

mikroBasic PRO for 8051

PID: MIKROE-720

mikroBasic PRO for 8051 is a full-featured Basic compiler for 8051 devices. The feature rich environment you can experience today is the result of 15 years of dedicated work and steady progress. The ever-increasing number of hardware and software libraries, intuitive IDE, detailed documentation, a full box of additional tools.

Choose your license

mikroBasic PRO for 8051 has two licensing options available: the License Code and the USB Dongle License. Just choose the license type in the top right part of the page.

We also offer the Site License, if you run a two-person team, a whole R&D department, or teach a class, the Site License is the best choice. It allows you to own, manage and deploy multiple single licenses.

Learn more about our licensing options.

Your Strong Ally.

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[**DOWNLOAD**](#)

<https://download.mikroe.com/setups/compilers/mikrobasic/8051/mikrobasic-8051-setup-v360.zip>

[**ROADMAP**](#)

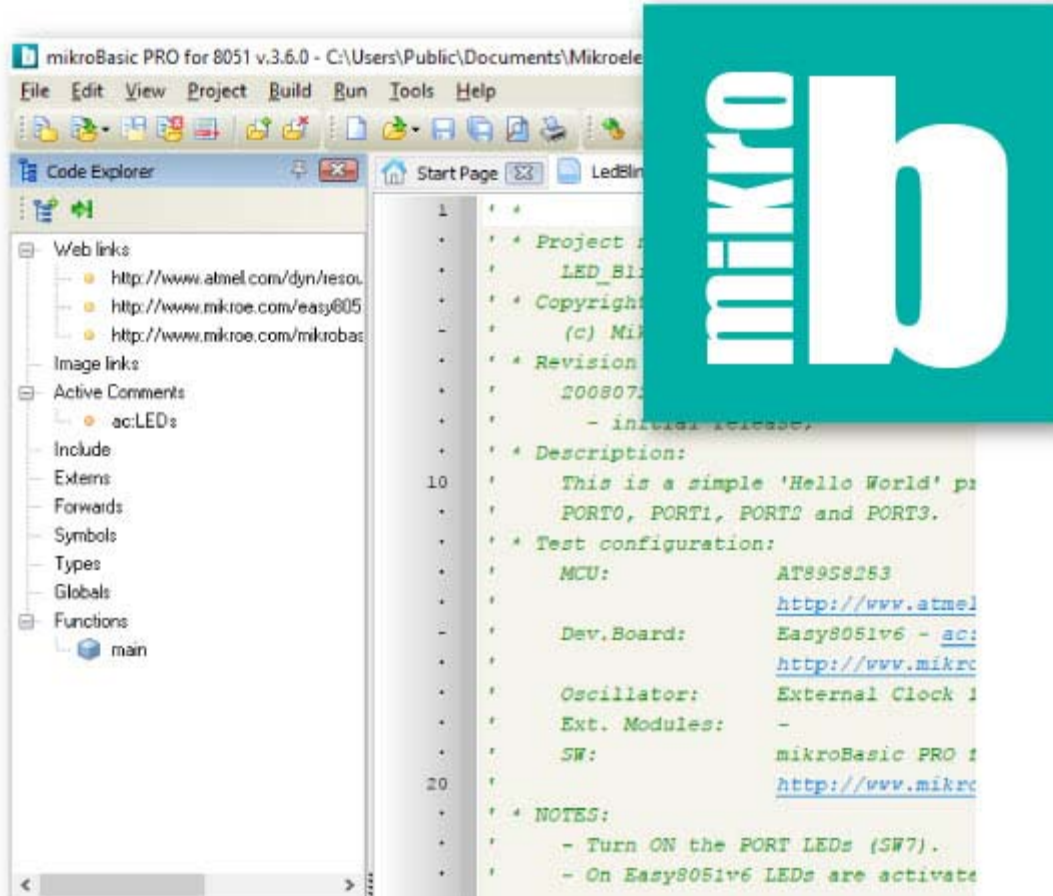
[**QUICK START GUIDE**](#)

1200 LIBRARY FUNCTIONS

104 CODE EXAMPLES

202 SUPPORTED MCUs

 LIFETIME LICENSE



You will love mikroBasic!

1-TIME PAYMENT, LIFETIME LICENSE

Pay once and never worry about it again. Once you buy the compiler you are entitled to lifetime free upgrades. Upgrading the compiler takes only a few minutes and a few clicks. We are constantly adding new features to the compiler, you can keep track of what is happening on the Software Roadmap page.

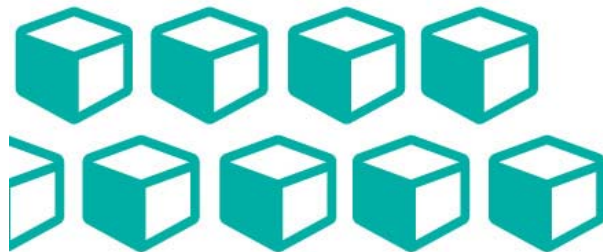
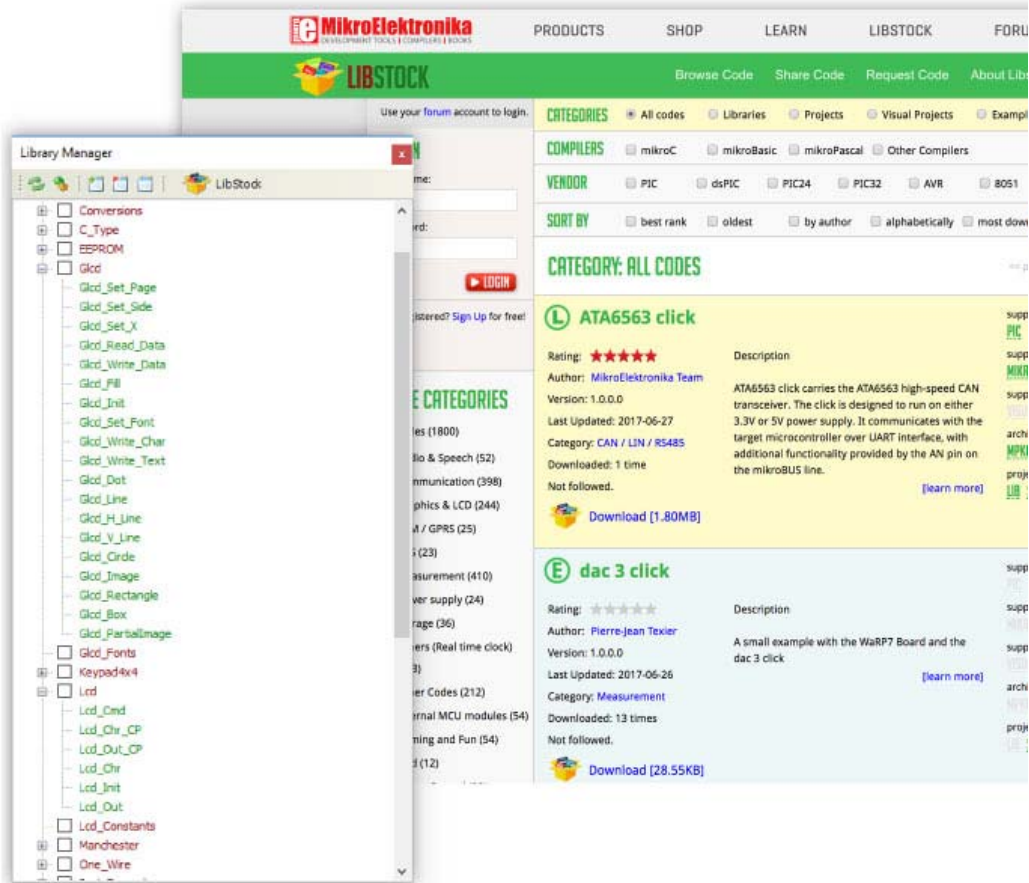
Our support team is always available – you can rely on our help while you are developing. The compiler license guarantees free product lifetime technical support.

