Adrienne Electronics Corporation

"WINDOWS 8 PROBLEMS"

FIELD APPLICATION NOTE

Introduction:
We have discovered that there are a variety of problems which may arise when attempting to use our boards inside a Windows 8 PC. In almost all cases, there is absolutely nothing wrong with your board or your Host PC. Below are presented some common Windows 8 problems and their solutions.

Historical Note(s):
IBM PC compatible computers have been using 16-bit BIOS, since 1981, to interface motherboard hardware to system software. By the time Intel 32-bit CPU's appeared around 1986, IBM yielded the market to clone PC manufacturers, all of whom began using 32-bit proprietary BIOS extensions. There were and are no standards for 32-bit BIOS, and small companies like AEC were prevented from accessing and using 32-bit BIOS. Intel designed a replacement for PC BIOS, called "EFI", which eventually became a new industry standard called "UEFI" (see Wikipedia for details). Windows 8 is the first Microsoft operating system to require that UEFI (not BIOS) be present. Despite many long-term advantages, the UEFI standard is still somewhat buggy and is still evolving. Many modern motherboards need a UEFI firmware update as a result.

Solution #1 – Update the Motherboard's Firmware:
See our "BIOS Update" application note for full details. Because the UEFI specification is new and still evolving, there are many motherboards, even new ones, which need a firmware update. The typical symptom here is that the PC will not boot up when our board is installed (even before Windows 8 loads).

Solution #2 – Use our Bootable Test/Demo/Support CDROM:
Boot up your PC with our v14.01 or newer bootable test/demo/support CDROM already installed. This will assure you that your board and your host PC are both OK, no matter which operating system you are loading (Linux or Windows). This step (if OK) eliminates the possibility of all hardware problems. It is important to eliminate all hardware problems before attempting to deal with Windows 8 (and/or UEFI) software problems.

Solution #3 – Try a Different PCI Express Slot:
See our "Try Another Slot" application note for full details. There is at least one modern server motherboard being sold with a PCI Express slot which does not work properly. There is no good reason why our PCIe-TC boards should not work in any x1, x4, or x16 PCI Express slot on your PC's motherboard.

Solution #4 – Boot Up Twice:
Because UEFI (unlike BIOS) has “memory”, and because UEFI is an evolving standard (not stable yet), we have discovered that some PC's will crash the first time that they boot up with one of our boards installed, but then will boot up fine on the second try. Evidently the UEFI is smart enough to know that it had a problem with our board on the first try, and will then not repeat the same mistake(s) the second time around. There is no good reason why the installation of any perfectly good PCI Express board should crash the PC. A firmware update may be needed as well (see solution #1 above).

Solution #5 – Install the Windows Driver on Each PC:
We have one OEM vendor who got our board working perfectly with Windows 8, then cloned the hard drive (HDD) from that machine, then used the clone HDD's and additional AEC boards in other machines. Our boards would not show up in Device Manager on the clone machines. The reason for this behavior is still under investigation, but probably has something to do with the UEFI “memory” issue. We are guessing that in UEFI machines, both the UEFI memory and the HDD contents must both be properly initialized from one machine to the next.

Solution #6 - Windows 7 to Windows 8 Upgrade Problem(s):
We have at least one customer who was using one of our PCIe-TC boards on a Windows 7 PC with no problems, then upgraded to Windows 8, after which Device Manager could no longer find our board. Obviously the PCIe-TC board and the Host PC hardware are both OK (because they both worked fine with Windows 7). It is very likely that the PC's firmware needs to be upgraded, because Windows 8 requires current UEFI firmware to operate properly, and a Windows 7 PC in most cases will not have fully functional UEFI firmware installed.

Solution #7 – Buy a New Windows 8 Hardware Compatible PC:
Windows 8 PC's are the first to require UEFI. It is very possible that an older PC will not support UEFI properly, if at all. Windows 8 may nominally run on such a PC, but not properly. First try the motherboard firmware update per solution #1. If that does not work, buy a new Windows 8 compatible PC.

Contact Information:
Please contact us at <support@adrielec.com>, or at (702) 896-1858 (Pacific Time) (GMT-8), if you have tried all the above and are still having problems getting our board(s) to work with Windows 8. We cannot fix things which we do not know about. We want your board to work, and for you to be happy with it.