

# Micrium

Empowering Embedded Systems

**μC/OS-II**

**μC/Probe**

**μC/LCD**

and the

**NXP LPC2378 Processor**

(Using the Keil MCB2300 Evaluation Board)

**Read Me**

[www.Micrium.com](http://www.Micrium.com)

## About Micrium

Micrium provides high-quality embedded software components in the industry by way of engineer-friendly source code, unsurpassed documentation, and customer support. The company's world-renowned real-time operating system, the Micrium **μC/OS-II**, features the highest-quality source code available for today's embedded market. Micrium delivers to the embedded marketplace a full portfolio of embedded software components that complement **μC/OS-II**. A TCP/IP stack, USB stack, CAN stack, File System (FS), Graphical User Interface (GUI), as well as many other high quality embedded components. Micrium's products consistently shorten time-to-market throughout all product development cycles. For additional information on Micrium, please visit [www.micrium.com](http://www.micrium.com).

## About μC/OS-II

Thank you for your interest in **μC/OS-II**. **μC/OS-II** is a preemptive, real-time, multitasking kernel. **μC/OS-II** has been ported to over 45 different CPU architectures and now, has been ported to the LPC2378 CPU available from NXP.

**μC/OS-II** is small yet provides all the services you'd expect from an RTOS: task management, time and timer management, semaphore and mutex, message mailboxes and queues, event flags and much more.

You will find that **μC/OS-II** delivers on all your expectations and you will be pleased by its ease of use.

## Licensing

**μC/OS-II** is provided in source form for **FREE** evaluation, for educational use or for peaceful research. If you plan on using **μC/OS-II** in a commercial product you need to contact Micrium to properly license its use in your product. We provide **ALL** the source code with this application note for your convenience and to help you experience **μC/OS-II**. The fact that the source is provided **DOES NOT** mean that you can use it without paying a licensing fee. Please help us continue to provide the Embedded community with the finest software available. Your honesty is greatly appreciated.

## About μC/Probe

**μC/Probe** is a Windows application that allows a user to display the value (at run-time) of virtually any variable or memory location on a connected embedded target. The user simply populates **μC/Probe**'s graphical environment with gauges, tables, graphs, and other components, and associates each of these with a variable or memory location. Once the application is loaded onto the target, the user can begin **μC/Probe**'s data collection, which will update the screen with variable values fetched from the target.

**μC/Probe** retrieves the values of global variables from a connected embedded target and displays the values in a engineer-friendly format. The supported data-types are: booleans, integers, floats, and ASCII strings.

**μC/Probe** can have any number of 'data screens' where these variables are displayed. This allows to logically group different 'views' into a product.

A 30-day trial version of **μC/Probe** is available on the Micrium website:

