Software Development Tools for Embedded Pcs

Micro/sys supports a number of popular language tools for use during the development of systems incorporating Micro/sys embedded PCs

These languages have been developed with PC programming in mind. The 16-bit compilers have run-time calls for DOS and BIOS resources. With a few minor exceptions, these languages will execute on Micro/sys embedded PCs under the RUN.EXE™ firmware. This low cost, royalty-free 16-bit run-time environment allows the .EXE files generated by these languages to be loaded directly onto a Micro/sys computer board for automatic execution upon power-up.

Tools for Generating 16-bit Applications

Borland C++ Versions 2.1 through 5.0

Borland C++ offers a complete development system for developing 16-bit applications. Compiler, linker, and libraries are included, in addition to the Turbo Debugger system that allows source level remote debugging across a fast serial line. The availability of this debug capability makes the Borland tools the preferred 16-bit development tools.

Versions 2.1 and 3.1 generate small executables, and their Integrated Development Environment (IDE) is DOS character-based. Versions 4.5 and 5.0 generate slightly larger executables, but offer a multi-window graphical IDE for editing, visual makefiles, and support for in-line assembler statements. The 16-bit output of all versions can be used on Micro/sys embedded PCs under RUN.EXE or MSDOS with excellent results.

Micro/sys stocks book/CD packages for Borland C++ 3.1 and 4.5. For a very low cost, we can supply an entire 16-bit development toolset.

Microsoft C/C++ Versions 5.1, 6.0, and 7.0

Microsoft C/C++ compilers, from version 5.1 through 7.0 can be used to generate 16-bit .EXE files for execution under 16-bit environments such as RUN.EXE or DOS. Early versions are DOS command line driven, while later versions execute in DOS boxes under Windows. Note that these compilers are no longer supported by Microsoft, but they are installed in thousands of locations.

Software Support

Multitasking library, DIVVY™
Async comm library, CommBLOK™
PID loop library, PidBLOK™
[Items above in Section 6]

Compatible Hardware

Any Micro/sys computer with X86-compatible CPU
[See Sections 1, 2, and 3]
PC-compatible computers

Mounting/Packaging

Micro/sys 3730 Park Place, Montrose, CA 91020 (818)244-4600 Fax (818)244-4246
email: info@embeddedsys.com

Microsoft does not support remote debugging, and this is a disincentive for their use in embedded applications.

Microsoft Visual C++ Version 1.52

Visual C++ Version 1.52 presents a full Windows graphical IDE, offering visual makefiles, project trees, and multi-window editing. This was the last version of Visual C++ that generated 16-bit executables, and it is no longer supported by Microsoft. It can be used for creating 16-bit applications, but suffers from the same lack of a remote debugger as other Microsoft C/C++ compilers. Once again, it is installed in thousands of locations.

Microsoft QuickBASIC & Visual BASIC for DOS

Micro/sys offers limited support for the Microsoft QuickBASIC and Visual BASIC for DOS compilers. These development tools let you edit and compile 16-bit BASIC programs. They have some idiosyncrasies that must be addressed on low end embedded PCs. On high end embedded PCs with video, keyboard, and disks, they can be run natively on the embedded PC, offering reasonable debug capabilities. There are no remote debug capabilities.

Borland TASM Assembler

Coding an application in assembly language is the way to create the tightest, fastest code. The Borland TASM assembler is an excellent package. It can be used stand alone, or in conjunction with Borland C++. If you are including TASM-generated OBJ files in a Borland C++ application, you must use the linker and Turbo Debugger supplied with the C++ system. Since Borland C++ supports in-line assembly statements, use of TASM may only be needed in special cases.

Microsoft MASM Macro Assembler

MASM supports many high-level language constructs and language extensions. There are no remote debug capabilities. It is still supported by Microsoft.

Turbo Pascal

Micro/sys RUN.EXE firmware does not support Turbo Pascal. Turbo Pascal programs may execute on Micro/sys embedded PCs with other operating systems. We do not provide technical support for Turbo Pascal.

Tools for Generating 32-bit Applications

In most cases, the 32-bit operating system to be used will have a preferred set of development tools for use in developing applications.

For instance, the Linux OS includes the GNU set of compilers and linkers, and the OS includes dynamically linked C run-time libraries. Other operating systems may suggest Microsoft Visual C++, Borland C++, or other specific compilers for application development.

Check with your 32-bit OS vendor for development tool suggestions.

Ordering Information for Software Tools Stocked by Micro/sys:

BO/BC3.1	Borland C++ 3.1, including Turbo Debugger
BO/BC4.5	Borland C++ 4.5, including Turbo Debugger
BO/TASM	Borland TASM Assembler, including Turbo Debugger

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