1200 LIBRARY FUNCTIONS

mikroBasic offers a unique mechanism to easily use libraries in your project, just select the libraries you need and they will be instantly available in your code. No need for dozens of #include directives. You can also install and manage third-party libraries using our package manager and library manager.

Simply select the libraries you need for your project, by checking the box. Or press the "Check All" button to include them all. With more than 1200 library functions you'll save time, effort and you'll write better code.

Visit LibStock and download fully functional and working projects, and install them with a single click.



104 EXAMPLES

Every single library that is in our compiler is covered by a working example. More than 104 ready-made working examples, to help you understand how the library works or give you useful code snippets for your project.

202 SUPPORTED MCUs

The mikroBasic PRO for 8051 currently supports 202 MCUs for 8051 and we are constantly adding new ones.

You can be part of the process by letting us know what microcontroller you wish to see supported next, by using our helpdesk and submitting a ticket.



MICROCHIP

Atmel®

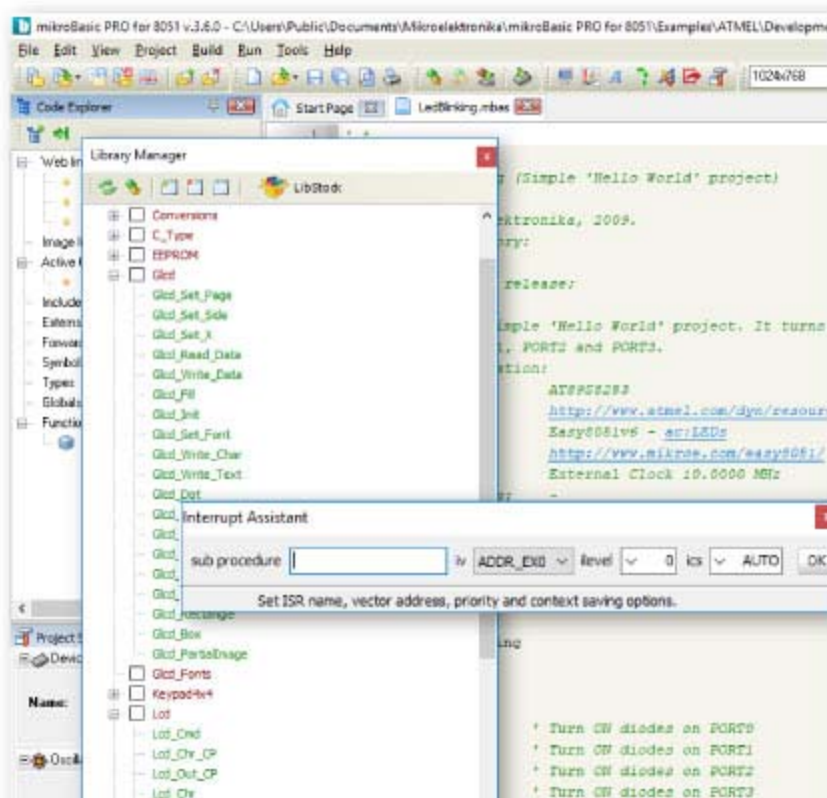
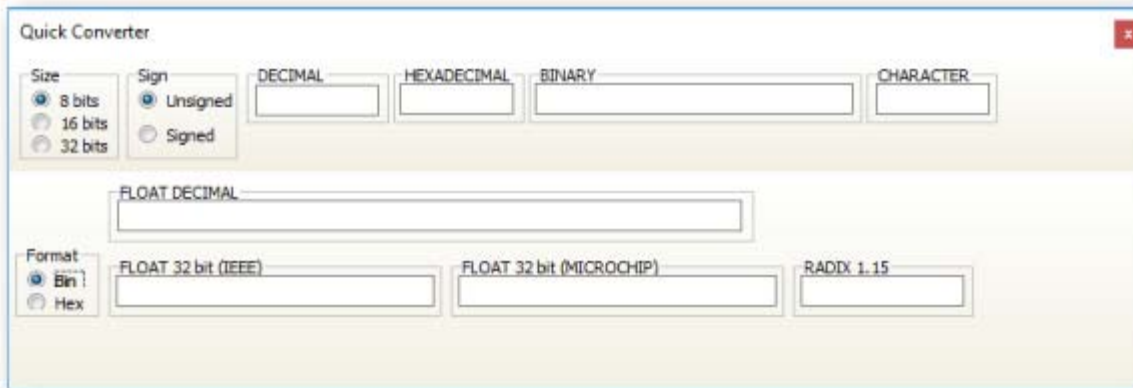
Toolchain	Vendor	Device	Pins	Flash (KB)	RAM (bytes)	Clock (MHz)	mikroICD	Datasheet
8051	Atmel	AT80C5112	48	8	0	33	No	
8051	Atmel	AT80C51SND1C	80	1	2	20	No	
8051	Atmel	AT83C5111	24	4	0	33	No	
8051	Atmel	AT83C5112	24	4	0	33	No	
8051	Atmel	AT83SND1C	80	64	0	20	No	
8051	Atmel	AT87C5111	24	4	0	33	No	
8051	Atmel	AT87C5112	48	8	0	33	No	
8051	Atmel	AT89C2051	20	2	0	24	No	
8051	Atmel	AT89C4051	20	4	0	24	No	
8051	Atmel	AT89C51	40	4	0	24	No	

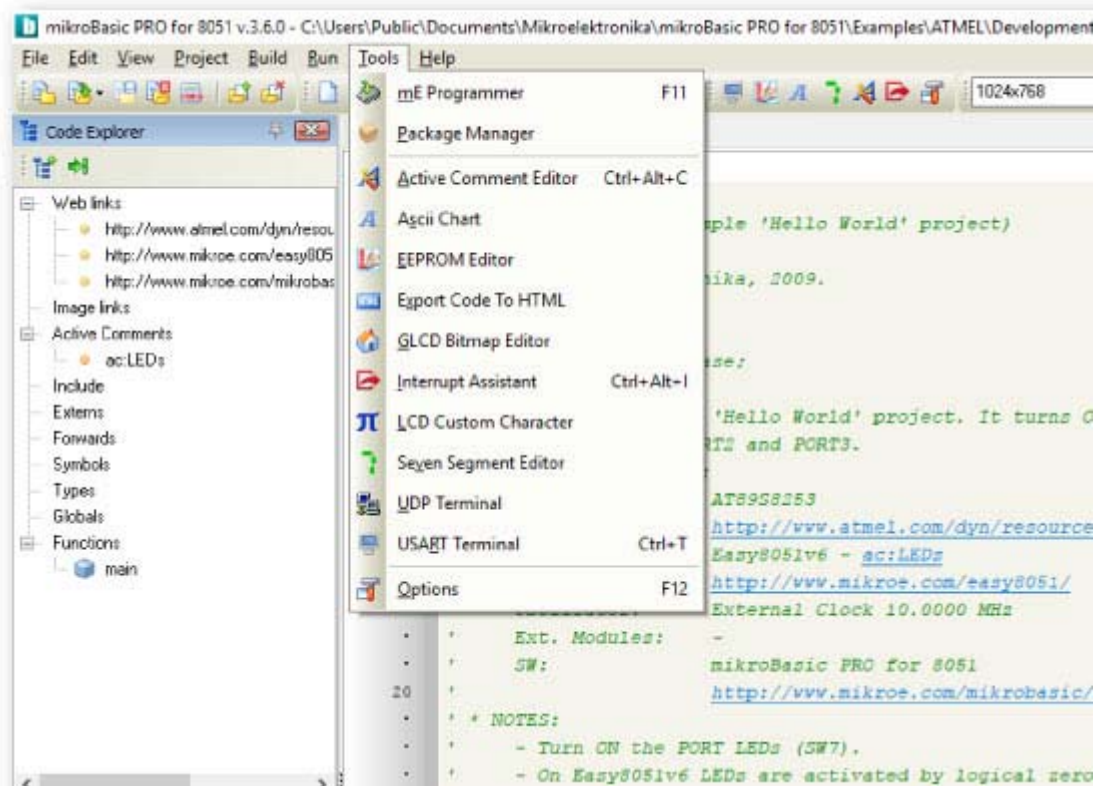
Showing 1 to 10 of 202 entries

IDE

The ideal environment for you to write, compile, execute, and debug your code. All the tools you could think of, and more, are there. The Library Manager, Interrupt Assistant, Project Explorer, Quick Converter and more.

