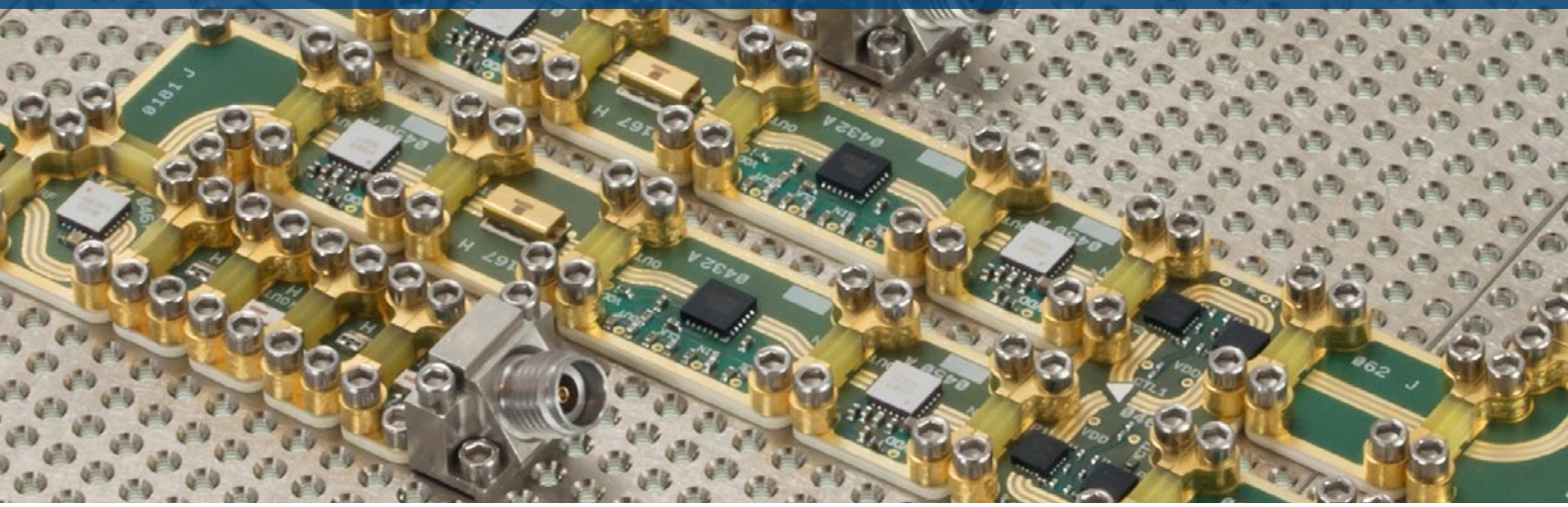
Newsletter for Analog Devices' Design Service Partners | Issue 4

ANALOG DEVICES
AHEAD OF WHAT'S POSSIBLE™

In This Issue

PARTNERZONE POST



Featured Partner Development: ADI on X-MWblocks

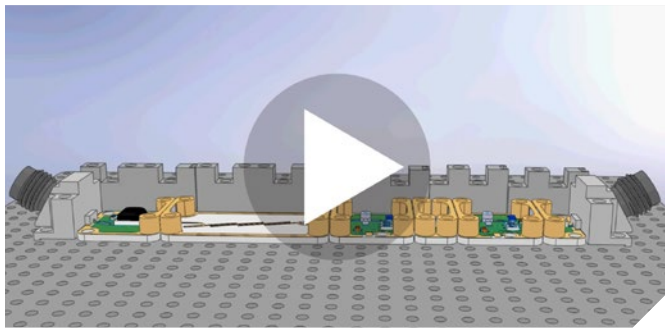
X-Microwave's complete modular ecosystem for RF and microwave components is called the X-MWsystem™. The X-MWsystem is built around two key concepts: 1. a complete modular building block ecosystem of RF and microwave components and test and production accessories and 2. X-parameter technology including free models and an online system simulator (powered by Keysight's Genesys and Spectrasys).

