



Technical characteristics

- | ADC | DAC |
|--|---|
| <ul style="list-style-type: none"> • 2 Channels • 16 bits • 200 MSPS Sample Rate (max 500 MSPS not tested) • 700 MHz Bandwidth | <ul style="list-style-type: none"> • 2 Channels • 16 bits • 800 MSPS Update Rate • 200 MSPS Data Rate |
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- 6 Layer PCB
 - External trigger input
 - On-board voltage monitor
 - FMC LPC connector
 - Flexible clock management (Onboard and external reference, External clock input, Clock output)
 - EEPROM for calibration parameters storage.
 - Tested with ZedBoard (Xilinx Zynq).

Tools/Programming Languages

- PCB design
- FPGA design using Xilinx Vivado
- TCL and Python Scripting.

Project Description

The FMC01 Mezzanine card was designed to digitize and synthesize high speed signals. Its two ADC channels and two DAC channels allow the user to acquire or generate high-speed signals, i.e. for radar test systems. The board has been characterized and we have developed a HW/SW application framework based on the ZedBoard (Xilinx Zynq FPGA) to test and evaluate every component on the card.

Experience and skills

- Circuit Design (schematic capture)
- PCB Design (6 layers).
- High-speed digital circuits design, including part placement and routing, constraint generation, net length equalization, controlled impedance and signal integrity analysis
- Support for production and manufacturing activities, including planning and materials procurement.
- FPGA Design and Architecture Development
- Embedded software and Web Server
- Engineering and manufacturing documentation to support the project (Requirements, Specifications, Interface Control Documents (ICD), Test Plan, etc.)

Industry/Applications

- Medical imaging.
- Software Defined Radio (SDR).
- Radar Applications
- Data Acquisition
- Signal Synthesis