[Click here](#) to get an in-depth explanation of each part of the IDE.



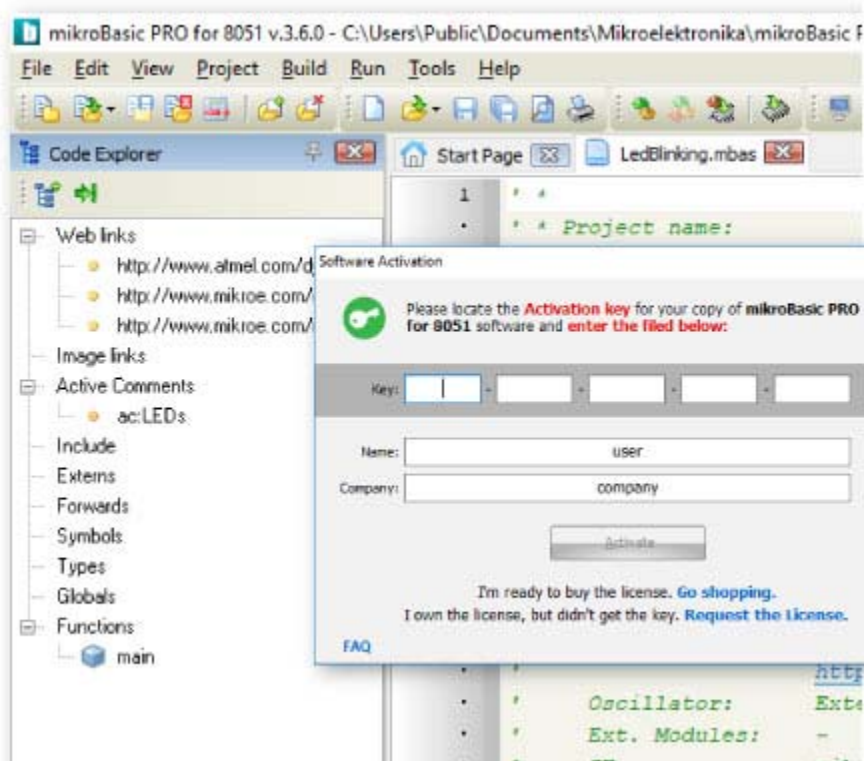
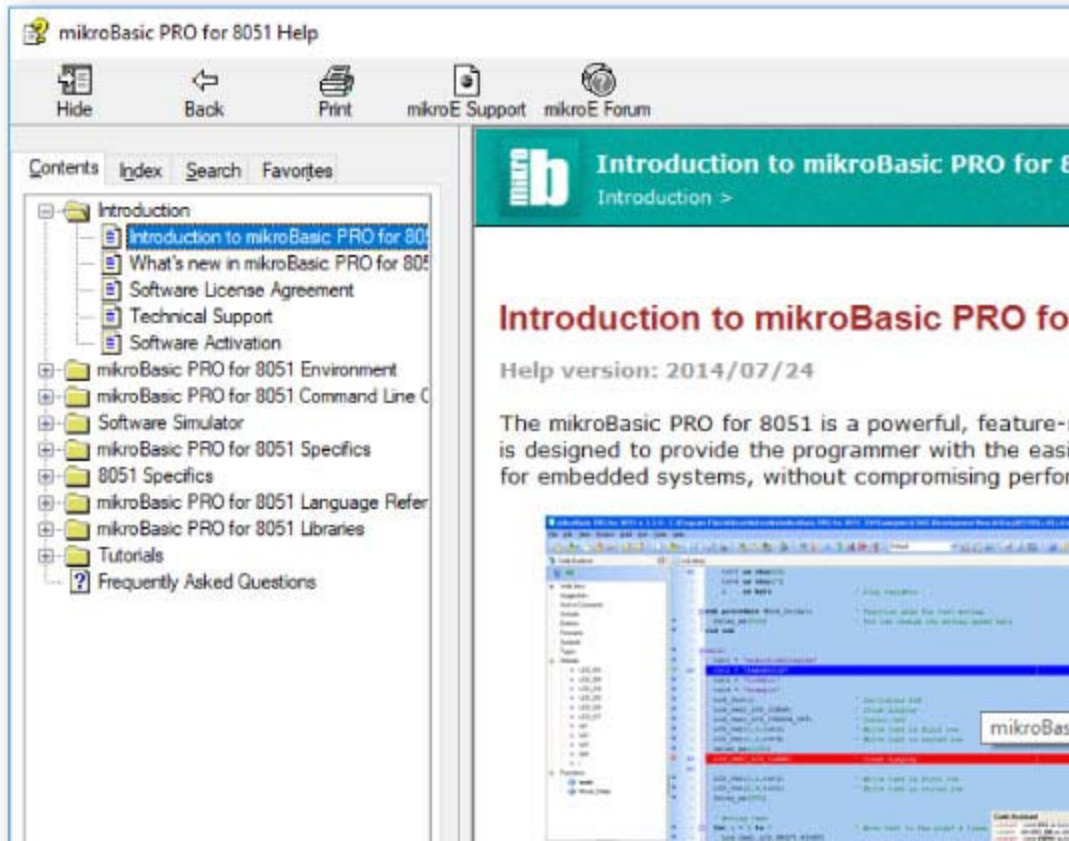


The perfect toolbox

mikroBasic comes equipped with fully-functional software tools that can boost your efficiency and do the job for you, so you can be more productive in your work: LCD Custom Character Tool, GLCD Bitmap Editor, Seven Segment Editor, UART Terminal, UDP Terminal, HID Terminal, ASCII Chart, Active Comments Editor, Interrupt Assistant, Advanced Statistics and much, much more.

Comprehensive documentation

The help file is the best place to start if you want to get to know the compiler. The easy-to-read format and detailed explanations of every functionality and feature will make you an expert in no time.



Flexible licensing options

LICENSE CODE

Buy the compiler and the License Code will be sent to your inbox instantly. Once you activate the license you can use it on up to two computers.

USB DONGLE

Do you need a portable license, that can be used on multiple computers? USB Dongle license is the perfect solution.

