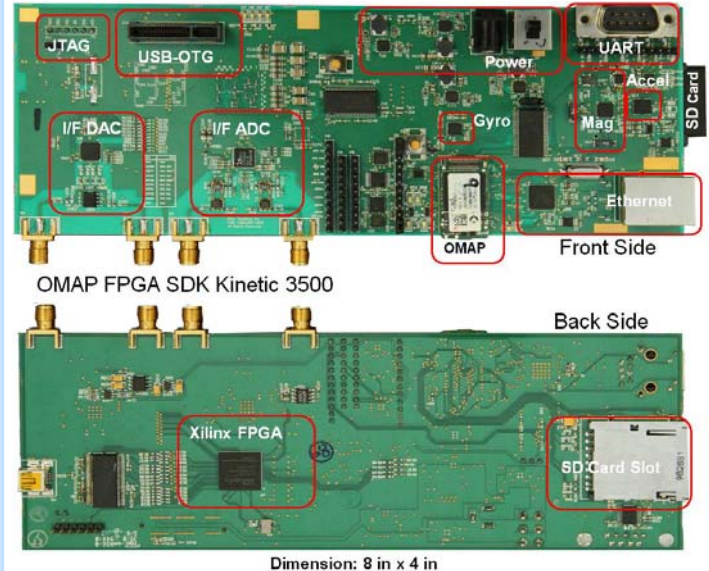


Features

- ◆ TI OMAP Family Processor
 - ◆ OMAP3530 System on Module (SOM)
- ◆ Xilinx Spartan-6 Field Programmable Gate Array (FPGA)
- ◆ Wide Variety of Sensors
 - ◆ 3-Axis Accelerometer
 - ◆ 3-Axis Gyroscope
 - ◆ 3-Axis Magnetometer
 - ◆ Temperature Sensor
 - ◆ GPS Kit (Add-on)
- ◆ High Speed A/D and D/A Converters
 - ◆ Audio Processing
 - ◆ Video Processing
 - ◆ Communication Processing
- ◆ Peripherals
 - ◆ MMC/SD card slot
 - ◆ RS-232 serial console interface
 - ◆ RJ-45 Ethernet interface
 - ◆ 1 USB 2.0 OTG
 - ◆ 3 USB 2.0 high speed ports
 - ◆ SPI, I2C, GPIO interfaces
 - ◆ Level Shifter with programmable logic levels
 - ◆ JTAG and ETM interfaces
- ◆ Turn-key Development Software
 - ◆ Board Support Package
 - ◆ Device Drivers
 - ◆ Web Based GUI
 - ◆ Web Server and Toolkits
 - ◆ OMAP Test Suite and Utilities

Benefits

- ◆ Turn-key embedded FPGA Sensor Development Kit based on the open-source software for OMAP Family Processor
- ◆ Allows developers to concentrate on creating domain and product differentiation features
- ◆ Easy learning curve about the fundamentals of OMAP technology and the open-ended of open source software
- ◆ FPGA allows developers to implement custom hardware functionality and signal processing algorithms without actual hardware redesign, reducing engineering recurring costs, and faster time to market
- ◆ Web based GUI for onboard provisioning, monitoring and diagnostic
- ◆ Web server and toolkits for web page creations and GUI customization
- ◆ Well-designed APIs that can be easily adapted to custom implementation
- ◆ Ideal for rapid prototyping



