# Micromite MMBasic Version 5.4 Quick Reference

## Program Management

CONTINUE
CPU speed
CPU SLEEP [ sec [, abortpin]]
CPU RESTART
CSUB name(type [, type]) rtype
END CSUB
CFUNCTION name type [,type] [AS type]
END CFUNCTION
DEFINEFONT #Nbr
END DEFINEFONT
EDIT
END
LIBRARY SAVE | DELETE | LIST
LIST [ALL]
MEMORY
NEW
POKE BYTE | WORD |VAR | VARTBL, addr, dat
RUN
TIMER = msec
TRACE ON | OFF | LIST nn
VAR SAVE var [, var]... | RESTORE | CLEAR
WATCHDOG timeout | OFF
XMODEM SEND | RECEIVE [filename$]
nbr = PEEK(BYTE | WORD | VARADDR | CFUNADDR | VAR | VARTBL | PROGMEM, args)

## Input/Output

SETPIN pin, cfg [, option]
cfg = OFF | AIN | DIN | FIN | PIN | CIN | DOUT
option = PULLUP | PULLDOWN | OC | gate | cycles
SETPIN pin, OFF | INTH | INTL | INTB, target [, option]
option = PULLUP | PULLDOWN
PIN( pin ) = value
PORT(start, nbr [,start, nbr]...) = value
PULSE pin, width
pulsewidth = PULSIN( pin, polarity [, t1 [, t2]])
value = PIN(pin)
value = PORT(start, nbr [,start, nbr]...)

## Commands

‘ (single quotation mark) - comment
? (question mark) – shorthand for PRINT
CLEAR
CONST id1 = expression [, id2 = expression, ...]
CONTINUE DO | FOR
DATA constant[,constant]...
DATE$ = "DD-MM-YY" | "DD/MM/YY"
DIM [type] var [, var, ...] [AS type [, var AS type , ...]]
DO [WHILE <test>]
LOOP
DO
LOOP UNTIL <test>
ERASE array [,array, ... ]
ERROR [message$]
EXIT DO | FOR | FUNCTION | SUB
FOR var = start TO finish [STEP increment]
NEXT [var1 [, var2, ...]
FUNCTION name (arg1 [,arg2, ...]) [AS <type>]
END FUNCTION
GOSUB target
RETURN
GOTO target
IF <test> THEN <stmt> ELSE <stmts>
IF <test> THEN — ELSEIF — ELSE — ENDIF
INPUT ["prompt string$" ;|, ] var [, var, ...]
LINE INPUT ["prompt string$",] var$
LET variable = expression
variable = expression
LOCAL [type] decl [, decl, ...] [AS type [, var AS type , ...]]
ON ERROR ABORT | IGNORE | SKIP [nn] | CLEAR
ON nbr GOTO | GOSUB target1 [, target2, ...]
ON KEY subroutine
PAUSE ms
PRINT expression1 [, | ;] [expression2, ...] [, | ;]
RANDOMIZE nbr
READ var1[, var2, ...]
RESTORE [line]
REM comment
SELECT CASE — CASE [ELSE] — END SELECT
SETTICK period, target [, nbr]
SUB name arg1 [, arg2, ...]
END SUB
TIME$ = "HH:MM:SS" | "HH:MM" | "HH"

## Functions

| | |
|---|---|
| ACOS( nbr ) | ABS( nbr ) |
| ASIN( nbr ) | ATN( nbr ) |
| COS( nbr ) | DEG( radians ) |
| EXP( nbr ) | LOG( nbr ) |
| PI | RAD( degrees ) |
| SIN( nbr ) | SQR( nbr ) |
| TAN( nbr ) | EVAL( str$ ) |
| CINT( nbr ) | FIX( nbr ) |
| INT( nbr ) | |
| ASC( str$ ) | BIN$( nbr [, chars]) |
| CHR$( nbr ) | FIELD$( str$, field, delim$) |
| HEX$( nbr [, chars]) | INSTR([start,] str$, pat$) |
| LEFT$( str$, nbr ) | RIGHT$( str$, nbr ) |
| LEN( str$ ) | MID$( str$, start [, nbr]) |
| OCT$( nbr [, chars]) | SPACE$( nbr ) |
| STR$( nbr [, m [, n [, c$]]] ) | |
| STRING$( nbr, ascii \| str$ ) | |
| LCASE$( str$ ) | UCASE$( str$ ) |
| VAL( str$ ) | |
| DATE$ | TIME$ |
| TIMER | INKEY$ |
| MAX( nbr [, nbr [, ..]] ) | MIN( nbr [, nbr [, ...]] ) |
| POS | RND( nbr ) |
| SGN( nbr ) | TAB( nbr ) |