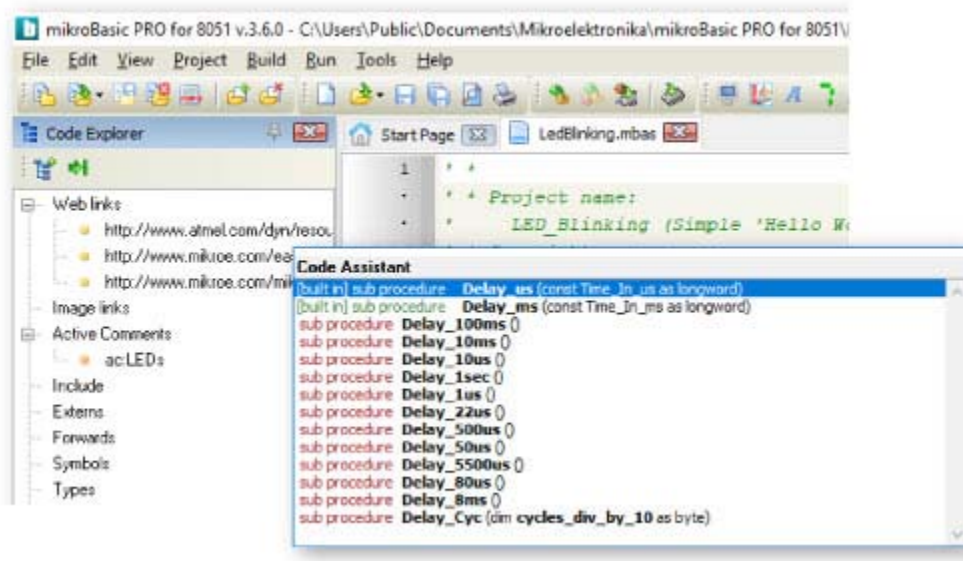
Start developing out of the box!

mikroLab - essential tools for the efficient developer

Code, compile, program, and debug – all in one environment. Choose the development board, and you'll soon see that the rest of the tools are perfectly arranged around it.

mikroLab contains everything a developer needs to explore the possibilities of the microcontroller architectures we offer: a development board (with integrated programmer and debugger), the compiler license, an assortment of accessories, and as a bonus, a free license for one of our GUI design tools (either Visual TFT or Visual GLCD).

IDE



Code Assistant

Control-space is probably the most widely used shortcut among programmers. Why? Because it initiates Code Assistant - programmer's first aid kit. No one needs to memorize function names.

Focus on your code, and let the syntax write itself correctly. Write function calls with one click of your keyboard. **Code assistant in mikroBasic PRO for AVR** also suggests correct names of constants, URLs, Active comments and variables, so you have it all covered. You don't ever have to get another Syntax error message.

Active Comments

We have developed Active Comments - a unique feature of mikroBasic PRO for AVR. Any comment can become your multimedia event hook.

Add images, files and URLs to any active comment and assign events as you like.

Right Mouse Click can open browser with URL, Mouse Over can display the image, and Double Click can open a specified file.

You can add:


- Images
- Files
- URLs


This is a simple demonstration of the GLCD library routines:


- Init and Clear (pattern fill)
- Image display
- Basic geometry - lines, circles, boxes and rectangles
- Text display and handling

Test configuration:

MCU: AT89S2253

Dev.Board:  rod.docx

Oscillator:  ts/vario

Ext. Modules:  i/ (SW7.7).

SW:

NOTES:

- Turn on GLCD

```

fram GLCD_Test
lcd module connect
GLCD_DataPort as

GLCD_CS1 as sbit at P2_0_bit      * GLCD chip select 1 signal
GLCD_CS2 as sbit at P2_1_bit      * GLCD chip select 2 signal
GLCD_RS  as sbit at P2_2_bit      * GLCD register select signal
GLCD_RM  as sbit at P2_3_bit      * GLCD read/write signal
GLCD_EN  as sbit at P2_4_bit      * GLCD enable signal
GLCD_RST as sbit at P2_5_bit      * GLCD reset signal

id Glcd module connections

counter as byte
someText as char[16]

procedure Delay25 ()                * 2 seconds delay function
lay_ms(2000)
end
    
```

Active Comments Editor

Select Active Comment: GLCD

Active Comment Actions: New, Rename, Delete

Properties:

- Attributes
 - Url
 - Image: easy_8051_glcd_128x...
 - File: None
- Events
 - OnLeftClick + Alt: None
 - OnRightClick: None
 - OnDoubleClick: None
 - OnMouseOver: PreviewImage

Misc: Add Image To Project, Add File To Project

Save, Cancel

mikroBASIC PRO for 8051 v.3.6.0 - C:\Users\Public\Documents\Mikroelektronika\mikroBASIC PRO for 8051\Examples\ATMEL

File Edit View Project Build Run Tools Help

Code Explorer Start Page LedBlinking.mbas

Web links:

- http://www.atmel.com/dyn/resou
- http://www.mikroe.com/easy805
- http://www.mikroe.com/mikrobas

Image links

Active Comments: ac-LEDs

```

Project name:
LED_Blinking (Simple 'Hello World' projec
Copyright:
    
```

Interrupt Assistant

sub procedure [] N ADDR_830 level 0 cs AUTO OK

Set ISR name, vector address, priority and context saving options.

Interrupt Assistant

The compiler also includes the Interrupt Assistant, that can help you in configuring interrupts.

You can launch it from the drop-down menu Tools › Interrupt Assistant.

Parameter Assistant

Many functions. Even more parameters. Was it word, or byte? You don't have to scroll through Help file.

Just hit CTRL+SHIFT+SPACE and function parameters will be listed for you.

```
Glcd_Fill(dim x_upper_left as byte, dim y_upper_left as byte, dim x_bottom_right as byte, dim y_bottom_right as byte, dim color as byte)

Glcd_Box(52, 40, 124, 63, 1)      ' Draw box
Glcd_Rectangle(5, 5, 84, 35, 1)   ' Draw rectangle
Glcd_Line(0, 0, 127, 63, 1)      ' Draw line
Delay2S()
counter = 5

while (counter <= 59)              ' Draw horizontal and vertical lines
  Delay_ms(250)
  Glcd_V_Line(2, 54, counter, 1)
  Glcd_H_Line(2, 120, counter, 1)
  Counter = counter + 5
wend

Delay2S()
```

```
Glcd_Box(52, 40, 124, 63, 1)      ' Draw box
Glcd_Rectangle(5, 5, 84, 35, 1)   ' Draw rectangle
Glcd_Line(0, 0, 127, 63, 1)      ' Draw line
Delay2S()
counter = 5

69 | while (counter <= 59)          ' Draw horizontal and vertical lines
    |   while (counter <= 59)      ' Draw horizontal and vertical lines
    |     Delay_ms(250)
    |     Glcd_V_Line(2, 54, counter, 1)
    |     Glcd_H_Line(2, 120, counter, 1)
    |     Counter = counter + 5
    |   someText = "mikroE"
    |   Glcd_Set_Font(@Character8x7, 8, 7, 32) ' Choose font "Character8x7"
    |   Glcd_Write_Text(someText, 1, 7, 2)   ' Write string
```

Code Folding

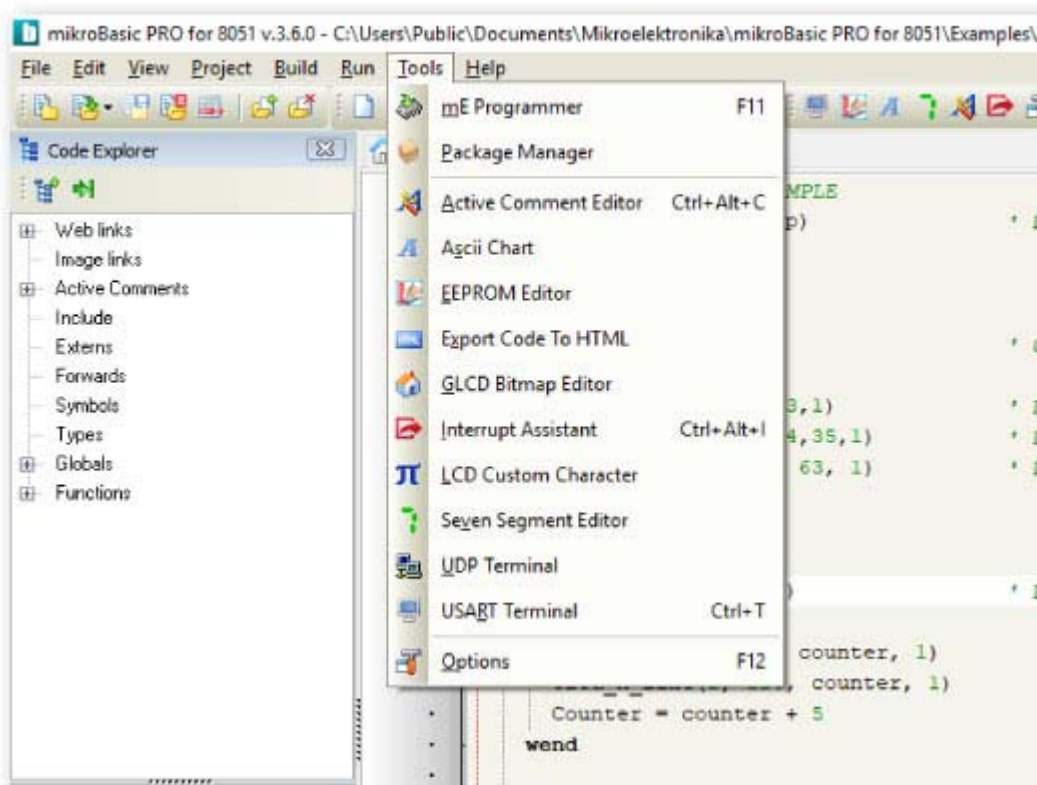
When your code overgrows the size of your screen, it's always better to fold those completed blocks, and work in a clearer surrounding.

