RELEASE NOTES

MATRIXx™

Version 6.3

These release notes contain system requirements, and information about new features included in MATRIXx 6.3, and the Xmath, AutoCode, and SystemBuild Modules.

System Requirements

Windows Hardware Requirements

The following requirements apply to all computers that will run MATRIXx on Windows 2000/NT/XP.

- Pentium II 500 MHz or equivalent
- Minimum 32 MB RAM, 64 MB recommended
- A video card that supports a minimum of 256 colors at 800 × 600 resolution; 65,536 colors at 1,024 × 768 resolution is recommended; True Color setting (16 million) is supported
- A CD-ROM drive
- Approximately 100 MB of disk space to complete a full MATRIXx installation. Refer to Table 2 for details.
- A 2-button Microsoft compatible mouse, with a 3-button Logitech mouse or equivalent preferred

Note You can change the number of colors for your display through **Start»Settings» Control Panel»Display»Settings**.

NATIONAL INSTRUMENTS™

Windows System Requirements

Windows Software Requirements

The following requirements apply to all computers that will run MATRIXx on Windows 2000/NT/XP.

- MATRIXx software requires Windows 2000/NT/XP. Supported installations include English, Japanese, and German.
- If you want to link your own C code to Xmath or SystemBuild, you must purchase and install a copy of Microsoft Visual C++ 5.0 or 6.0. For FORTRAN you must install a copy of DIGITAL Visual Fortran 5.0 or 6.0.

Note DIGITAL Visual Fortran 5.0 for Windows NT (releases 408 through 333E) requires a patch for the linker before it will work properly. Contact Digital at `www.digital.com/fortran` to acquire the patch.

- Floating licenses require properly functioning TCP/IP networking, which includes Winsock 1.1 or later.
- *MATRIXx Help* requires Internet Explorer 5 or later.

Compatible Compilers and Operating System Versions

The MATRIXx version 6.X software was developed and tested with the operating system versions and compiler versions listed in Table 1. These configurations are recommended for optimal compatibility.

Other operating system versions and compiler versions may be compatible with the MATRIXx version 6.X software. Refer to the National Instruments Support page at `ni.com/support`, or contact Technical Support at `support@ni.com` or (877) 493-2404.

Table 1. Verified Compilers

Compiler	Windows NT 4.0, Windows 2000, or Windows XP
C or C++	Microsoft Visual C / C++ version 5.0 or 6.0
FORTRAN	DIGITAL Visual Fortran version 5.0 or 6.0

Caution Other compilers may work in certain cases, but they are not supported. NI recommends against using unsupported compilers.

Windows Minimum Disk Space Requirements

The minimum space requirements for the MATRIXx software on a Windows host are shown in Table 2. A complete installation requires approximately 100 MB of disk space during the MATRIXx installation process. This may be significantly larger for large disk partitions that use a FAT format.

Table 2. Minimum Disk Space Requirements

Product	Space Required
MATRIXx	77 MB
License Manager	3 MB
Netscape Navigator Stand-Alone (International)	16 MB
Altia Design Animation (optional)	22 MB
Altia FacePlate (optional)	20 MB
Full installation	~138 MB

UNIX System Requirements

MATRIXx 6.3 is available for Sun Solaris 2.8. For information on MATRIXx for other UNIX platforms, contact NI at 1-877-493-2404.

National Instruments supports the MATRIXx version 6.X software in the hardware and software environments described in the following sections.

UNIX Hardware Requirements

The following requirements apply to UNIX systems running MATRIXx software.

- Minimum 16 MB RAM per user, 24 MB (or more) recommended
- Minimum 60 MB swap per user, 80 MB (or more) recommended (typical ratio of RAM to swap space is 1:4)
- A CD-ROM drive for software installation or use of online books
- Approximately 170 MB of disk space to complete a full MATRIXx installation. Refer to Table 5 for details.
- A 3-button mouse or equivalent preferred

UNIX Software Requirements

The following requirements apply to UNIX systems running MATRIXx software.

- MATRIXx software requires a supported version of UNIX. Supported versions are described in Table 4.
- Floating licenses require properly functioning TCP/IP networking.
- Window Managers—MATRIXx version 6.X has been tested with the window managers shown in Table 3. Whereas NI software may work under other X Windows-based window managers, their use is not supported. The applicable X11 version is R5 or later for all supported UNIX platforms.

Table 3. Supported Window Managers

Platform	Window Manager
Digital UNIX	Digital Common Desktop Environment (CDE)
HP-UX	HP Common Desktop Environment (CDE)
IBM AIX	AIX Common Desktop Environment (CDE)
SGI IRIX	4D Window Manager (4Dwm)
Sun Solaris	OpenWindows 3.X or Common Desktop Environment (CDE)
Sun OS	OpenWindows 3.X

Compatible Compilers and Operating System Versions

The MATRIXx Product Family version 6.X software was developed and tested with the operating system versions and compiler versions listed in Table 4. These configurations are recommended for optimal compatibility.

Other operating system versions and compiler versions may be compatible with the MATRIXx version 6.X software. Refer to the National Instruments Technical Support page at `ni.com/support`, or contact Technical Support at 1-877-493-2404.

Table 4. Verified Compilers and Operating System Versions

OS Version/Compiler	C	C++	FORTRAN
Digital UNIX 4.0	5.2	5.7	5.0 (FORTRAN 77)
HP-UX 10.20	10.32.05	10.27	10.20.09
IBM AIX 4.3	3.6	3.6	5.1

Table 4. Verified Compilers and Operating System Versions (Continued)

OS Version/Compiler	C	C++	FORTRAN
SGI IRIX 6.5	7.2.1	7.2.1	7.2.1
Sun Solaris 2.9	SC4.2	SC4	SC4
SunOS 4.1.4	SC3.0.1	SC3.0.1	SC3.0.1

Caution Other compilers may work in certain cases, but they are not supported. NI recommends against using unsupported compilers.