## Options

OPTION AUTORUN OFF | ON
OPTION BASE 0 | 1
OPTION BAUDRATE nbr
OPTION BREAK nn
OPTION CASE UPPER | LOWER | TITLE
OPTION CLOCKTRIM ±n
OPTION COLOURCODE ON | OFF
OPTION CONSOLE ECHO | NOECHO
OPTION CONSOLE INVERT | NOINVERT
OPTION CONSOLE AUTO
OPTION DEFAULT FLOAT | INTEGER | STRING | NONE
OPTION DISPLAY lines [,chars]
OPTION ERROR CONTINUE | ABORT
OPTION EXPLICIT
OPTION KEYBOARD nn
OPTION LIST
OPTION PIN nbr
OPTION RESET
OPTION TAB 2 | 4 | 8

## Operators

| | |
|---|---|
| NOT ^ | Logical inverse, exponentiation |
| * / \ | Multiply, division (float & integer) |
| MOD | Modulus (remainder) |
| + - | Addition and subtraction |
| x << y x >> y | Shift bits left/right by y bits |
| <> < > | Not equals, less/greater than |
| <= >= | Less/greater than or equals |
| AND OR XOR | Logical and, or, exclusive or |

## Variables

Identifier = [A-Z | _[[A-Z | 0-9 | . | _] Max 32 chars.
Suffix: FLOAT = ! INTEGER = % STRING = $
Literal Number = [ &H | &O | &B ] number

| | |
|---|---|
| MM.VER | MM.DEVICE$ |
| MM.ERRNO | MM.ERRMSG$ |
| MM.HRES | MM.VRES |
| MM.FONTHEIGHT | MM.FONTWIDTH |
| MM.WATCHDOG | |
| MM.I2C | MM.ONEWIRE |

## GUI Controls (MM+)

OPTION CONTROLS nn

GUI AREA #ref, X, Y [, width, height]
GUI BUTTON #ref, caption$, X, Y [, w, h, FC, BC]
GUI CAPTION #ref, text$, X, Y [, just$, FC], BC]
GUI CHECKBOX #ref, caption$, X, Y [, size, colour]
GUI DISPLAYBOX #ref, X, Y [, width, height, FC, BC]
GUI FRAME #ref, caption$, X, Y [, width, height, colour]
GUI LED #ref, caption$, X, Y [, radius, colour]
GUI NUMBERBOX #ref, X, Y [, width, height, FC, BC]
GUI RADIO #ref, caption$, X, Y [, radius, colour]
GUI SPINBOX #ref, X, Y, w, h [, FC, BC, Step, Min, Max]
GUI SWITCH #ref, caption$, X, Y [, width, height, FC, BC]
GUI TEXTBOX #ref, X, Y [, width, height, FC, BC]

GUI BCOLOUR colour, #ref1 [, #ref2, ...]
GUI BEEP msec
GUI DELETE #ref1 [,#ref2, ...] | ALL
GUI DISABLE #ref1 [,#ref2, ...] | ALL
GUI ENABLE #ref1 [,#ref2, ...] | ALL
GUI FCOLOUR colour, #ref1 [, #ref2, ...]
GUI HIDE #ref1 [,#ref2, ...] | ALL
GUI NUMBERBOX CANCEL
GUI REDRAW #ref1 [,#ref2, ...] | ALL
GUI SHOW #ref1 [,#ref2, ...] | ALL
GUI TEXTBOX CANCEL

GUI INTERRUPT down [, up]
ctrl = TOUCH(DOWN | UP | LASTX | LASTY | REF | LASTREF)
val = CTRLVAL(#ref) CTRLVAL(#ref) = value
GUI SETUP #n
PAGE #n [,#n2, ...]
button = MSGBOX (msg$, b1$ [,b2$ [, b3$ [, b4$]]])

## Communications & File I/O

OPEN C$ AS #fnbr
C$ = "COMn: baud, buf, int, nbr, DE, 9BIT, INV, OC, S2"

I2C OPEN speed, timeout [, PU]
I2C WRITE addr, option, sendlen, data [,data ....]
I2C READ addr, option, rcvlen, rcvbuf
I2C SLAVE OPEN addr, mask, opt, i_send, i_rcv
I2C SLAVE WRITE len, data [, data ....]
I2C SLAVE READ len, buf, rcvd
I2C [SLAVE] CLOSE