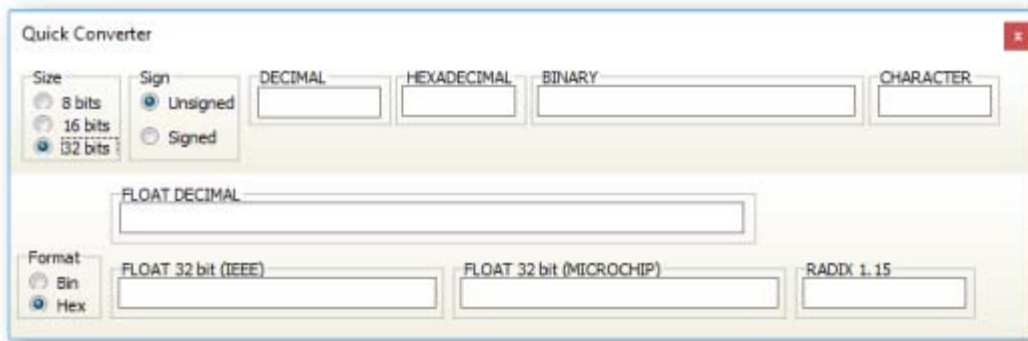
This way you can always see the big picture.

Built-in tools

What's the point of a compiler if you have to do all the hard work yourself. mikroBasic PRO for AVR offers you several most useful integrated tools that will help you get the job done with minimum effort.

- Active Comment Editor
- ASCII chart
- Export Code To HTML Tool
- GLCD Bitmap Editor
- Interrupt Assistant
- LCD Custom Character
- Seven Segment Editor
- UDP Terminal
- USART Terminal





Quick Converter

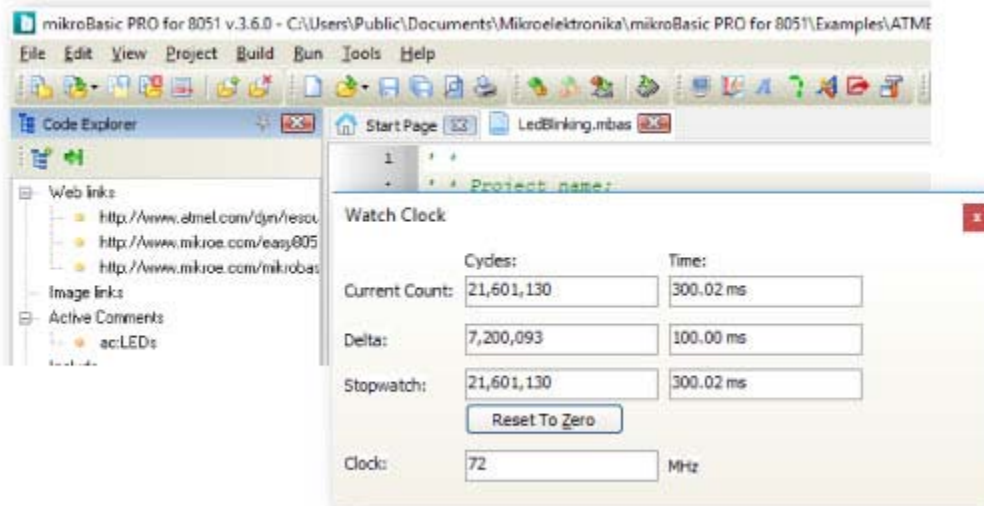
Your fast pocket converter of binary, float, HEX and Radix 1.15 formats into formats you need in your code.

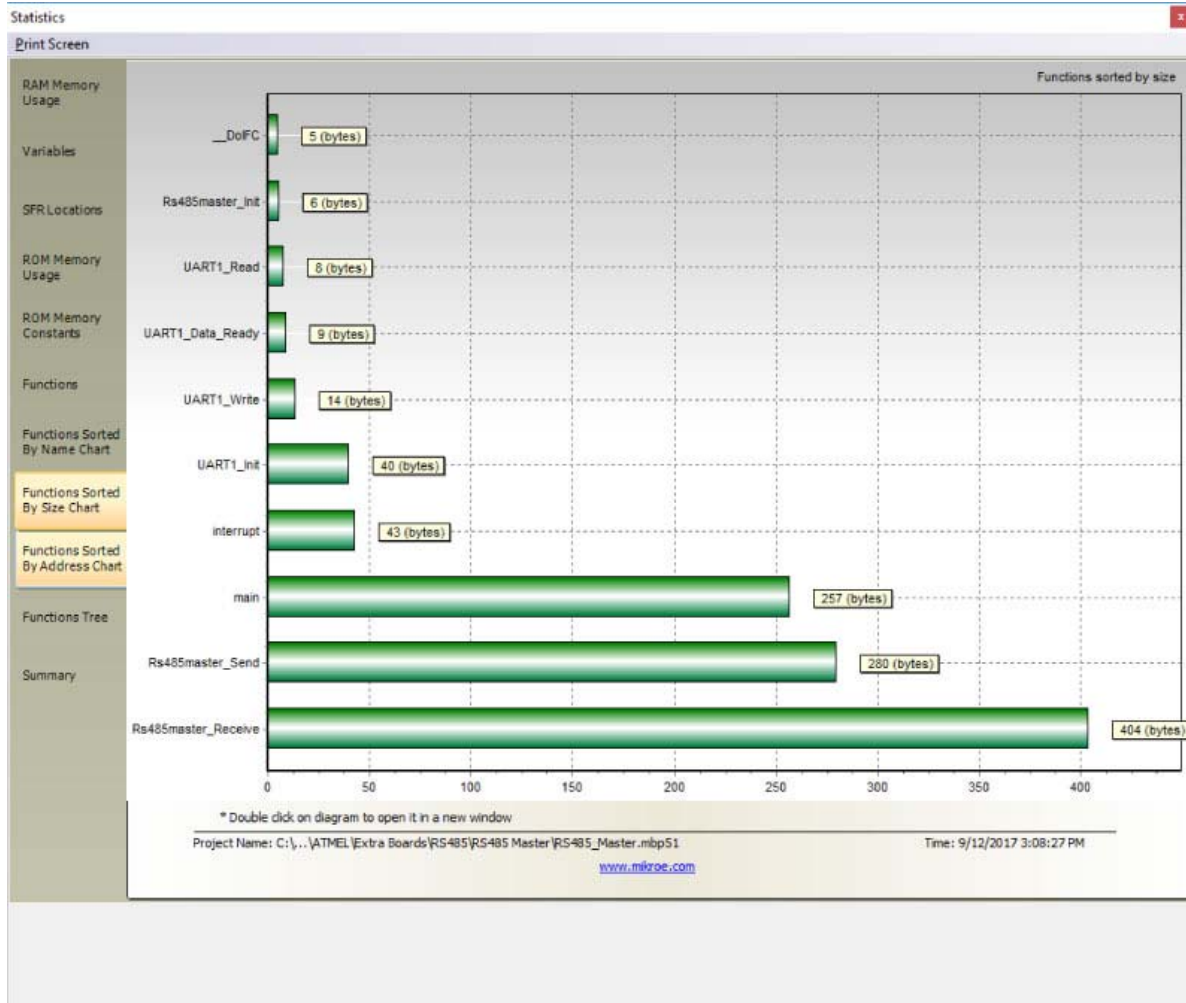
It even displays ASCII values of your bytes.

