

# Adrienne Electronics Corporation

## “EARLY PRODUCTION AEC-PCIe BOARDS”

### FIELD APPLICATION NOTE

#### Introduction:

This document describes the special features (or lack thereof) of early production AEC-PCIe boards.

#### AEC-PCIe Early Production Board Characteristics:

- 1) By default these boards emulate the nearest equivalent PCIe-TC board model as closely as possible. The intent is to have the AEC-PCIe boards be true drop-in replacements for the equivalent PCIe-TC boards. For example, you should be able to take a known good PC with a PCIe-LTC/RDR board installed, power it off, remove the PCIe-LTC/RDR board, insert a new AEC-PCIe-41 board, turn the PC back on, and all driver and application software should think that a PCIe-LTC/RDR board is still installed. This special feature is expected to save each of our customers many weeks and thousands of dollars of development and testing time.
- 2) Board firmware will be revision “E1” (or later) (“Emulation 1”). This is in theory the only reliable way that driver and application software can tell the difference between a PCIe-TC board and an AEC-PCIe board.
- 3) PCIe-TC boards are 4-function devices in PCI configuration space. AEC-PCIe boards are 1-function devices in PCI configuration space. In Windows Device Manager you will no longer need to disable any “Base System Device”.
- 4) The In-Circuit Update (ICU) software is not working at present. If any board firmware changes are needed, your board(s) will have to be returned to the factory for full reprogramming and retesting.
- 5) FCC and CE-Mark EMC testing has not been performed yet.

#### Future Development Goals:

As quickly as possible we intend to add the following capabilities:

- 1) Get the In-Circuit Update (ICU) software fully operational, so that boards can be updated in the field when and if needed.
- 2) Verify that the boards are fully compliant with FCC and CE-Mark EMC regulations. In theory we are not required to do this, because these boards are PC components, but we do it anyway to spare all our smaller customers the expense of doing it themselves.
- 3) Provide a means for switching the board hardware register interface into “native” AEC-PCIe mode, in which DPRAM registers can be accessed directly and quickly, not via the relatively slow and cumbersome SDIO interface found on PCIe-TC boards. This “native mode” will have to be used in order to interface to future boards having multiple instances of multiple functional modules, such as LTC Reader, IRIG-B Reader, GPIO, etc..
- 4) Release board models having more features and capabilities, such as automatic LTC/IRIG-B read capabilities, GPIO channels, etc..

#### In Case of Trouble:

- 1) If you are able to find anything (other than the board firmware revision) which is different between a new AEC-PCIe board and the equivalent PCIe-TC board, please contact us at <[support@adrielec.com](mailto:support@adrielec.com)> immediately.