

# BASCOM-AVR

BASCOM-AVR1© is a Windows BASIC COMPILER for the AVR family. It is designed to run on W95/W98/NT/W2000 and XP.

## Key Benefits

- Structured BASIC with labels.
- Structured programming with IF-THEN-ELSE-END IF, DO-LOOP, WHILE-WEND, SELECT- CASE.
- Fast machine code instead of interpreted code.
- Variables and labels can be as long as 32 characters.
- Bit, Byte, Integer, Word, Long, Single and String variables.
- Compiled programs work with all AVR microprocessors that have internal memory.
- Statements are highly compatible with Microsoft's VB/QB.
- Special commands for LCD-displays , I2C chips and 1WIRE chips, PC keyboard, matrix keyboard, RC5 reception, software UART , SPI , graphical LCD, send IR RC5 or Sony code.
- Local variables, user functions, library support.
- Integrated terminal emulator with download option.
- Integrated simulator for testing.
- Integrated ISP programmer (application note AVR910.ASM).
- Integrated STK200 programmer and STK300 programmer.
- Editor with statement highlighting.
- Context sensitive help.

The following statements are supported:

### Decision and structures

IF, THEN, ELSE, ELSEIF, END IF, DO, LOOP, WHILE, WEND, UNTIL, EXIT DO, EXIT WHILE, FOR, NEXT, TO, STEP, EXIT FOR, ON .. GOTO/GOSUB, SELECT, CASE.

### Input and output

PRINT, INPUT, INKEY, PRINT, INPUTHEX, LCD, UPPERLINE, LOWERLINE, DISPLAY ON/OFF, CURSOR ON/OFF/BLINK/NOBLINK, HOME, LOCATE, SHIFTLCD LEFT/RIGHT, SHIFTCURSOR LEFT/RIGHT, CLS, DEFLCDCHAR, WAITKEY, INPUTBIN, PRINTBIN, OPEN, CLOSE, DEBOUNCE, SHIF TIN, SHIF TOUT, GETATKBD, SPC

### Numeric functions

AND, OR, XOR, INC, DEC, MOD, NOT, ABS, BCD, LOG, EXP, SQR, SIN, COS, TAN, ATN, ATN2, ASIN, ACOS, FIX, ROUND, MOD, SGN, POWER, RAD2DEG, DEG2RAD, LOG10, TANH, SINH, COSH.

## I2C

I2CSTART, I2CSTOP, I2CWBYTE, I2CRBYTE, I2CSEND and I2CRECEIVE.

## 1WIRE

1WWRITE, 1WREAD, 1WRESET, 1WIRECOUNT, 1WSEARCHFIRST, 1WSEARCHNEXT.

## SPI

SPIINIT, SPIIN, SPIOOUT, SPIMOVE.

## Interrupt programming

ON INTO/INT1/TIMERO/TIMER1/SERIAL, RETURN, ENABLE, DISABLE, COUNTERx, CAPTUREx, INTERRUPTS, CONFIG, START, LOAD.

## Bit manipulation

SET, RESET, ROTATE, SHIFT, BITWAIT, TOGGLE.

## Variables

DIM, BIT , BYTE , INTEGER , WORD, LONG, SINGLE, STRING , DEFBIT, DEFBYTE, DEFINT, DEFWORD.

## Miscellaneous

REM, ' , SWAP, END, STOP, CONST, DELAY, WAIT, WAITMS, GOTO, GOSUB, POWERDOWN, IDLE, DECLARE, CALL, SUB, END SUB, MAKEDEC, MAKEBCD, INP,OUT, ALIAS, DIM , ERASE, DATA, READ, RESTORE, INCR, DECR, PEEK, POKE, CPEEK, FUNCTION, READMAGCARD, BIN2GREY, GREY2BIN, CRC8, CRC16, CHECKSUM.

## Compiler directives

\$INCLUDE, \$BAUD and \$CRYSTAL, \$SERIALINPUT, \$SERIALOUTPUT, \$RAMSIZE, \$RAMSTART, \$DEFAULT XRAM, \$ASM-\$END ASM, \$LCD, \$EXTERNAL, \$LIB.

## String manipulation

STRING, SPACE, LEFT, RIGHT, MID, VAL, HEXVAL, LEN, STR, HEX, LTRIM, RTRIM, TRIM, LCASE, UCASE, FORMAT, FUSING, INSTR.