Software Simulator

If you want to go through your code and monitor the values of your variables searching for bugs and errors, Software Simulator is the best way to do so.

Software simulator supports all debugging modes as hardware debugger, but instead of executing the code on real hardware, it simulates code flow on your PC. Using Watch Clock you can precisely measure the code execution time in microseconds or in clock cycles.





Advanced Statistics

After you build your project, you can always look under the hood with mikroBasic's Advanced Statistics. It is a powerful tool that visually describes most important information about your project.

Take a look at your variables, arrays and constants and know how much memory your program consumes. See which function calls which in the functions tree window. See how big are your functions and how are they linked in memory, which is especially important if you want to write your own bootloader applications.

mikroC, mikroBasic, mikroPascal for 8051

Further details will be revealed as the project develops.

- Release date: unspecified
- IDE build: v6.3.0
- cmd line build: v6.3.0

Make sure you have the latest version of the 8051 compilers while you wait for the new one.

License owners are entitled to a lifetime of free upgrades.

Compiler Changelog

Version 3.6.0

IDE reinvented

Just update your compiler and you will feel like getting into a shiny new car. There are over 35 new features, and 110 improvements.

New microcontrollers

We have supported 17 new C8051F3XX and C8051F5XX microcontrollers from Silicon Labs©.

New Licensing Options

New Activation and Registration keys are quick and elegant solution for unlocking the Demo limit and registering your license.

Live Update Service

Waiting is over. With newly integrated Live Update tool you can receive new features and improvements instantly!

<http://download.mikroe.com/setups/compilers/mikrobasic/8051/mikrobasic-8051-setup-v360.zip>

Compiler

- **New!** Additional devices supported

```
C8051F348 C8051F349
C8051F34A C8051F34B
C8051F34C C8051F34D
C8051F520 C8051F521
C8051F523 C8051F524
C8051F530 C8051F531
C8051F533 C8051F534
C8051F536 C8051F537
C8051T606
```

- **New!** Introduced "iv" keyword for linking functions as interrupt handlers
- **New!** Interrupt context saving handling (ICS keyword)
- **New!** Initializer of local variables can be variable expression
- **New!** Support for anonymous unions and anonymous structures
- **Improved** Peephole optimizer minor changes
- **Improved** Faster loading of mcl files
- **Improved** Faster compiler and linker
- **Improved** Several predefined constant added (_8051_...)
- **Fixed:** Const Folding of ternary operator.
- **Fixed:** Handling of void in expressions.
- **Fixed:** Problems with large model.
- **Fixed:** Several bug fixed.

IDE

- **New!** Live update support.
- **New!** Added shortcut button for Package examples.
- **New!** Pointer handling in watch window shows data it points to.
- **New!** Function pointers show the name of the function currently pointing at.
- **New!** Value hint in debug mode for pointers shows data it points to.
- **New!** Code assistant (CTRL+SPACE) for pointer to structures.
- **New!** Welcome screen added.
- **New!** Interrupt assistant added.
- **New!** Update Project Manager after cleaning project files using ClearProject.
- **New!** Double Click on bookmark in Bookmark editor opens file and positioning on line where bookmark is placed.
- **New!** Remove all breakpoints option implemented.
- **New!** Added option to reload project file which has been externally changed.

- **New!** Breakpoints are now saved to file.
- **New!** Breakpoints are loaded when opening file.
- **New!** Double click on break point in breakpoint's list opens editor and set cursor on line with breakpoint.
- **New!** Delete one breakpoint from breakpoint list is possible now.
- **New!** Project Explorer added.
- **New!** Shortcut CTRL + ALT + S (show Statistics)
- **New!** Option to always rebuild all sources
- **New!** Option to enable/disable a breakpoint
- **New!** Image Preview window
- **New!** Added toolbar shortcut to open Examples folder
- **New!** GIF images supported in Project Manager and Active Comments
- **New!** Support for Package Manager
- **New!** Active Comments editor
- **New!** Highlighting routine under cursor in Code Explorer
- **New!** Export Project feature, useful for backing up a project and all relevant files with one mouse click
- **New!** Sorting Procedures List by name and by line number
- **New!** Drag and drop files to Project Manager
- **New!** Labels listed in Code Explorer
- **New!** Default symbol representation in Watch Window is taken from symbol definition
- **New!** Option to always display Messages when building project
- **New!** Legacy layout resembles the look of earlier mikroIDE versions
- **New!** Shortcut CTRL+ALT+M - Open MLK file
- **New!** Shortcut CTRL+ALT+D - Open DEF file
- **Improved** Licensing mechanism
- **Improved** Bookmark Editor. You can now view bookmark IDs.
- **Improved** Bookmark Editor. You can now see all files in project containing any bookmark.
- **Improved** New Project wizard (project folder selection, existing project files added to list).
- **Improved** New Project Wizard.
- Reduced number of steps for creating new project.
- File name and file path now separated.
- **Improved** Library manager. Faster loading of libraries.
- **Improved** Search project files in Windows Explorer style.
- **Improved** Add project to project group by single mouse click.
- **Improved** Search Paths Editor.
- Copy/Cut/Paste/Select All options for search paths editor
- Assigned shortcut CTRL + SHIFT + P
- **Improved** Statistics is no longer a "modal" window, but rather "stay on top"
- **Improved** Code Explorer
- **Improved** Add to watch list mechanism
- **Improved** Spell checker for all files included in current project
- **Improved** Code and Parameter Assistant
- **Improved** Library manager loads MCLs faster
- **Improved** More user options for control of optimizations
- **Improved** Tools moved to panels. Now they are dockable and they receive the Color Style from IDE
- Additional options included, users wishes fulfilled, minor bugs fixed
- **Improved** Code Assistant (CTRL+SPACE) loads faster
- **Improved** Faster simulation of Delay_ms and Delay_us functions
- **Improved** Build all projects with option to stop the process