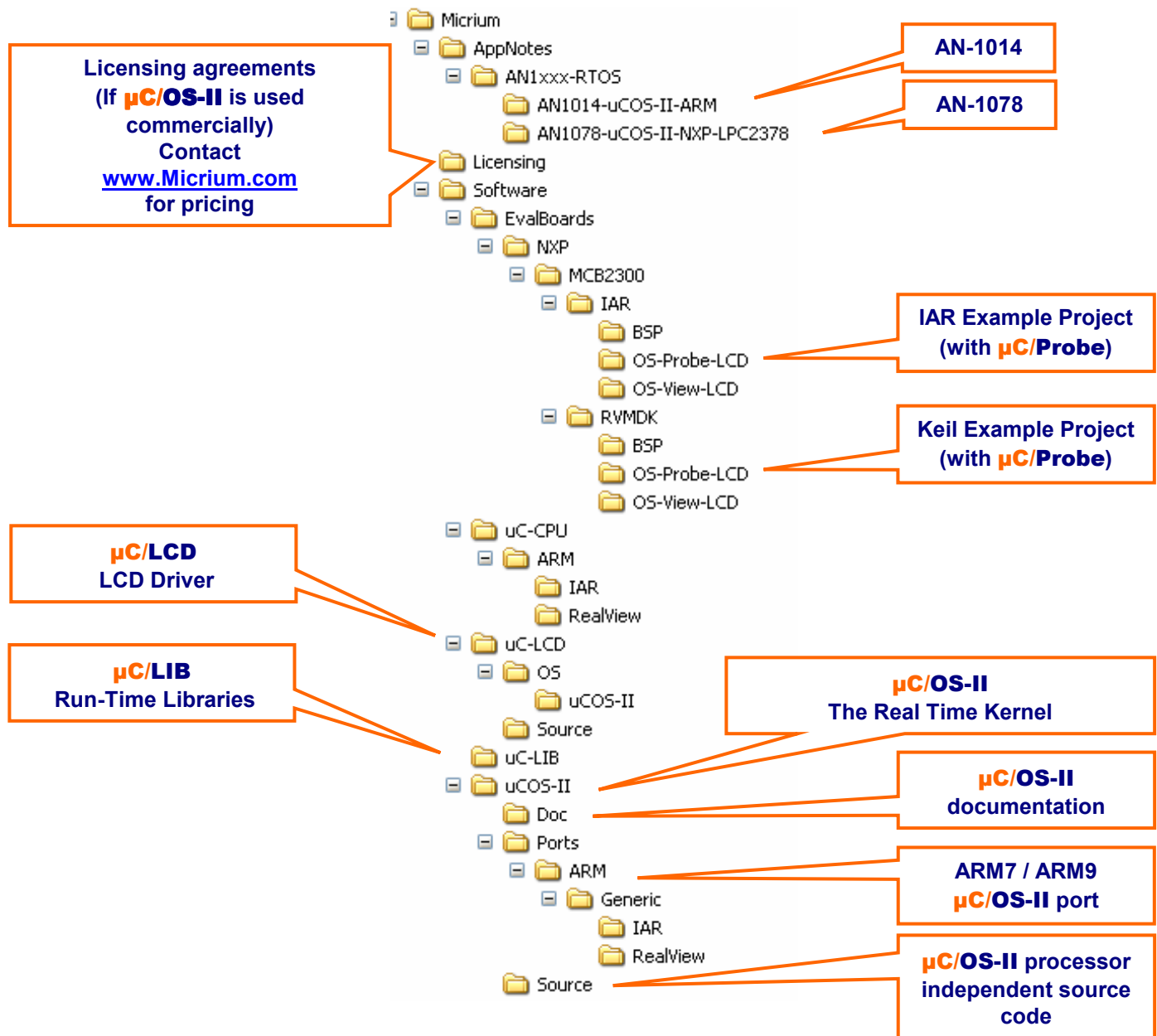
<http://www.micrium.com/products/probe/probe.html>

## Installing the Micrium Software

The source code for **μC/OS-II** is provided in source form along with IAR EW and Keil μVision3 project files that allows you to run **μC/OS-II** on the Keil MCB2300 evaluation board. To install the software, simply run the self-extracting executable.

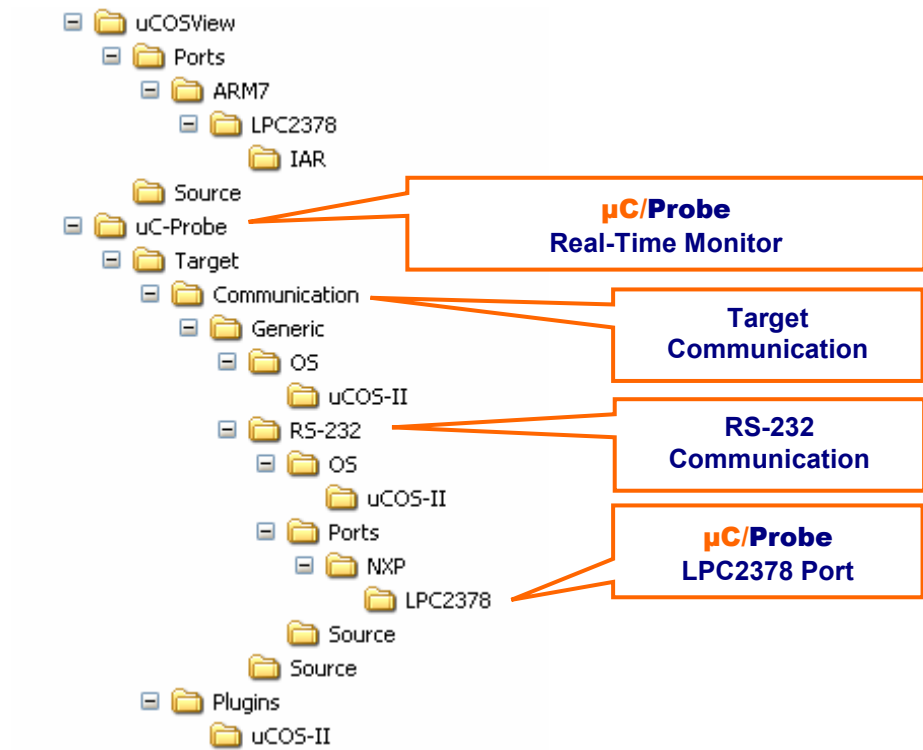
The self-extracting executable is called **Micrium-NXP-uCOS-II-LCD-MCB2300.exe**.

