 5 (Shortcut : ST0/RCL {A} ; TI : A:)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EasyAccess (TAM)             |                 |         |
| C47.21.42 | 2   | 1      | #TAM    |                 |                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                              |                 |         |

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|-----------|---|---|---------|-------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------|-------------------|-----|
| C47.22.11 | 2 | 2 |         | $1/x$ | Reciprocal        | Reciprocal (1/X) (Info : When X is a matrix $1/x$ inverts it ( $[M]^{-1}$ ))                                                                                                                                                                                                                                                   | Function (monadic)   | $1/x$             |     |
| C47.22.12 | 2 | 2 | f       | $y^x$ | y to the power x  | Raise value in the Y-register to the power in the X-register                                                                                                                                                                                                                                                                   | Function (dyadic)    | $y^x$             |     |
| C47.22.13 | 2 | 2 | g       | #     | Number base       | Set number base ; operates on all stack registers depending on BASE <sub>HP</sub> (TAM : $\rightarrow$ INT __ TamNonReg menu ; #TAM shortcuts : B = BIN ; D = DEC ; ENTER = DEC ; H = HEX ; O = OCT ; Info : SBI is shown if flag SBfrac is SET ; exit base mode by .d, $\rightarrow I$ , [. ] or CLRMOD (longerpress [EXIT])) | Setting (pgm, stack) | $\rightarrow$ INT | OFF |
| C47.22.31 | 2 | 2 | alpha   | B     | B                 | Character B (Fontcode : 0042 <sub>16</sub> )                                                                                                                                                                                                                                                                                   | Character            |                   |     |
| C47.22.32 | 2 | 2 | alpha f | b     | b                 | Character b (Fontcode : 0062 <sub>16</sub> )                                                                                                                                                                                                                                                                                   | Character            |                   |     |
| C47.22.33 | 2 | 2 | alpha g | ^     | Circumflex accent | Raise to power (Shortcut : alpha g [ $1/x$ ] ; Fontcode : 005E <sub>16</sub> )                                                                                                                                                                                                                                                 | Character            |                   |     |
| C47.22.41 | 2 | 2 | TAM     | {B}   | Register B        | Easy access to Register B (105) : Stack level 6 (Shortcut : ST0/RCL {B} ; TI : B:)                                                                                                                                                                                                                                             | EasyAccess (TAM)     |                   |     |
| C47.22.42 | 2 | 2 | #TAM    | BIN   | Binary            | Convert X to binary and toggle binary mode ; entering digits A-F switches the calculator to hexadecimal mode ; when KEY <sub>A-F</sub> is SET, the respective digit is included in the row 2 key's longpress preview cycle (Shortcut : #TAM [ $1/x$ ] (B) ; Info : values are displayed with subscript 2)                      | Setting (pgm)        | BIN               | OFF |

|           |   |   |         |            |                   |                                                                                                                                                                                                                       |                            |            |  |
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| C47.23.11 | 2 | 3 |         | $\sqrt{x}$ | Square root       | Square root of X (Info : When X is a matrix $\sqrt{x}$ calculates its square root (MSQRT))                                                                                                                            | Function (monadic)         | $\sqrt{x}$ |  |
| C47.23.12 | 2 | 3 | f       | $x^2$      | Square            | Square of X                                                                                                                                                                                                           | Function (monadic)         | $x^2$      |  |
| C47.23.13 | 2 | 3 | g       | .ms        | Minutes & seconds | Convert sexagesimal format input sequence or decimal stack value to hh:mm:ss hours or dd°mm'ss" degrees (cyclic) (Info : NIM input treated as sexagesimal (hh/dd.mmss) format ; stack input treated as decimal value) | Function (monadic, cyclic) | .ms        |  |
| C47.23.31 | 2 | 3 | alpha   | C          | C                 | Character C (Fontcode : 0043 <sub>16</sub> )                                                                                                                                                                          | Character                  |            |  |
| C47.23.32 | 2 | 3 | alpha f | c          | c                 | Character c (Fontcode : 0063 <sub>16</sub> )                                                                                                                                                                          | Character                  |            |  |