- **Improved** Project manager shows the total number of projects in project group
- **Improved** Replace dialog is being moved to ensure the target text is visible in editor
- **Improved** Double click on warning message about non existing search paths opens Search Paths dialog
- **Improved** Print & Print preview, fixed print selection
- **Improved** Quick convertor
- **Improved** Project Manager shows ASM files for all source files
- **Fixed:** Issue with setting MCU frequency.
- **Fixed:** Creating project with empty name.
- **Fixed:** Creating project which name which starts with a digit.
- **Fixed:** "File Save As", "Project Save As" and "Save Project Group" give wrong file filters.
- **Fixed:** Active comment starts with a digit caused IDE to crash.
- **Fixed:** It is not possible to save a project group when projects were added from Project Explorer.
- **Fixed:** Statistics window did not always stayed on top.
- **Fixed:** In debug mode changing focus between editor and watch list was not momental (Insert, Delete key...).
- **Fixed:** Closing file while compile is in progress caused IDE to crash.
- **Fixed:** Search paths was not refreshed on starting IDE if "Search Path" window was opened when IDE was closed.
- **Fixed:** Removed space characters in front of line code When a bookmarked line is displayed in bookmark window.
- **Fixed:** Project settings schemes, some schemes were outdated.
- **Fixed:** Remove recent project from Start Page caused exception.
- **Fixed:** Code explorer, when undocked worked incorrectly.
- **Fixed:** Progress Bar window did not have border.
- **Fixed:** Undo command in editor doesn't return to saved state of file.
- **Fixed:** SaveBookmarks doesn't work.
- **Fixed:** LoadBookmarks doesn't work.
- **Fixed:** Multiple row word-by-word selection.
- **Fixed:** Warnings/Hints check box.
- **Fixed:** A lot of Search/Replace quirks and bugs.
- **Fixed:** Statistics - uncorrect displaying of free RAM
- **Fixed:** Loosing all breakpoints when closing editor.
- **Fixed:** P16ENH simulator did not performe shadow register switching for interrupt
- **Fixed:** In some cases IDE freezes if MCU is changed in Project Settings
- **Fixed:** Visible Statistics are updated after build
- **Fixed:** 32 bit icons fail to load on some graphic cards
- **Fixed:** Auto Save feature
- **Fixed:** Indent guides cannot be turned off
- **Fixed:** Can not read registry key for WIN7 with UAC on
- **Fixed:** Simulator can not start-up in some cases if handler functions existed
- **Fixed:** Uncheck in Library Manager does not clear Code Assistant list
- **Fixed:** Check in Library Manager clears Code Assistant list
- **Fixed:** Compiler version is not visible in caption if no projects are open
- **Fixed:** Parameter assistant ignores commas when switching to another parameter
- **Fixed:** Improper display of RAM memory usage in statistics
- **Fixed:** AutoComplete - Incomplete procedure parameter list
- **Fixed:** Various docking windows issues
- **Fixed:** Save project group on close
- **Fixed:** UAC problem on Windows Vista and Windows 7

- **Fixed:** Windows Vista and Windows 7 manifest problem
- **Fixed:** Code Explorer on Windows 7 x64 does not display images properly
- **Fixed:** EEPROM editor loading .ihex and .eed files problems
- **Fixed:** Find declaration problems when includes are present
- **Fixed:** Project Manager - Close Project - Ide crashes when try to Close Project
- **Fixed:** Project Manager - Add file to project - crashes when try to Add project and nothing is selected in Project Manager
- **Fixed:** Project Manager - Quick switch between project crashes IDE
- **Fixed:** Project Manager - Cann't colse a file in Editor if it firstly removed from Project Manger
- **Fixed:** Project Manager - Still generate an ASM file even if it's dissabled in options
- **Fixed:** Project Manager - When open a group of projects in PM title bar shows all projects names
- **Fixed:** Project Manager - Switch between projects in project group on double click
- **Fixed:** Project Manager - On load project group it is possible to build a project for a wrong chip
- **Fixed:** Auto save on Build works only for main module
- **Fixed:** Code Explrorer - Colors for funtions and procedures are the same
- **Fixed:** Statistics - RAM usage differs in Statistics window and Messages window
- **Fixed:** Can not resize variabes column in statistic window
- **Fixed:** Active Comments do not genrate after sign '-'
- **Fixed:** IDE crashes if try to close project and building is still in process
- **Fixed:** Incomplete procedure parameter list
- **Fixed:** Docking windows problem
- **Fixed:** On Close Project Group - Save project group
- **Fixed:** Code Explorer works faster for code over 5000 lines
- **Fixed:** New Project Wizard adds the main file at the end of files list
- **Fixed:** Select All does not take effect
- **Fixed:** Open Project Group can build project before project is completely open
- **Fixed:** Close Project Group - always ask for Save
- **Fixed:** If two editors are undocked Select All perfoms action in inactive editor
- **Fixed:** Steping over a fuction with arguments opens dissassembly listing in some cases
- **Fixed:** Print preview for Arctic theme shows entire page in black
- **Fixed:** Cancelling changes in [Options -> Tools] does not reset tools to previous state
- **Fixed:** Step into function with parameters
- **Fixed:** Bookmarks window does not reflect changes when lines are inserted/deleted
- **Fixed:** Cut/Copy/Paste operations in Watch Window and Quick Converter mistakenly perform the action into active editor
- **Fixed:** ALT+Key invokes IDE commands instead of opening menu items
- **Fixed:** Program error when docking Project Manager inside Editors window
- **Fixed:** Tool parameter "%LIST_FILE_NAME" does not add the name of listfile
- **Fixed:** Save project group on IDE closing
- **Fixed:** Slow editor response in certain cases
- **Fixed:** Adding variable passed by reference to the Watch Window causes error

Examples

- New! Added examples for BIG8051 development system.

Compiler

- **New Additional chips supported:**

AT80C5112	C8051F011	C8051F220	C8051F352	C8051T612
AT80C51SND1C	C8051F012	C8051F221	C8051F353	C8051T613
AT83C5111	C8051F015	C8051F226	C8051F360	C8051T614
AT83C5112	C8051F016	C8051F230	C8051F361	C8051T615
AT83SND1C	C8051F017	C8051F231	C8051F362	C8051T616
AT87C5111	C8051F018	C8051F236	C8051F363	C8051T617
AT87C5112	C8051F019	C8051F300	C8051F364	T83C5101
AT89C2051	C8051F020	C8051F301	C8051F365	T83C5102
AT89C4051	C8051F021	C8051F302	C8051F366	T87C5101
AT89C51	C8051F022	C8051F303	C8051F367	T89C5115
AT89C5131	C8051F023	C8051F304	C8051F368	T89C51AC2
AT89C5132	C8051F040	C8051F305	C8051F369	T89C51CC01
AT89C51CC03	C8051F041	C8051F310	C8051F410	T89C51CC02
AT89C51ED2	C8051F042	C8051F311	C8051F411	
AT89C51IC2	C8051F043	C8051F312	C8051F412	
AT89C51ID2	C8051F044	C8051F313	C8051F413	
AT89C51RB2	C8051F045	C8051F314	C8051F520A	
AT89C51RC	C8051F046	C8051F315	C8051F521A	
AT89C51RC2	C8051F047	C8051F316	C8051F523A	
AT89C51RD2	C8051F060	C8051F317	C8051F524A	
AT89C51SND1C	C8051F061	C8051F320	C8051F526A	
AT89C52	C8051F062	C8051F321	C8051F527A	
AT89C55WD	C8051F063	C8051F326	C8051F530A	
AT89LP428	C8051F064	C8051F327	C8051F531A	
AT89LP828	C8051F065	C8051F330	C8051F533A	
AT89LS51	C8051F066	C8051F331	C8051F534A	
AT89LS52	C8051F067	C8051F332	C8051F536A	
AT89LS53	C8051F120	C8051F333	C8051F537A	
AT89LS8252	C8051F121	C8051F334	C8051F920	
AT89LV51	C8051F122	C8051F335	C8051F921	
AT89LV52	C8051F123	C8051F340	C8051F930	
AT89LV55	C8051F124	C8051F341	C8051F931	

AT89S52E	C8051F125	C8051F342	C8051T600
C8051F000	C8051F126	C8051F343	C8051T601
C8051F001	C8051F127	C8051F344	C8051T602
C8051F002	C8051F130	C8051F345	C8051T603
C8051F005	C8051F131	C8051F346	C8051T604
C8051F006	C8051F132	C8051F347	C8051T605
C8051F007	C8051F133	C8051F350	C8051T610
C8051F010	C8051F206	C8051F351	C8051T611

- **New:** Support for Silicon labs 8-bit mixed-signal MCUs
- **New:** Added new examples for both SiLabs and ATMEL MCUs
- **New:** SFR paging support added to linker
- **New:** mlk files improved (XML file type)
- **New:** sbit and bit variables allocation allowed in all data spaces (bdata, data, idata, pdata, xdata)
- **New:** Multipass allocation of functions
- **New:** Compress calls optimization added to Linker
- **New:** Compress jumps optimization added to Linker
- **New:** Libraries added: SMBus, TWI, PrintOut
- **New:** X2 option added (ATMEL family)
- **New:** Added possibility to org externally defined functions
- **New:** OrgAll function (refer to help for details)
- **Improved:** Pointer syntax (refer to help for details)
- **Improved:** Absolute directive syntax (refer to help for details)
- **Improved:** Type definition syntax (refer to help for details)
- **Improved:** Delay_ms and Delay_us built-ins improved
- **Improved:** RAM usage
- **Improved:** Handling of interrupt
- **Improved:** Pointer to functions added to libraries (SPI, UART)
- **Improved:** Greater flexibility for libraries using SPI and UART modules (SPI_Glcd, Ethernet, RS485 etc.)
- **Improved:** Interrupt handling
- **Improved:** Initialization sections
- **Improved:** Minor bugs fixed
- **Improved:** Help revised and updateddel.