You will be prompted to accept the simple terms of the licensing agreement. If you answer 'Yes', the software will be installed on your PC under the \Micrium directory from the root:



# Micrium

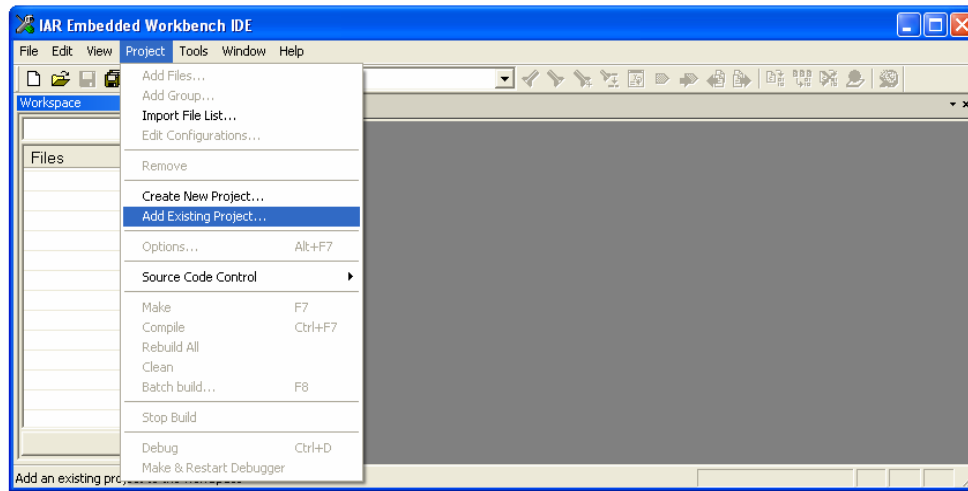
$\mu$ C/OS-II,  $\mu$ C/Probe and  $\mu$ C/LCD for the  
NXP LPC2378 CPU



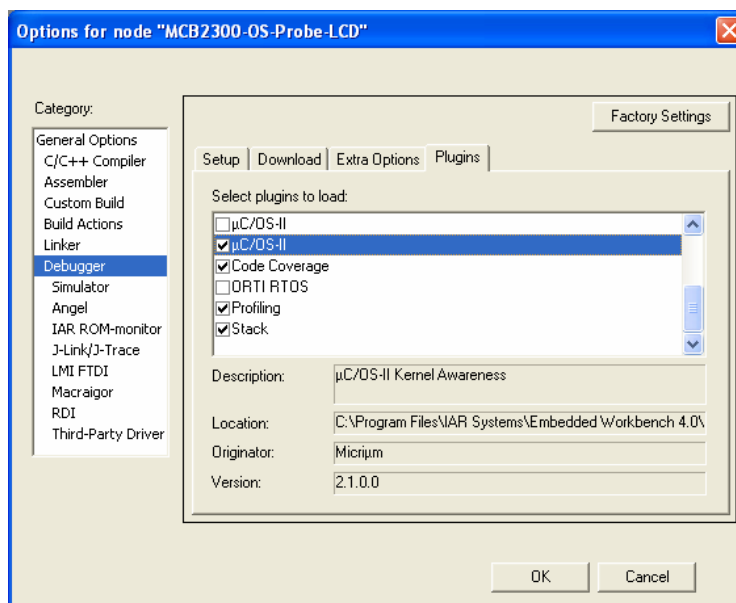
## Using the Micrium IAR Example Project

You should open AN-1078, which describes how the example code works, and read AN-1014 if you are interested in further information about the port for ARM processors.

To view the example project, start an instance of IAR Embedded Workbench, and open the project file **MCB2300-OS-Probe-LCD.ewp**, located in the directory marked “IAR Example Project” in the tree above. To do this, use the *Add Existing Project...* menu command under the *Project* menu:



