Comprehensive Sensor Hub Solution with Seven On-Board Sensors

(ACTIVE) TIDM-LPBP-SENSORHUB

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Description

This Sensor Hub design uses a Tiva platform for evaluating the use of ARM® Cortex™-M4-based TM4C devices in sensor fusion applications, demonstrating the mathematical and algorithm computation features of the M4 architecture. This design features seven on-board sensor functions including an InvenSense MPU-9150 9-axis MEMS motion tracking (3-axis gyro, accelerometer, and compass), Bosch Sensortec BMP180 pressure sensor, Sensirion SHT21 humidity and ambient temperature sensor, Intersil ISL29023 ambient and infrared light sensor, and TI's TMP006 non-contact infrared temperature sensor.

Features

- Seven on-board sensor functions
- Supported by TivaWare™ for C Series Driver Library
- Compatible with the following toolchains: Code Composer Studio™ IDE, Keil™ RealView®, IAR Systems Embedded Workbench®, Mentor Embedded Sourcery CodeBench™

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$12.99 - 49.99(USD)

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Schematic/Block Diagram

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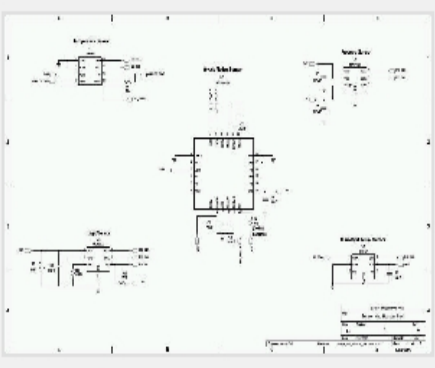

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Design Guide

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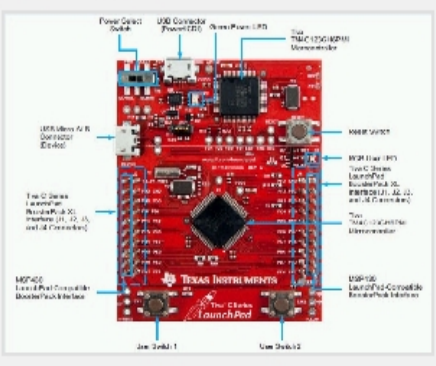

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Design Files

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Bill of Materials (BOM)

Find the complete list of components in this reference design.

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Part Number	Buy from Texas Instruments or Third Party	Buy from Authorized Distributor	Status
BOOSTXL-SENSHUB: Sensor Hub BoosterPack	$49.99(USD) In Stock Typically Ships in 1 to 3 Business Days Buy from TI	Pricing may vary. Buy from distributor	ACTIVE
EK-TM4C123GXL: Tiva™ C Series TM4C123G LaunchPad Evaluation Kit	$12.99(USD) In Stock Typically Ships in 1 to 3 Business Days Buy from TI	Pricing may vary. Buy from distributor	ACTIVE

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TI Devices (5)

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Part Number	Name	Product Family	Sample & Buy	Design Kits & Evaluation Modules
TM4C123GH6PGE	Tiva C Series Microcontroller	Control + Automation	Sample & Buy	View Design Kits & Evaluation Modules
TM4C123GH6PM	Tiva C Series Microcontroller	Control + Automation	Sample & Buy	View Design Kits & Evaluation Modules
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CAD/CAE symbols

Part #	Package | Pins	CAD File (.bxl)	STEP Model (.stp)
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Texas Instruments and Accelerated Designs Inc. have collaborated together to provide TI customers with schematic symbols and PCB layout footprints for TI products.

Step 1: Download and install the Ultra Librarian software ZIP: 62MB

Step 2: Download the Symbol and Footprint .bxl file.

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Technical Documents

User Guides (2)

Title	Abstract	Type	Size (KB)	Date	Views
BOOSTXL-SENSHUB Sensor Hub BoosterPack User Manual	Read Abstract	PDF	389	24 Apr 2013	2,428
Tiva C Series TM4C123G LaunchPad Evaluation Kit User's Manual	Read Abstract	PDF	620	15 Apr 2013	8,475

Design Files (4)

Title	Abstract	Type	Size (KB)	Date	Views
Comprehensive Sensor Hub Solution with Seven On-Board Sensors Bill of Materials		PDF	130	17 Jun 2014	170
Comprehensive Sensor Hub Solution w/ Seven On-Board Sensors Gerber Design Files		ZIP	298	17 Jun 2014	203
Comprehensive Sensor Hub Solution with Seven On-Board Sensors Schematic		PDF	270	17 Jun 2014	341
EK-TM4C123GXL Schematic		PDF	104	17 Jun 2014	290

Applications

- Field Transmitter: Pressure Sensor
- Field Transmitter: Temperature sensor

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