UNIX Minimum Disk Space Requirements

The minimum space requirements for MATRIXx version 6.X on a UNIX host are shown in Table 5.

Table 5. Minimum Disk Space Requirements

Product	Space Required
MATRIXx	140 MB
License Manager	5 MB
Altia Design Animation (optional)	40 MB
Altia FacePlate (optional)	30 MB
Full installation	~215 MB

What's New in MATRIXx 6.3

MATRIXx 6.3 consists of MATRIXx 6.2 with the following enhancements:

- Includes complete Xmath/SystemBuild save file compatibility—MATRIXx 6.2 and MATRIXx 6.3 save file format is identical.
- Installs and executes correctly on Windows 2000/NT/XP.
- **(Windows 2000/NT/XP)** Built with Microsoft Visual C++ version 6.3 with service pack 5.
- **(Solaris)** Built with SUN SC4.2 Compilers.
- MATRIXx software CD and MATRIXx documentation CD combined onto one CD.
- Added Xmath Help pull-down menu item MATRIXx Bookshelf, which opens Adobe Acrobat Reader with an initial document allowing easy navigation to all MATRIXx documentation PDF files.

- (**Windows 2000/NT/XP**) *MATRIXx Help* now requires Internet Explorer instead of Netscape 3.01.
- Native PC hardcopy improvements for the Xmath graphical window and SystemBuild diagrams.
- Improved Xmath 3D plots, HOOPS lighting feature enabled.
- Improved cutting and pasting in Xmath Command, Log, and Error windows. MFC EditCtrl changed to use the MFC RichEditCtrl.
- All files for the PlugNSim product have been removed from the V6.3 CD.
- Online help can be displayed in any browser which supports JavaScript. To bring up *MATRIXx Help* in a browser, enter the following URL in the address bar:

  `file://$MATRIXX/xmath/help/mxhelp.html?topic=topic`

  where `$MATRIXX` is the location where MATRIXx is installed and `topic` is a valid *MATRIXx Help* topic (for example, `mxhelp.html?topic=bode`.)
- **(UNIX)** Online help uses Netscape. By default, Xmath will use the htmlHelp commands in Netscape Communicator 4.72. However, if the environment variable, `NETSCAPE_IMAGE`, contains the path to another version of Netscape Navigator, Xmath will communicate with that browser.
- The newer versions of Netscape do not support HTML Help commands. Instead, they support `openURL` commands which Xmath can utilize. To make Xmath use the `openURL` commands instead of HTML Help commands, set the environment variable, `NETSCAPE_HTMLHELP`, to `0`. This also works for the older Netscape version 4.72.

Xmath Enhancements

The following enhancements were made to the Xmath module.

- **(Windows 2000/NT/XP)** Online help now uses Microsoft Internet Explorer instead of Netscape Navigator.
- Fixed bug where matrix divided by complex scalar gave incorrect results.
- Fixed bug where Xmath would hang if there was a license error. Xmath now displays a MessageBox indicating a license error.
- Fixed memory leak in response built-in function.
- Fixed bug in getchoice command which overwrote internal memory if more than four items selected out of 15 choices or more.

AutoCode Enhancements

The following enhancements were made to the AutoCode module.

- Corrected error in number of states used to index the UCBHOOK generation (DID 22376).
- Fixed bug where Block parameter matrix data was assumed to stored column-wise. Autocode now handles Block parameter matrix data stored row-wise correctly.
- Fixed problem with line-splitting logic related to delim character as the first character of the string (DID 22258).
- Fixed major bug with hardcoded parameters when the -ovfp 0 and radix 0 backdoor is used. The problem was that the 'explicit' variant of the integer gpltype was not being translated into a GPL type. Therefore, GPL could not generate the value (DID 22554).

SystemBuild Enhancements

The following enhancements were made to the SystemBuild module.

- Fixed crash during hardcopy of SuperBlock if editor window had not been opened.
- Generated PostScript hardcopy of STDs with SuperBubbles would only print first two pages, and would not print all nested SuperBubbles.
- Hardcopy timestamps now have a four digit year timestamp.
- SystemBuild blocks with 32-bit bitmaps now correctly generate PostScript hardcopy.
- `%vars` for vector of REAL PARAMETERS in UserCodeBlock was transposed.
- Constant block with radix not equal to 1 caused incorrect typecheck result.
- Block Dialog for ConditionBlock multiplies the number of input and output by 10 for undefined procedure SuperBlocks. The Block dialog now displays the correct number of inputs/outputs for undefined Procedure SuperBlocks.
- **(UNIX)** SystemBuild now displays color on workstatations with 24-bit graphics cards.
- **(UNIX)** SystemBuild now displays color on 8-bit workstations even though other applications have allocated all the systems colors.
- Read/Write var blocks with logical arrays with element addressing did not return correct results.
- Documentation TAB in block dialog did not save entered MinimumValue, MaximumValue and Accuracy values in all cases.

- Sim results in some cases did not match after making part of the Model a Component.
- Large BlockScript expressions did not compile correctly.
- RenameSuperBlock SBA command did not rename SuperBlock `_makesb`.
- General Express block would remove parentheses for the case: `A arithOp -B`
- In Gears integration algorithm, fixed interpolation function and fixed a few minor errors.
- SystemBuild Simulator would crash when invalid args were passed to the InteractiveAnimation UserCodeBlock usria1.
- **(Windows 2000/XP)** Altia UserCodeBlock ucbaltia1 would consume all system CPU resources during animation.

323702A-01 Sep03