X-MWblocks™ are the drop-in and drop-on components at the heart of the X-Microwave innovative modular building block system. X-MWblocks are easy to test, integrate, align, and configure to 60 GHz. From prototype to final production hardware, no messy sweat soldering or silver epoxy processes are required. X-MWblocks are highly characterized and include X-parameter and S-parameter models. Optimize your design topology using our online X-MWsimulator™ and build your product with confidence. X-MWprotostations™ are prototype stations for testing individual X-MWblock components or to quickly cascade, align, and test multiple X-MWblocks to create an integrated microwave assembly. Prototype stations include:

- Prototype plates
- High performance RF probes
- Modular wall and lid pieces to build arbitrary housings
- High performance test cables (adapt from 1.85 mm to 2.92 mm)

X-cessories are all of the accessories used to build, test, and optimize X-MWsystems on the prototype station or in housings. Purchase

X microwave



X-MWblocks and all of the X-cessories you need to build a prototype or production integrated microwave assembly with functionality to 50 GHz.

X-Microwave is pleased to offer a broad selection of Analog Devices RF parts on its format. Over 250 parts from dc to 100 GHz are supported, including both packaged and die parts and drop-in or connectorized parts.

- Search ADI X-MWblocks

Partner Profile: Tecnova

Tecnova provides innovative, expert engineering at every phase of product development. Your needs are probably not unique and in many cases, it has done something similar. By integrating engineering innovation with manufacturing expertise, Tecnova can reduce guesswork and help limit costly complications and potential production flaws. It provides a complete documentation package that is ready for product manufacturing. And, most importantly, you own the intellectual property.

Case Study

Vibration Measurement: Wireless Portable Stroke Monitor

The Challenge

A manufacturer of vibrating feeder equipment was purchasing a private-labeled, off-the-shelf Bluetooth® low energy enabled accelerometer. The supplier was unable to keep up with product demand and had raised the price significantly. A lower cost solution was needed.

The Solution

Tecnova developed a new solution using a 3-axis, 16 *g* accelerometer from Analog Devices along with a low power microcontroller and a Bluetooth low energy (BLE) module. The device is powered by a lithium-ion polymer battery cell with hardware battery protection and an integrated, USB-powered charger.

"Tecnova developed a great solution. Exactly what we needed, and at a lower price." –End customer

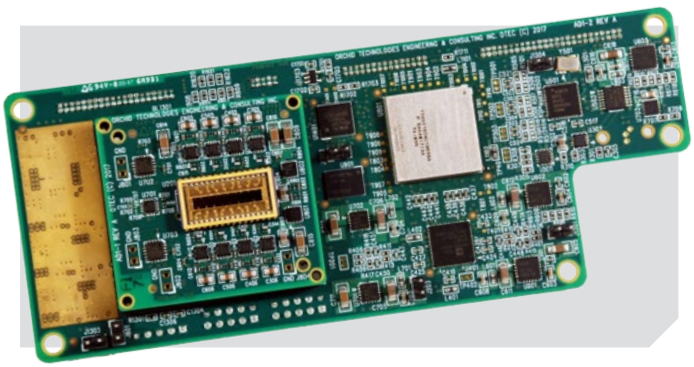
- Electronic Product Design and Engineering Services

Tech Talk: Orchid Technologies

Lidar is all about measurement of the time of flight. Orchid's new two board set measures the time of flight with precision to spare. This translates into unsurpassed, low noise spatial resolution.

The precision multichannel infrared laser light detection system is assembled on a specially designed ultraquiet, shielded circuit board assembly. That assembly is the upper circuit board assembly shown in the photograph below. Multiple high speed transconductance amplifiers interface with a photodetector diode array. That array is the source that provides highly sensitive light impulse data to the gigasample analog-to-digital conversion board residing below.

The lower board of Orchid's two-board set performs the dual-channel GSPS analog-to-digital conversion functions together with on-the-fly data analysis functions, data formatting functions, low noise power conditioning, and overall system supervision functions. Operating at 32 Gbps, Analog Devices AD9680 communications over a high speed, multichannel JESD204B data link to an Intel® PSG Arria® 10 FPGA. On-the-fly data processing is performed within the Arria 10 FPGA, making the whole system extremely efficient, low power, and low cost. Leveraging years of gigasample ADC design, this board set is Orchid's fourth generation of high speed JESD204B designs.



Orchid Technologies excels at the custom design of high speed, low noise analog circuitry, high speed analog-to-digital conversion technology, and custom Intel PSG FPGA system design. Orchid has implemented similar high speed JESD204B data conversion systems for automotive lidar, medical OCT interferometry imaging systems, and multichannel software-defined radio (SDR) applications. Orchid has unmatched experience with low noise design, analog filter design, JEDS204B system design, custom FPGA algorithm design, board-level design/layout, and rapid prototype construction. The development of custom electronic products for our OEM clients is Orchid's entire business. The design of precision, high speed analog data acquisition systems with rapid design cycles, demanding technical requirements, and unforgiving schedules sets Orchid apart. Visit *orchid-tech.com* or call 978-461-2000 to start your project.