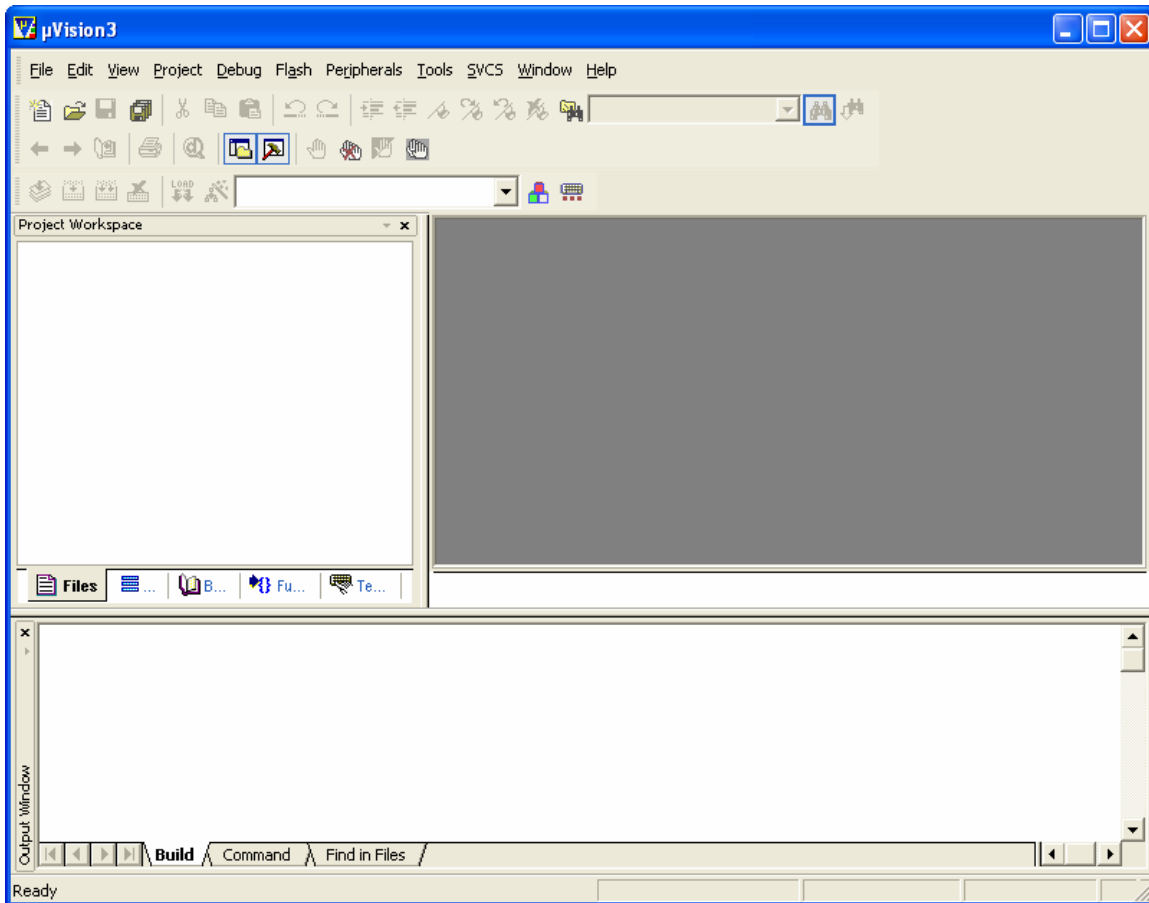
The µC/OS-II Kernel Awareness plugin will allow you to examine information about system objects while using the C-Spy debugger. To gain access to this feature, enable the plug-in by right-clicking on the project name in the work space browser and choosing *Options...* Then, select the “Debugger” entry in the list box, and the “Plugins” tab pane. Find the µC/OS-II entry in the list and, finally, select the check box beside the entry.



## Using the Micrium Keil μVision3 (RV-MDK) Example Project

You should open AN-1078, which describes how the example code works, and read AN-1014 if you are interested in further information about the port for ARM processors.

To view the example project, start an instance of the Keil μVision3 IDE and open the project file **MCB2300-OS-Probe-LCD.Uv2**, located in the directory marked “Keil μVision3 Example Project” in the tree above. To do this, select the “Open Project..” menu command under the “Project” menu and select the project file after navigating to the project directory (In addition, the project should be openable by double-clicking on the file itself in a Windows explorer window.)



## Erratas

If you find any errors in the documentation or code provided, please send those corrections to [Support@Micrium.com](mailto:Support@Micrium.com). Be sure to specify the processor, version of  $\mu$ C/OS-II and any other pertinent information about the error being reported.

## Contacts

### IAR Systems

Century Plaza  
1065 E. Hillsdale Blvd  
Foster City, CA 94404  
USA

+1 650 287 4250  
+1 650 287 4253 (FAX)

e-mail: [Info@IAR.com](mailto:Info@IAR.com)  
WEB : [www.IAR.com](http://www.IAR.com)

### Micrium

949 Crestview Circle  
Weston, FL 33327  
USA

+1 954 217 2036  
+1 954 217 2037 (FAX)

e-mail: [Sales@Micrium.com](mailto:Sales@Micrium.com)  
WEB: [www.Micrium.com](http://www.Micrium.com)

### NXP

1110 Ringwood Court  
San Jose, CA 95131

+1 408 474 8142

WEB: [www.nxp.com](http://www.nxp.com)