

# MIL-STD-1553 Mini PCIe Reference Design

Single Channel ADK-2130mPCIe-1F, or Dual Channel ADK-2130mPCIe-2F

## Features

- Mini PCIe F2 full size
- PCIe gen2 single lane
- Linux OS
- Single or Dual Channel
- Mini Card Electromechanical Specification Rev. 1.2
- Two independent dual-redundant MIL-STD 1553 channels using Holt's proven HI-2130
- Each channel with BC, 2xRT and MT
- Transformer coupled MIL-STD-1553 interface
- Holt API Library support
- -40°C to +85°C operation
- Customizable FPGA
- Demo software for BC, RT1, RT2 and MT

## General Description

### Overview

The Application Development Kits ADK-2130mPCIe-1F and ADK-2130mPCIe-2F provide full size F2 mini PCIe reference designs, supporting one (-1F) or two (-2F) dual redundant channels of MIL-STD-1553. The mini PCIe card features one or two Holt HI-2130 MIL-STD-1553 multi-terminal devices with integrated transformers and a PCI-Express interface designed using a small cost effective Xilinx Artix-7 FPGA. The reference design includes a schematic, BOM, board layout files, PCIe interface FPGA source code, Holt API library and a sample project, enabling the user to easily port this solution to existing designs or boards.

The mini PCIe card is designed to operate in a PC or single board computer with a Linux operating system. The included demo software uses the Holt API Library functions, providing an abstraction layer that greatly simplifies host programming.

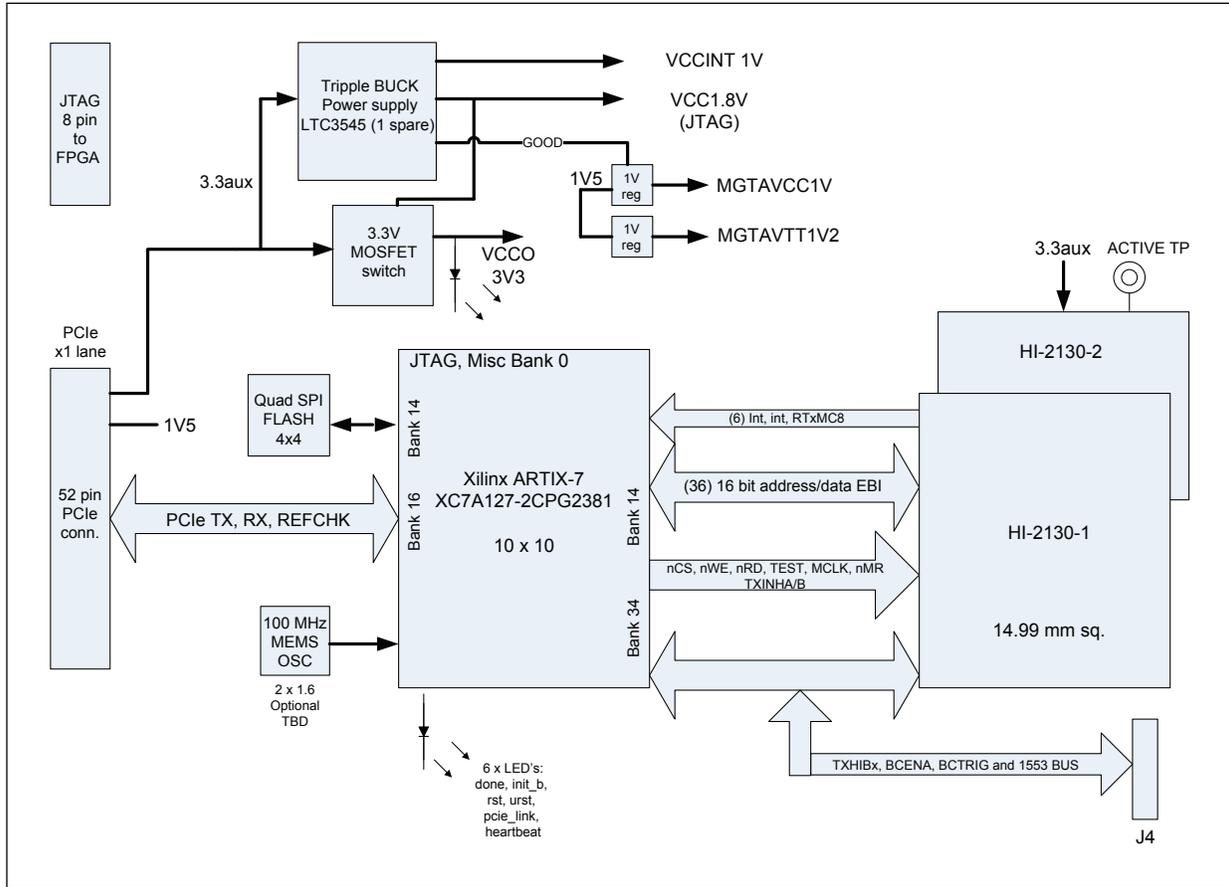
The kit also includes a separate break-out board which connects to the PCIe card through a ribbon cable and includes cables and connectors for direct connection to the MIL-STD-1553 bus (note: connection should be made to MIL-STD-1553 bus couplers for correct bus termination). This board is used to break out BusA and BusB connections from both channels.

A bootable Flash Drive and Quick Start Guide provide an out-of-the box experience, enabling the user to get up and running very quickly.

EV-2130mPCIe-2F mini PCIe card



# Functional Block Diagram



Break-out board provides out-of-the-box bus connections



## Ordering Information

### ADK - 2130 mPCle - xF

- 1F = Single channel dual redundant
- 2F = Dual channel dual redundant
- mPCle = Mini PCIe F2 full size, PCIe gen2 single lane
- 2130 = BC/MT/2RT, 64K byte ECC RAM
- Application Development Kit including corresponding breakout board cable assembly and ribbon cable (mPCIE\_breakout-xF)

### EV - 2130 mPCle - xF

- 1F = Single channel dual redundant
- 2F = Dual channel dual redundant
- Evaluation board only  
(Note: This board does not include the breakout board cable assembly or ribbon cable (mPCIE\_breakout-xF))