| Key       | Row | Column | Kind    | Label | FullName    | Extended description                                                               | Type             | Catalog | Default |
|-----------|-----|--------|---------|-------|-------------|------------------------------------------------------------------------------------|------------------|---------|---------|
| C47.23.33 | 2   | 3      | alpha g | ✓     | Square root | Square root (Shortcut : alpha g[ $\sqrt{x}$ ] ; Fontcode : 221A <sub>16</sub> )    | Character        |         |         |
| C47.23.41 | 2   | 3      | TAM     | {C}   | Register C  | Easy access to Register C (106) : Stack level 7 (Shortcut : ST0/RCL {C} ; TI : C:) | EasyAccess (TAM) |         |         |
| C47.23.42 | 2   | 3      | #TAM    |       |             |                                                                                    |                  |         |         |

|           |   |   |         |     |                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                    |     |     |
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| C47.24.11 | 2 | 4 |         | LOG | Common logarithm          | Common logarithm (base 10)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Function (monadic) | LOG |     |
| C47.24.12 | 2 | 4 | f       | 10* | 10 to the power x         | Raise 10 to the power in the X-register                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Function (monadic) | 10* |     |
| C47.24.13 | 2 | 4 | g       | .d  | Decimal (Real) or Date    | Convert to decimal (Real) or date value ; untag (ADM) angle ; clear Fractions Mode, #BASE Mode ; convert angles / Times / Dates to Real ; convert NIM input to Date (according to CLK date format settings and implied conversion set by YY ; convert Complex number with zero imaginary part to Real ; when editing angles using EDIT, key .d removes the angle tag (Normal Mode and PEM) ; when editing short integers, key .d removes the base (Normal Mode and PEM) ; in PEM, .d registers as →REAL (TI : decimal h: or yyyy.mmdd: ; Ref : <a href="https://47calc.com/doc/C47/Reference/C47_Date_formats.pdf">https://47calc.com/doc/C47/Reference/C47_Date_formats.pdf</a> ) | Function (monadic) |     |     |
| C47.24.31 | 2 | 4 | alpha   | D   | D                         | Character D (Fontcode : 0044 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Character          |     |     |
| C47.24.32 | 2 | 4 | alpha f | d   | d                         | Character d (Fontcode : 0064 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Character          |     |     |
| C47.24.33 | 2 | 4 | alpha g | LOG | Common logarithm (string) | Common logarithm (base 10) (Shortcut : alpha g[LOG] ("LOG"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Character          |     |     |
| C47.24.41 | 2 | 4 | TAM     | {D} | Register D                | Easy access to Register D (107) : Stack level 8 (Shortcut : ST0/RCL {D} ; TI : D:)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | EasyAccess (TAM)   |     |     |
| C47.24.42 | 2 | 4 | #TAM    | DEC | Decimal (short integer)   | Convert X to decimal (short integer) and toggle decimal (short integer) mode ; entering digits A-F switches the calculator to hexadecimal mode ; when KEY <sub>A-F</sub> is SET, the respective digit is included in the row 2 key's longpress preview cycle (Shortcut : #TAM [LOG] (D) ; Info : values are displayed with subscript <sub>10</sub> )                                                                                                                                                                                                                                                                                                                               | Setting (pgm)      | DEC | OFF |

|           |   |   |         |     |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |     |  |
|-----------|---|---|---------|-----|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|-----|--|
| C47.25.11 | 2 | 5 |         | LN  | Natural logarithm          | Natural logarithm (base e)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Function (monadic) | LN  |  |
| C47.25.12 | 2 | 5 | f       | e*  | e to the power x           | Raise e to the power in the X-register                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | Function (monadic) | e*  |  |
| C47.25.13 | 2 | 5 | g       | LBL | Label                      | Create global or local label ; create global label by pressing key α (f[XEQ]) and entering the name, which will be displayed as '<label>' ; local labels only exist within the scope of the program ; they are numeric : 01-99, single letter : a-l or {A}-{E}, F, {G}-{L} ; or created as local named labels, by pressing button : ([TamLabel.1]F3), then button α ([TamLocalLabel.1]F3) or key α (f[XEQ]) and entering the name, which will be displayed as '<label>' ; maximum label length is : 7 characters (TAM : LBL __ TamLabel menu ; Info : LBL + TAM [XEQ] to enter global LBL '._ TamAlpha menu ; LBL + button : on [TamLabel.1]F3 to enter LBL :__ TamLocalLabel menu to create local labels a-l, D-F or local named labels (additionally pressing button α on [TamLocalLabel.1]F3 or TAM [XEQ] to enter LBL :. TamAlpha menu) ; note that a label may be used multiple times in a program ; local labels are searched forwards from the GT0 or XEQ command, before global labels, which are searched from the start of program memory) | Command (PEM)      | LBL |  |
| C47.25.31 | 2 | 5 | alpha   | E   | E                          | Character E (Fontcode : 0045 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Character          |     |  |
| C47.25.32 | 2 | 5 | alpha f | e   | e                          | Character e (Fontcode : 0065 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | Character          |     |  |
| C47.25.33 | 2 | 5 | alpha g | LN  | Natural logarithm (string) | Natural logarithm (base e) (Shortcut : alpha g[LN] ("LN"))                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | Character          |     |  |
| C47.25.41 | 2 | 5 | TAM     | {E} | Register E                 | Easy access to Register E (217) : General purpose register E (Shortcut : ST0/RCL {E} ; TI : E:)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      | EasyAccess (TAM)   |     |  |
| C47.25.42 | 2 | 5 | #TAM    |     |                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |                    |     |  |