Overview

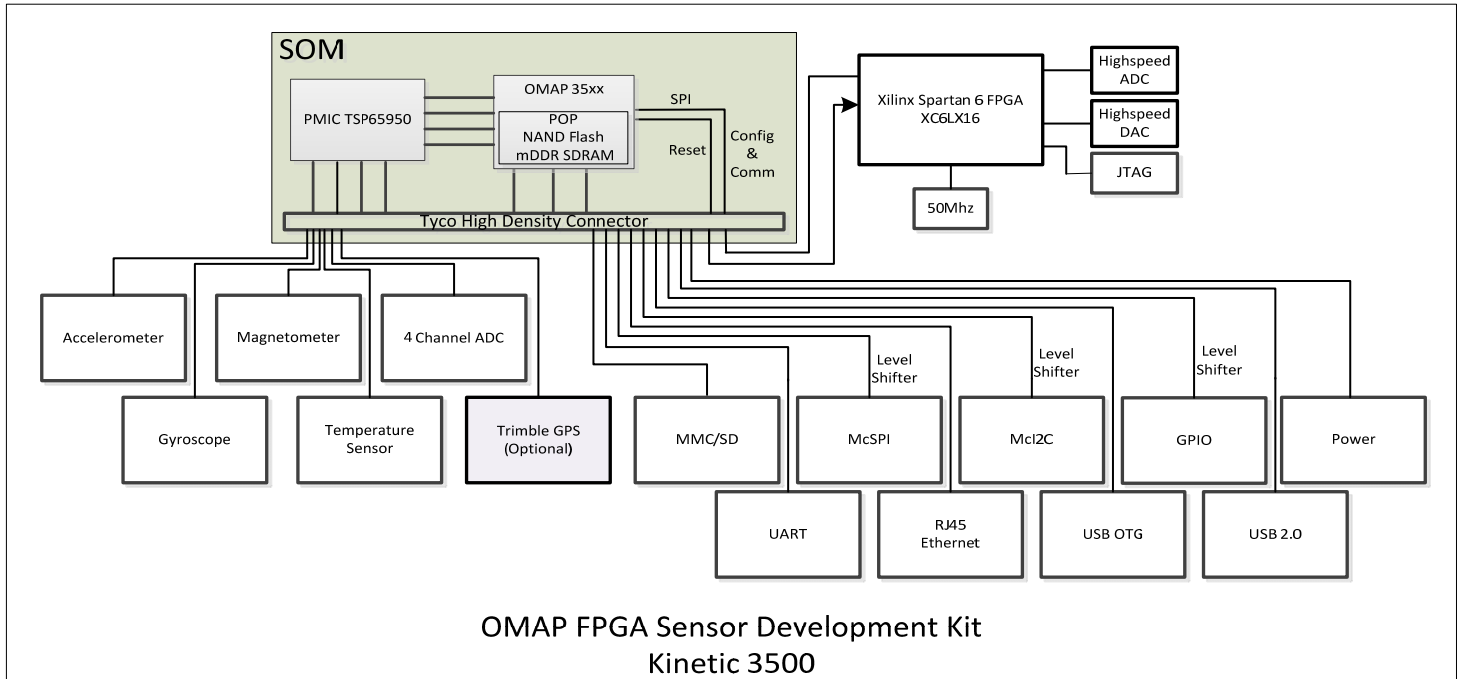
Alico Kinetic 3500 is the turn-key embedded development kit based on open-source software for the OMAP3530 processor from Texas Instruments. OMAP3530 is a high-performance multimedia applications processor comprising of advanced Superscalar ARM Cortex-A8 RISC core with NEON SIMD coprocessor, IVA2.2 subsystem with a C64x+ digital signal processor (DSP) core and SGX subsystem for 2D and 3D graphics acceleration. Alico Kinetic 3500 releases with a full set of capabilities that are operational out-of-the box. Equipped with working applications and software drivers for onboard peripherals, Kinetic 3500 allows developers to focus time and resources on development of product differentiation features. This reduces time learning the fundamentals of OMAP, writing basic software drivers, or getting up to speed on information about open source software. The kit is integrated with standard peripheral interfaces, GPS and navigation sensors, enabling immediate evaluation and development of OMAP's applications. The robust Web based GUI provides extensive diagnostic and configuration capabilities. The onboard FPGA gives developers the capability to implement custom hardware functionality and signal processing algorithms without actual hardware redesign. Flexibility and rapid prototyping offered by the FPGA provide added benefits to the overall product development cycle including minimal redesign of hardware, faster time-to-market, and field upgrades. Alico Kinetic 3500 is an ideal platform for early and rapid prototyping.

Target Market

Kinetic 3500 is designed for the following potential markets:

- ◆ High-speed Data Logging Systems
- ◆ GPS Based Handheld Devices
- ◆ Vehicle Tracking Systems
- ◆ Location Tracking Systems
- ◆ Set-Top Boxes
- ◆ Robotic Applications
- ◆ Motion Control Systems
- ◆ Platform Stabilization Systems
- ◆ Video Game Human Machine Interaction Systems
- ◆ High-speed Video Encoder/Decoder Systems

High Level System Diagram



Provisioning & Monitoring

Kinetic 3500 comes with a Web Server that can deliver system information when queried by a standard web browser. From a standard browser, the user can control and provision individual hardware components, monitor and capture, in real time, sensor data from accelerometers, gyroscopes, magnetometers, temperature sensors, GPS as well as operating systems related information (i.e. memory and CPU utilizations, disk usage). Captured data can be stored locally or remotely via a network for analysis. As an added feature, SDK firmware upgrade can be performed via a screen from the browser.