IDE

- **New:** Active comments added to editor (web links as active sections in comments)
- **New:** Web links node added to code explorer
- **New:** Advanced EEPROM editor tool
- **New:** Quick convertor added and improved
- **New:** Shortcut CTRL+ALT+M - Open MLK file
- **New:** Shortcut CTRL+ALT+D - Open DEF file
- **New:** Sorting Procedures List by name and by line number
- **New:** Drag and drop files to Project Manager
- **New:** SFR Paging added to simulator RAM View

- **New:** XRAM added to simulator RAM View
- **Changed:** Project file extension changed from *.mbproj to *.mbp51
- **Changed:** Project group extension changed from *.mpgroup to *.mb51group
- **Changed:** New Project Wizard (all libraries checked option added)
- **Improved:** Statistics
- **Improved:** Find in files
- **Improved:** Shell open for files in Project Manager
- **Improved:** Auto Complete
- **Improved:** Auto Correct
- **Improved:** Project Open
- **Improved:** Print preview added, print options problem solved
- **Improved:** Build all projects with option to stop the process
- **Improved:** Project manager shows the total number of projects in project group
- **Improved:** Replace dialog is being moved to ensure the target text is visible in editor
- **Improved:** Watch values shows simulation time in us/ms
- **Improved:** External nodes added to code explorer
- **Improved:** Enhancement of IDE styles set
- **Improved:** Asm files added for all source files in the Project Manager window
- **Improved:** Code Assistant display improved for local declarations
- **Fixed:** IDE Error when deleting lines above breakpoint
- **Fixed:** Bookmarks window does not reflect changes when lines are inserted/deleted
- **Fixed:** Cut/Copy/Paste operations in Watch Window and Quick Convertor mistakenly perform the action into active editor
- **Fixed:** ALT+Key invokes IDE commands instead of opening menu items
- **Fixed:** Program error raised if docking Project Manager inside Editors window is performed
- **Fixed:** EEPROM editor freezes if mouse scrolls too fast

Version 1.1

- **Fixed:** smaller bugs and corrected errors in def files

Version 0.92 beta

Compiler

- **New** Command line interface
- **New:** Interface section fully supported
- **New:** Forward declaration fully supported
- **New:** Function result can be a complex type
- **New:** Pointer to function and function call through pointers
- **New:** Bit, sbit variables support
- **New:** Small, compact and large memory model support
- **New:** Efficient file format for libraries (.MCL)
- **New:** Additional set of keywords to facilitate 8051 programming:

```
code    pdata    sbit
data    small    bit
```

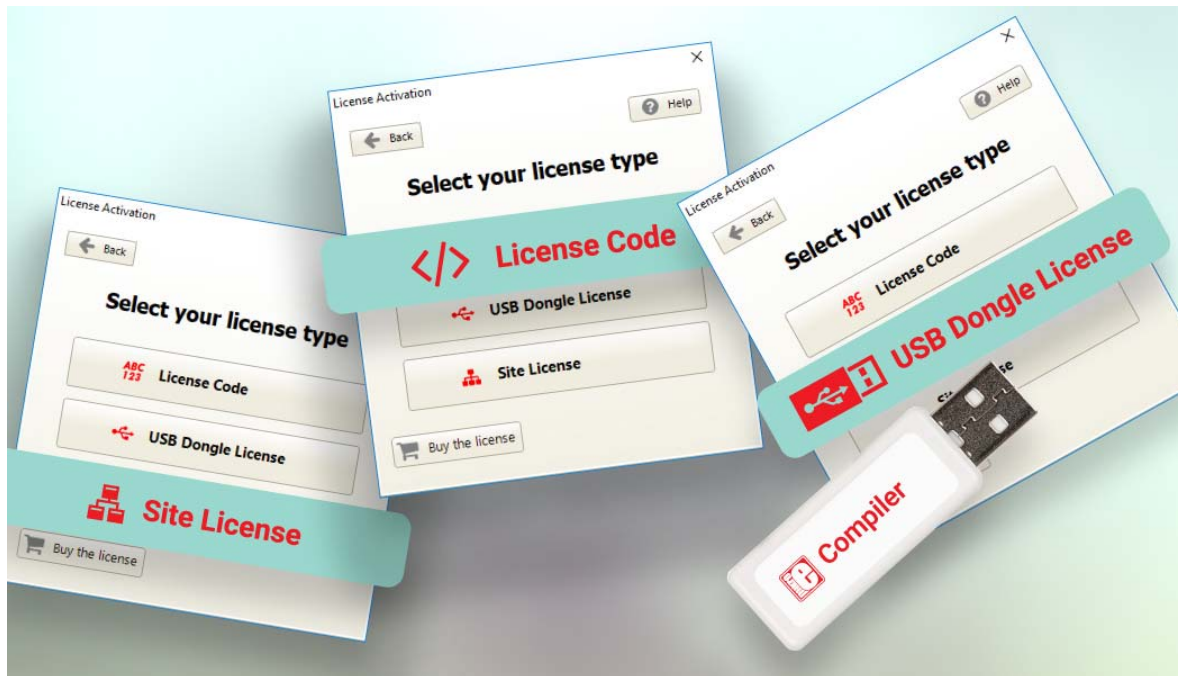


```
idata compact sfr
bdata large ilevel
xdata at
```

- **New:** PeepHole optimisation added to optimizer
- **New:** Compiler front end redesigned for faster compilation
- **Improved:** Memory management, initialisation sections introduced
- **Improved:** Fast and efficient linker algorithm
- **Improved:** Fast Hex generator
- **Improved:** Fast loading and writing compiled libraries (.MCL)
- **Improved:** Messaging system
- **Improved:** Output options control
- **Improved:** Libraries redesigned and rewritten to meets demands of 8051 architecture
- **Improved:** Fast and small executable code
- **Improved:** Optimizer rewritten to meet demands of 8051 architecture

IDE

- **New:** Customizable new look
- **New:** Layout manager
- **New:** Project manager
- **New:** Library manager
- **New:** Drag and drop files to editor
- **New:** Code folding feature
- **New:** Autocorrect notification
- **New:** Declaration syntax checker
- **New:** Macro manager
- **New:** New project wizard
- **New:** Bug report tool
- **New:** Templates for AutoComplete
- **New:** Complete Help for IDE + Language and library reference and 8051 specifics
- **New:** Spell checker
- **New:** Image files (.jpg, .bmp) can be added to project
- **New:** Grep search
- **Improved:** Brackets painter
- **Improved:** Pairs painter
- **Improved:** Code explorer
- **Improved:** Docking manager
- **Improved:** Messages window with filtering
- **Improved:** Grep search feature
- **Improved:** Code Assistant, Parameter Assistant



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