How To Get Started With REX, MEX and VEX

17 September 2003

Documentation. Documentation for the REX, MEX, and VEX systems can be found at ftp://lsr-ftp.nei.nih.gov/lsr/ in the directories of the same name.

License. REX requires signing of a simple license that preserves the rights of NIH to use the code. Copies of this license are in the REX documention.

Downloads. Downloads for REX, MEX, VEX, and various analysis systems can be found at ftp://lsr-ftp.nei.nih.gov/ in associated directories. The QNX RTP real-time operating system can be downloaded from http://www.qnx.com.

PC. The REX and MEX real-time systems run under the QNX RTP operating system. This system is available free for non-commercial use to educational institutions (www.qnx.com). There are some specific requirements for configuring PCís to run QNX RTP. The most crucial is that the motherboard permit the reserving of IRQís. Three vendors make boards that are acceptable- MSI, Asus, and Abit. The essential feature in the BIOS of these boards is the ability to reserve an IRQ from being assigned to a PCI device. This IRQ is then used by REX for the a/d converter. This feature is the essential one to look for when selecting a motherboard. It is no longer present in the BIOS of current Dell, Gateway, Micron, IBM, HP, etc computers.

We have a preferred configuration using an MSI motherboard. The advantage of this motherboard is that the onboard ethernet is supported by QNX, saving a slot. A specification for this machine follows. Note this machine is somewhat overspecified- 1GB of memory and a 3GHz processor is not required for REX. In quantity the cost for this configuration without monitor, keyboard or mouse is about $1600.

QNX RTP supports only certain video adapters. One can check for compatible adapters on the QNX web site. For dual-head support, one must use the ATI Radeon 9800 Pro.

Interfaces. REX and MEX use various a/d converters, digital i/o interfaces, d/a converters, and timer cards. The compatible models are specified in the REX documentation.

Specification for NIH Laboratory Real-time PC

1.) Mainboard: MSI 865PE Neo2-LS, part number MS-6728-020. Includes Intel 865PE chipset, Intel ICH5, Intel 82562EZ 10/100 LAN on mother-board.
1.) Processor: Intel P4 3.0GHz/512K/800MHz FSB with fan.
2.) Memory: Corsair Twinx1024-3200LL (2 matched 512 MB DIMMS). 1GB total.
3.) Hard drive: Seagate ST380013AS 80GB SATA/150 Barracuda 7200.7.
1.) DVD-ROM: Sony 16X IDE.
2.) Video: ATI Radeon 9800 PRO 128MB DDR 8XAGP with DVI to VGA adapter included.
3.) Case: Antec SX600II with one rear and two front fans installed. No side panel fan.
4.) Power supply: Antec True480 with 110v power cord.
1.) Floppy (any manufacturer okay).
2.) Assembly and test. Note that all nine mainboard screws must be installed, and the hard disk must be installed in middle position in removable drive cage.
3.) Include unused cables and accessories that come with mainboard and case.

Vendors who can supply this configuration:

Frank Bowden
Account Manager
Fortress Systems Int'l
1-800-437-3920 Ext. 1230
www.fsiinc.com

Keith Kim
Account Manager, Corporate Division
E-mail: Keith_Kim@amax.com
Phone: (510) 497-8820
Fax: (510) 651-4119
AMAX INFORMATION TECHNOLOGIES
1565 Reliance Way, Fremont, CA 94539
http://www.amaxit.com

Jacky Chen
Senior Account Executive
ATACOM, INC
4725 HANNOVER PLACE
FREMONT CA 94538
TEL:(510)933-1200
FAX:(510)933-1201
sales@ATACOM.com
www.ATACOM.com