| Key       | Row | Column | Kind    | Label    | FullName         | Extended description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Type               | Catalog | Default |
|-----------|-----|--------|---------|----------|------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|---------|---------|
| C47.26.11 | 2   | 6      |         | XEQ      | Execute          | Execute function or program with global or local label (TAM : XEQ __ TamLabel menu ; Info : XEQ + TAM [XEQ] to enter global XEQ ' _ TamAlpha menu ; XEQ + button : on [TamLabel.1]F3 to enter XEQ :__ TamLocalLabel menu for easy access to local labels a-l, D-F or local named labels (additionally pressing button α on [TamLocalLabel.1]F3 or TAM [XEQ] to enter XEQ :_ TamAlpha menu))                                                                                                                                                                                                                                              | Command (PEM)      | XEQ     |         |
| C47.26.12 | 2   | 6      | f       | α        | Alpha input      | Open alpha menu to enter, edit and clear alpha input ; when TAM is active, open menu TamAlpha (Shortcut : longpress [XEQ] (even when M.14 is ON) ; Info : Alpha Input Mode is opened in UPPERCASE ; menu CAT [α] is available on keyboard alpha f[+] ; alpha g-shift characters can also be reached from alpha longpress keyboard)                                                                                                                                                                                                                                                                                                       | MENU (item)        | [ALPHA] |         |
| C47.26.13 | 2   | 6      | g       | GT0      | Go to            | Go to global or local label ; GT0. to go to (local) label or step ; GT0.. to move the program pointer to the end of program memory ; GT0↑ to go to the start of the (previous) program or jump to the start of program memory ; GT0↓ to go to the next program or jump to the end of program memory (TAM : GT0 __ TamLabel menu ; Info : GT0 + TAM [XEQ] to enter global GT0 ' _ TamAlpha menu ; GT0 + button : on [TamLabel.1]F3 to enter GT0 :__ TamLocalLabel menu for easy access to local labels a-l, D-F or local named labels (additionally pressing button α on [TamLocalLabel.1]F3 or TAM [XEQ] to enter GT0 :_ TamAlpha menu)) | Command (PEM)      | GT0     |         |
| C47.26.31 | 2   | 6      | alpha   | F        | F                | Character F (Fontcode : 0046 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Character          |         |         |
| C47.26.32 | 2   | 6      | alpha f | f        | f                | Character f (Fontcode : 0066 <sub>16</sub> )                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Character          |         |         |
| C47.26.33 | 2   | 6      | alpha g | α        | alpha            | Character α (Shortcut : alpha g[XEQ] ; Info : Fontcode : 03B1 <sub>16</sub> ; press [▲] for A at [A...Ω.1]F1)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | Character          |         |         |
| C47.26.41 | 2   | 6      | TAM     | TamAlpha | TAM mode (alpha) | Transient Alpha Mode is activated for trailing input (alpha) (Shortcut : Activated from TAM menus by α (f[XEQ]) or TAM [XEQ] ; Info : Alpha Input Mode is opened in UPPERCASE for labels, lowercase for variables ; menu CAT [α] is available on keyboard alpha f[+] ; alpha g-shift characters can also be reached from alpha longpress keyboard)                                                                                                                                                                                                                                                                                       | MENU (TAM)         |         |         |
| C47.26.42 | 2   | 6      | #TAM    | FP       | Fractional Part  | Fractional Part of real number (Shortcut : #TAM [XEQ] (F) for closed number)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Function (monadic) | FP      |         |

Next row <https://47calc.com/doc/C47/Keyboard/Rows/3.pdf>

Previous row <https://47calc.com/doc/C47/Keyboard/Rows/8.pdf>