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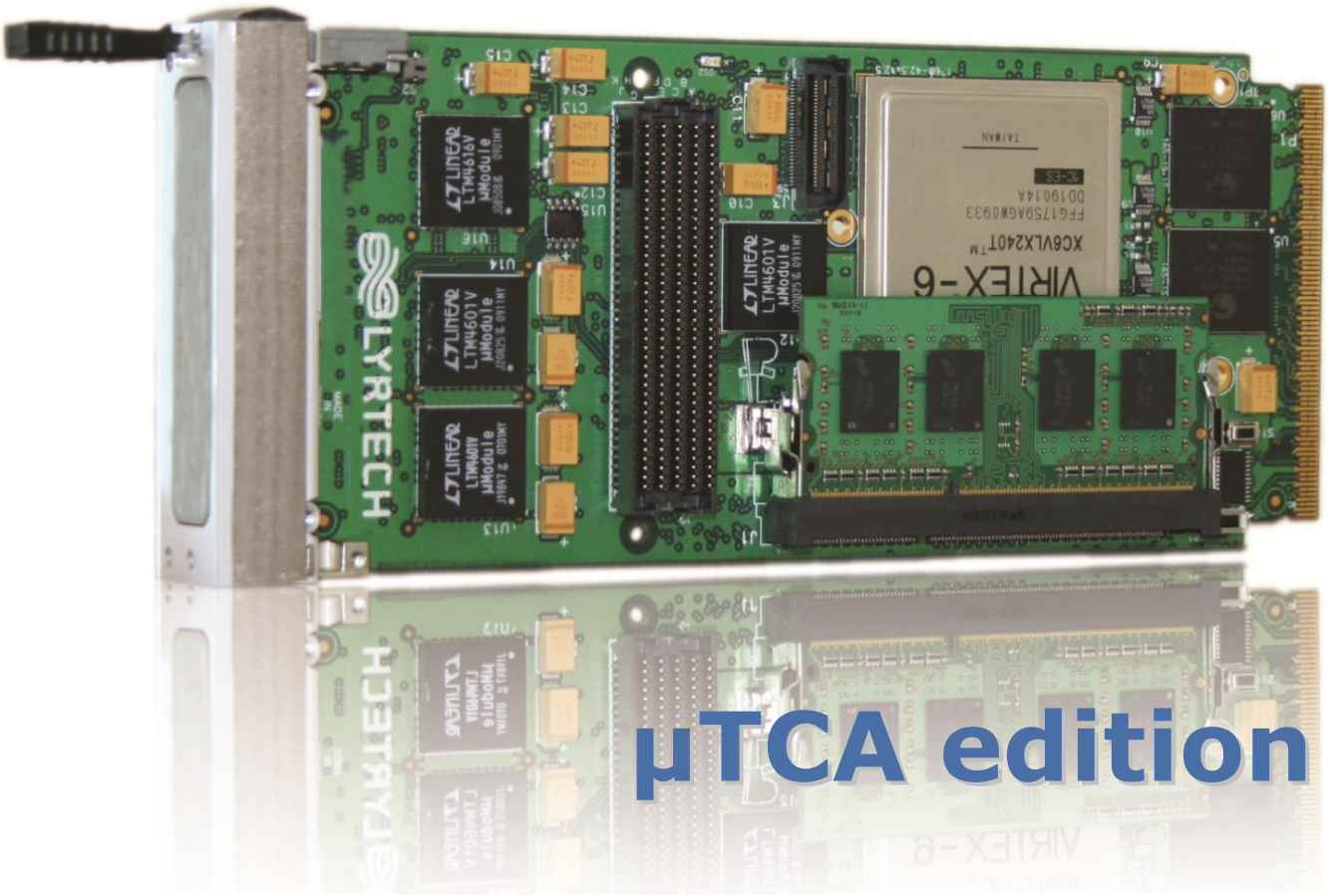
Upgrading to ADP 6.6



µTCA edition

Table of Contents

1 Introduction 3

2 Installation on Windows 7, 64 Bits 3

3 New Central Command Engine and Firmware Update 4

4 Full Support of the MO1000 FMC 4

5 Modifications to the Record/Playback Examples 5

6 Upgrades to the Radio420 calibrations 5

7 System Monitor module support 5

1 Introduction

The release 6.6 of the ADP Software Tools adds useful features to the Nutaq AXI-based software suite introduced with the release 6.0.