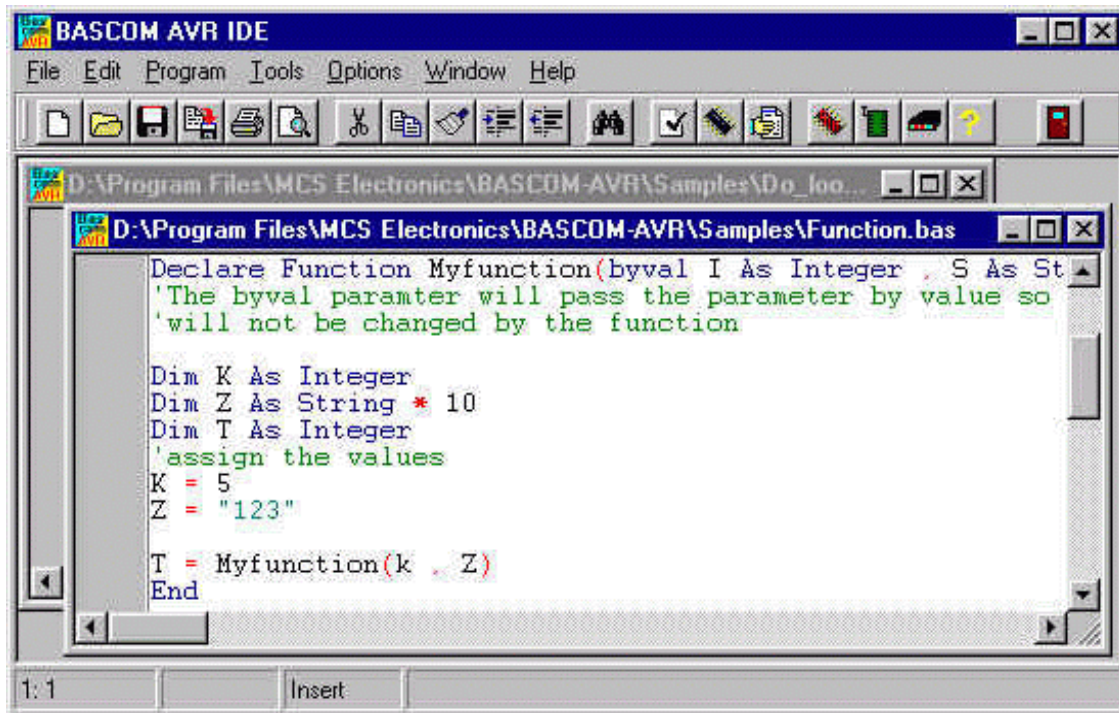
And many other functions, statements and directives

To make a program takes just a few steps:

- Write the program in BASIC
- Compile it to fast machine binary code
- Test the result with the integrated simulator (with additional hardware you can simulate the hardware too).
- Program the chip with one of the integrated programmers. (hardware must be purchased separately)