- AD9680 gigasample ADC
- AD9578 high speed PLL clock
- ADA4939 precision amplifier
- ADG658 analog multiplexer
- Intel/Altera Arria 10 FPGA
- AD7105 low noise regulator

- Orchid Technologies

Partner Highlights

Tri-Star Design

Tri-Star Design, Inc.
Electronic Product Development

Tri-Star Design was selected to design, test, and integrate the electronics for an innovative 3D printer developed by MIT research and development. The electronic hardware includes the main system processing element, system power management, and the print head control board functions. This drive functionality was achieved using Analog Devices DACs and op amps for signal conversion and conditioning (AD8628 and AD5547). The design also makes use of several ADI higher voltage analog switches (ADG1636), which are critical in the print head control circuitry and reduced the number of external FETs needed. Take a look!

- MultiFab 3D Printing From MIT Researchers

Momentum Data Systems

MOMENTUM DATA SYSTEMS

SigmaDSP® for active speaker systems—application note

MDS has developed hardware platforms for in-speaker electronics based on Analog Device's SigmaDSP. This article looks at the considerations for in-speaker DSP processing. The availability of low cost, efficient, high performance class-D amplifier devices in the past few years has enabled the use of in-speaker electronics for better performance.

- SigmaDSP for active speaker systems

Vanteon

VANTEON ELECTRONIC DESIGN

Wi SUN Alliance

Vanteon Corporation is pleased to join the expanding list of members in the Wi-SUN Alliance, a consortium of global corporations and world leaders in the smart utility, smart city, and Internet of Things (IoT) markets. The Wi-SUN Alliance provides a forum for global collaboration to achieve interoperability by promoting IEEE 802.15.4g standards and creating a robust testing and certification program. It also provides marketing resources and collateral to increase awareness of its mission.

- Vanteon Smart Grid Data Sheet

Fidus

fidus

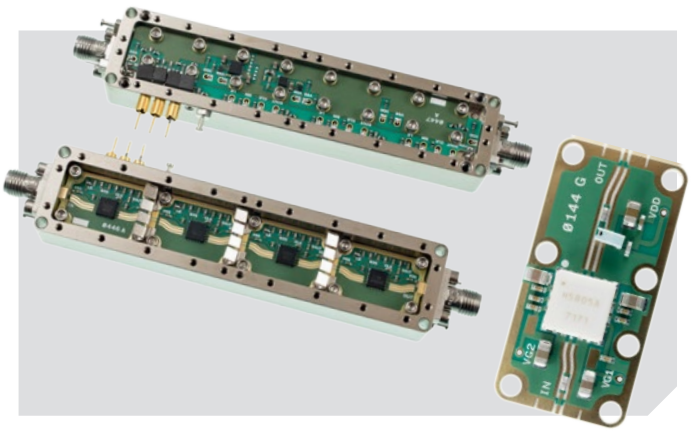
The Fidus-designed, AD9250-based, 8-channel, 250 MSPS, 14-bit, JESD204B ADC FMC is available for ordering! It is ideal for general instrumentation and a variety of mixed-signal application developments. Fidus is an expert at enabling your system with JESD204B FPGA cores. Need a hand? Need this customized? Give Fidus a shout.

- 8-Channel, 250MSPS, 14-bit, JESD204B, ADC FMC

Newest ADI X-MWblocks

Category	X-MW PN	ADI MFG PN	Format
Amplifier	XM-A2A3-0404D	HMC441LC3B	0404
Bias controller	XM-A738-0804D	HMC980LP4E	0804
Comparator	XM-A4H4-0809D	HMC874LC3C	0609
Divider	XM-A297-0604D	HMC705LP4E	0604
Mixer	XM-A5L9-0404D	HMC558ALC3B	0404
Modulator	XM-A6J8-0819D	ADRF6720-27	0819
PLL-VCO	XM-A5Y8-0409D	ADF4356	0409
Switch	XM-A3R1-0409D	ADRF5020BCCZN	0409

- Check out more X-MWblocks



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