ONEWIRE READ pin, flag, len, data, ...
ONEWIRE WRITE pin, flag, len, data, ...
ONEWIRE RESET pin

SPI[2] OPEN speed, mode, bits
received_data = SPI[2](data_to_send)
SPI[2] WRITE nbr, data1,, ... | str$ | array()
SPI[2] READ nbr, array()
SPI[2] CLOSE

OPTION SDCARD CS [, CD [,WP]] | DISABLE
OPEN fname$ FOR mode AS [#]fnbr
'mode' = INPUT | OUTPUT | APPEND | RANDOM

| | |
|---|---|
| LOAD file$ [,R] | LOAD IMAGE file$ [, x, y] |
| MKDIR dir$ | RMDIR dir$ |
| CHDIR dir$ | dir = CWD$ |
| NAME old$ AS new$ | KILL file$ |
| SAVE [ file$ ] | SAVE IMAGE file$ |
| SEEK [#]fnbr, pos | FILES [fspec$] |

fname$ = DIR$( [fspec [, type]] )

CLOSE [#]fnbr [,[#]fnbr] ...
State = EOF( [#f]nbr )
INPUT #fnbr, var1 [, var2, ...]
LINE INPUT #fnbr, string variable$
PRINT #fnbr, expression1 [, | ;] [expression2, ...] [, | ;]
INPUT$(nbr, [#]fnbr)
nbr = LOC([#]fnbr) nbr = LOF([#]fnbr )

PLAY TONE left [, right [, duration]]
PLAY WAV file$ [, interrupt]
PLAY PAUSE | RESUME | STOP | VOLUME left, right

# Micromite MMBasic V5.4

(Micromite Plus features are in red)

Downloads: http://geoffg.net/micromite.html
Forum: http://www.thebackshed.com/forum/Microcontrollers



## Devices

IR dev, key , int | CLOSE
KEYPAD var, int, r1, r2, r3, r4, c1, c2, c3 , c4 | CLOSE
LCD INIT d4, d5, d6, d7, rs, en
LCD line, pos, text$ | CLEAR | CLOSE
LCD CMD | DATA d1 [, d2 [, etc]]
PWM channel, freq, pwm1 [, pwm2 [, pwm3]]
PWM channel, STOP
RTC GETTIME
RTC SETTIME year, month, day, hour, minute, second
RTC SETREG | GETREG register, value | var
OPTION RTC data, clock | DISABLE
SERVO channel [, freq], out1 [, out2 [, out3]]
SERVO channel, STOP
TEMPR START pin [, precision 0 to 3 ]
Temperature = TEMPR( pin )

## LCD Display Panel

OPTION LCDPANEL ctrl, orient, D/C, reset [,CS]
ctrl = ILI9163 | ST7735 | ILI9341

OPTION LCDPANEL ctrl, orient [, LCD-A] [, readpin]
ctrl = SSD1963_[4][5][5A][7][7A][8]

OPTION LCDPANEL CONSOLE [font [, fc [, bc , [blight]]]]
OPTION LCDPANEL NOCONSOLE

OPTION LCDPANEL DISABLE
GUI CALIBRATE
GUI RESET LCDPANEL
GUI TEST LCDPANEL | TEST TOUCH

OPTION TOUCH T_CS pin, T_IRQ pin [, click pin]
OPTION TOUCH DISABLE

PIXEL x, y [, colour ]
LINE x1, y1, x2, y2 [, lw [, colour]]
CIRCLE x, y, r [, lw] [, a] [, colour] [, fill]
TRIANGLE x1, y1, x2, y2, x3, y3 [, colour [, FILL]]
BOX x1, y1, w, h [, lw] [, colour] [, fill]
RBOX x1, y1, w, h [, rc] [, colour] [, fill]
TEXT x, y, str$ [, just$] [, fnt] [, scale] [, colour] [, bc]
GUI BITMAP x, y, data [, w] [, h] [, s] [, colour] [, bc]

CLS [colour]
COLOUR fore [, back]
COLOR fore [, back]
FONT [#]font-number, scaling
BACKLIGHT percent
BLIT READ | WRITE [#]buffer, x, y, w, h
BLIT CLOSE [#]buffer
BLIT x1, y1, x2, y2, w, h

colour% = RGB(red, green, blue | colour listed below)
white black blue green cyan red magenta yellow brown gray

coordinate = TOUCH( X | Y )