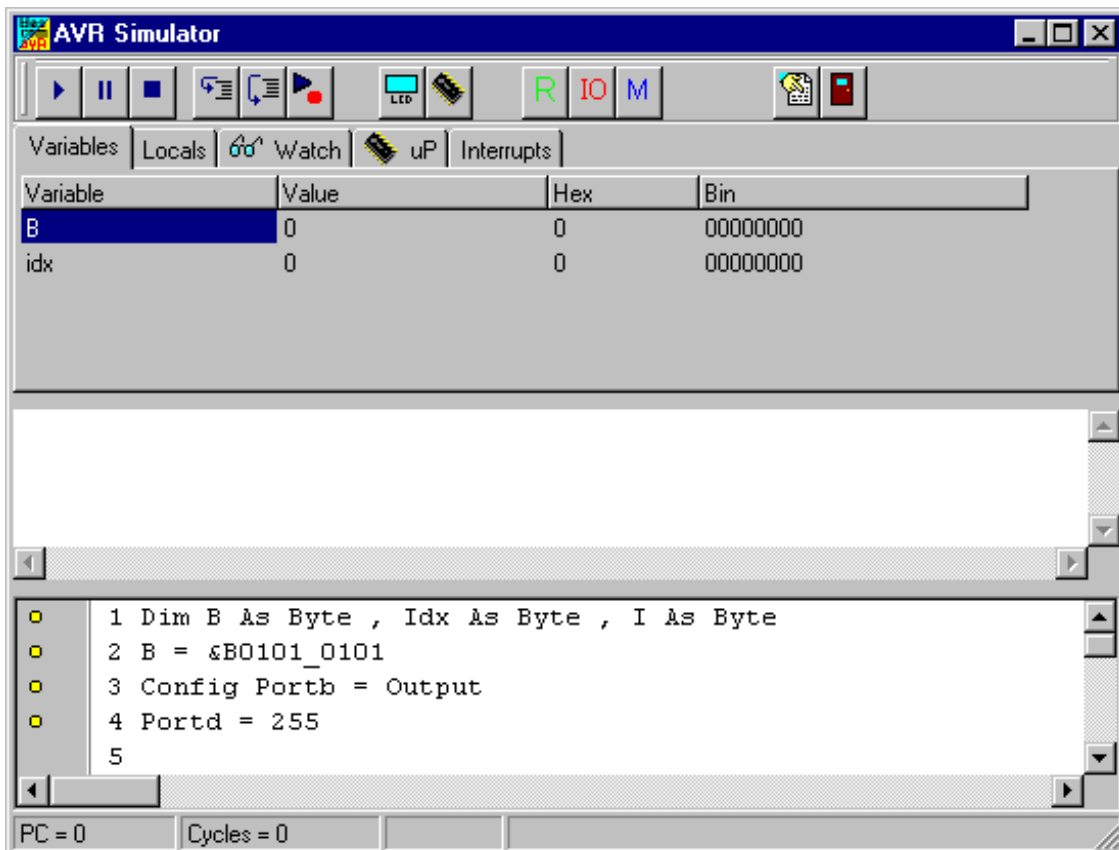
The program can be written in a comfortable MDI color coded editor.

Besides the normal editing features, the editor supports Undo, Redo, Bookmarks and block indentation.

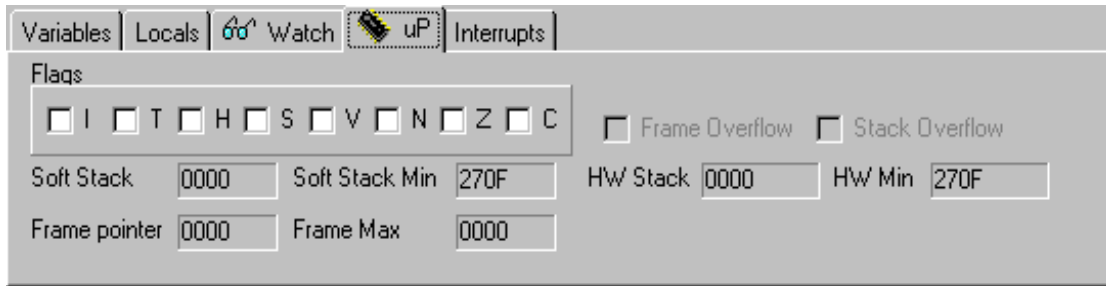


The simulator let you test your program before writing it to the uP. You can watch variables, step through the program one line at the time or run to a specific line, or you can alter variables.

To watch a variables value you can also point the mouse cursor over it.

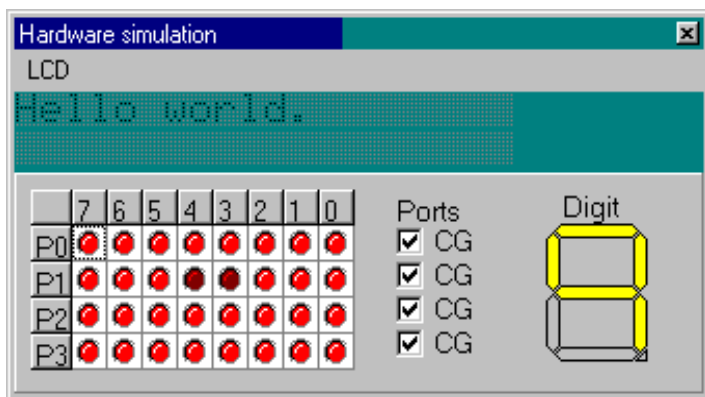


uP TAB of simulator



A powerful feature is the hardware emulator, to emulate the LCD display, and the ports.

The LCD emulator also emulates custom build LCD characters.



You can even simulate the hardware ports with the special basmon monitor program.

When you are done with the simulator it is time to program the chip using one of the supported programmer drivers.