The main additions to the ADP Software Tools in version 6.6 are:

This document lists the changes the users will face while upgrading to version 6.6

Important:
A Perseus firmware update is necessary to use the features of the new release.

The Linux based ADP software tools are Kernels version dependent, especially the PCI Express driver. The software tests executed on the Linux installers were done with these kernel versions:

Linux OS	Kernel Version
Fedora 20 64-bits	3.11.10.301
Ubuntu 12.04 LTS	3.11.0.23

For full details on the new features of Software Tools release 6.6, please consult the Release Notes.

2 Installation on Windows 7, 64 Bits

The first step in the ADP 6.6 software upgrade process is the installation of the software tools on a computer running the Windows 7, 64 bits operating system. The tools and files necessary to complete the upgrade are located in the installation. Please uninstall your prior version of ADP before installing ADP 6.6. Make sure to back up your work correctly before performing any update.

3 New Central Command Engine and Firmware Update

To use the new functionalities of the ADP Software Tools 6.6.0, it is mandatory to perform a Perseus firmware update.

The firmware update will install the new Central Command Engine (2.13.21).

It is now possible to directly update the CCE from an older version to the current one using the *update_cce* CLI command.

To update the Perseus firmware from release 6.5 to release 6.6, only the CCE update is necessary. If upgrading from a prior version, please execute a full firmware update.

To perform the firmware update, please follow the instructions available in the *Perseus Firmware Update.pdf* document in the %ADPROOT%/documentation/pdf/Perseus folder of the Windows installation.

4 Full Support of the MO1000 FMC

The MO1000 is an FPGA Mezzanine Card (FMC) which provides 8 high-speed DAC outputs. The MO1000 FMC is stackable with another MO1000, to create a High-Pin Count 16 DAC card, or with a MI125 FMC to create a 16 input, 8 output card. The 6.6 release offers full support of the BSP, BSDK and MBDK development flow for the MO1000. The version 2.13.18 CCE and the release 6.6 host API are mandatory for the MO1000 detection and operation.

The MO1000 module support consists in:

- BSP: MicroBlaze Library, MO1000 FPGA core, MO1000 BSP standalone example.
- BSDK: Integration to the Central Command Engine and MO1000 and MI125-MO1000 BSDK example.
- MBDK: MO1000 MBDK System Generator and Simulink blocksets, MO1000 and MI125-MO1000 MBDK example.

For more information on the MO1000 module, please refer to the MO1000 *User's Guide* and the *Programmer's Reference Guide MO1000.pdf* documents in the %ADPROOT%/documentation/pdf/MO1000 folder of the Windows installation.

5 Modifications to the Record/Playback Examples

The Record Playback example, as well as the MI125, ADAC250 and Radio420 Record Playback examples and the *ram_get* CLI function have been modified to use the Record/Playback utility files (as well as the RTDEx Media detection) available in the release at this location: %ADPROOT%/sdk/utils. The data retrieval speed has been significantly increased to allow fast retrieval of 4 Gigabyte recordings.

6 Upgrades to the Radio420 calibrations

Adjustments have been made to both the TX and RX automatic calibrations done by the Radio420 modules of the CCE.

The LO leakage and Sideband suppression calibrations of the TX have been improved to produce better results across the frequency range of the Radio420.

The RX DC Offset calibration has also been improved to successfully calibrate the DC offset across all gain setups of the Radio420 RX.

7 System Monitor module support

The System Monitor module allows the reading of the Perseus' FPGA internal core temperature and voltages. System Monitor has been added as a default core in all of the Software Tools FPGA examples (BSDK and MBDK). It as also been added to the EAPI and the CLI.

For more details on the System Monitor module, please consult the Perseus601x User's Guide.