Query Component Registers

Gyroscope Query

Register	Type	Value
0	0	Reg X 3.96522
1	0	Reg Y -2.64348
2	0	Reg Z 0.90435
3	0	Reg ID
4	0	/dev/l2c-3, Addr 0x68

Setting Values

Type	Index	Value
0	1	123

Add Remove Set

Query Component Registers

Magnetometer Query

Register	Type	Value
0	0	MAG Reg X 26.00000
1	0	MAG Reg Y 20.51665
2	0	MAG Reg Z 20.51702
3	0	/dev/spidev1.1: spd 1000KHz m0 b8

Setting Values

Type	Index	Value
0	1	123

Add Remove Set

Specifications

Carrier Board	Software		
Xilinx Spartan-6 FPGA 3-Axis Gyroscope 3-Axis Accelometer 3-Axis Magnetic Sensor Temperature Sensor GPS Kit (add-on hardware) SPI I2C GPIO MMC/SD Card Slot Serial UART for RS-232 RJ-45 Ethernet 1 USB OTG 3 USB 2.0 High Speed Host Ports High Speed AD/DA Converters JTAG and ETM interfaces Power (3.3 to 4.2)V DC or regulated 5V	Base Support Package		
	Boot		
	X-loader 1.4.1 U-boot 1.3.3 or above	Bin	Src
	Boot Mode Boot Linux from SD card, NAND Flash or Ethernet	Bin	Src
	Kernel and Drivers		
	Linux Kernel 2.6.32 or above	Bin	Src
	File system Format - ROM/CRAM/ EXT2/EXT3/FAT/NFS/JFFS2/UBIFS	Bin	Src
	S/W drivers for Serial, RTC, NET, NAND, MMD/SD, USB and USB OTG	Bin	Src
	Applications		
	OpenWRT	Bin	Src
	Telephony with low bandwidth codec	Bin	Src
	Custom Software		
	3-Axis Accelerometer s/w driver	Bin	
	3-Axis Gyroscope s/w driver	Bin	
	3-Axis Magnetic Sensor s/w driver	Bin	
GPS s/w driver	Bin		
Temperature Sensor s/w driver	Bin		
Web Based GUI	Bin		
Web Server and toolkits	Bin		
Telephony with low bandwidth codec	Bin		
OMAP Software Utilities			
Pin Mux Configuration	Bin		
Register Read and Write	Bin		
GPIO Read and Write	Bin		
Verification S/W for NEONCoprocessor	Bin		
Device Driver Test Suite	Bin		
FPGA Configuration	Bin		

Kinetic 3500 SDK Includes:

- ◆ One Kinetic 3500 Digital Board
- ◆ One serial cable
- ◆ One straight RJ45 Ethernet cable
- ◆ One USB cable
- ◆ Power Adaptor
- ◆ Software CD
- ◆ Quick Start Guide
- ◆ End User License Agreement

Kernel Distributions Supported:

- ◆ OpenEmbedded
- ◆ TI Arago

Development Tool and Tool Chain Supported:

- ◆ GCC embedded compiler
- ◆ Eclipse
- ◆ BitBake

Ordering Information

Description	OMAP FPGA Sensor Development Kit
Model	Kinetic 3500
Availability	Q2 2011
Price	Contact us at sales@alicosystems.com or by telephone (310) 781-9555

Add-On Hardware

Item	Description	I/F to Kinetic 3500
GPS3500	GPS and Antenna Kit	UART

In addition to this Sensor Development Kit, Alico offers:

1. Premium Technical Support Package
 - ◆ Customers subscribe to the Premium Technical Support package will receive an additional 9 months of technical support and software updates, on top of the 3 months of Standard Support included in the purchase price of the kit.
2. GrayFox 3500 OMAP SDK Software Subscription and Support package. GrayFox 3500 is designed to jumpstart custom development. It includes:
 - ◆ Production quality source code of software drivers for sensor devices such as accelerometer, gyroscope, magnetometer, temperature sensor, GPS, web server and toolkits, and OMAP Test Suite and Utilities.
 - ◆ 12 months of technical support and software updates.

About Alico Systems, Inc.

Alico Systems, Inc. is an advanced technology business specializing in design and development of network communication based commercial and military systems. Alico is the leader in the architecture and development of wireless networks supporting mobile computing applications including SATCOM On-The-Move solutions, Wireless Sensor Networks, Tactical Network Management Systems, and OMAP Based Sensor Development Kit. For more information, please visit us on the web: <http://www.alicosystems.com>

Specifications subject to change without notice:

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