# Segment LCD-Based Low-End In-Home Display with Wireless RF Communication

(ACTIVE) TIDM-LOWEND-IHD  No reviews yet. Add your review and give us feedback

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Fully assembled board (shown above) developed for testing and performance validation only, not available for sale.

## Description

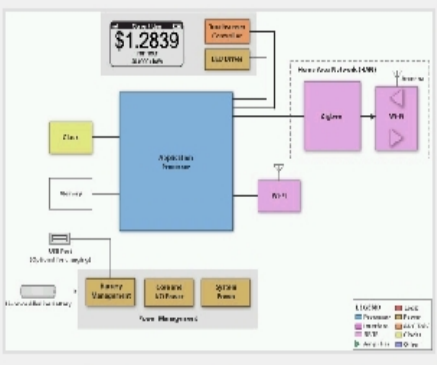
An in-home display (IHD) allows utility customers to track their energy usage information such as total energy consumption, pricing, and kilowatt hours in real time. The display can communicate with utility meters and other enabled appliance typically using Low Power RF communication. In entry line IHD, often a segment LCD based solution is enough. It is typically battery operated, needs some intelligence to deal with the various messages and connectivity. The TI low end IHD is featuring a full design articulated around the low power MSP430 micrcontroller. This microcontroller is driving the LCD segment display in very economical way thanks to its intergrated driver and is offering various ultra-low power modes to optimize the battery life-time. The MSP430 also offers standard serial port (SPI, RS232) to interface with the TI Low Power RF solution to address the most popular standard ranging from sub 1GHz to 2.4GHz ZigBee. Hardware and software package enables developer to come up very quickly with a cost optimized and simple IHD that can quickly interact with other smart appliances.

## Features

- Long battery life with very low power MSP430
- Easy interface with communication modules (UART or SPI)
- Segment LCD
- Support for low-power RF (sub-1GHz and 2.4GHz ZigBee) implementations
- Debug interfaces (JTAG and Serial)

### Schematic/Block Diagram

Quickly understand overall system functionality.



Download Schematic

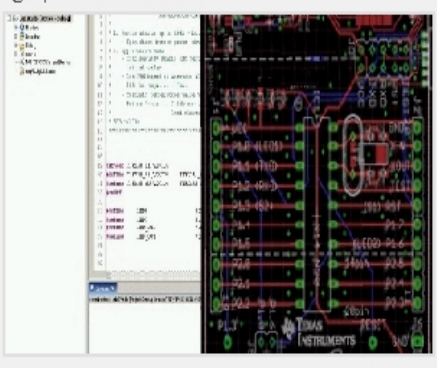
### Test Data

Get results faster with test and simulation data that's been verified.

Download Test Data

### Design Files

Download ready-to-use system files to speed your design process. Get Viewer.



Download Design Files

## Bill of Materials (BOM)

Find the complete list of components in this reference design.

Download BOM

## TI Devices (10)

Order samples, get tools and find more information on the TI products in this reference design.

| Part Number | Name | Product Family | Sample & Buy | Design Kits & Evaluation Modules |
|---|---|---|---|---|
| CC2530 | Second Generation System-on-Chip Solution for 2.4 GHz IEEE 802.15.4 / RF4CE / ZigBee | SimpleLink Solutions | Sample & Buy | View Design Kits & Evaluation Modules |
| CC2538 | A Powerful System-On-Chip for 2.4-GHz IEEE 802.15.4-2006 and ZigBee Applications | Wireless | Sample & Buy | View Design Kits & Evaluation |

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## CAD/CAE symbols

| Part # | Package \| Pins | CAD File (.bxl) | STEP Model (.stp) |
|---|---|---|---|
| CC2530 | VQFN (RHA) \| 40 | Download | - |
| CC2538 | VQFN (RTQ) \| 56 | Download | - |
| MSP430FG4616 | LQFP (PZ) \| 100 | Download | - |
| | BGA MICROSTAR JUNIOR (ZQW) \| 113 | Download | - |
| MSP430FG4617 | LQFP (PZ) \| 100 | Download | - |
| | BGA MICROSTAR JUNIOR (ZQW) \| 113 | Download | - |
| MSP430FG4618 | LQFP (PZ) \| 100 | Download | - |
| | BGA MICROSTAR JUNIOR (ZQW) \| 113 | Download | - |
| MSP430FG4619 | LQFP (PZ) \| 100 | Download | - |
| | BGA MICROSTAR JUNIOR (ZQW) \| 113 | Download | - |

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.

- read more -

## Technical Documents

### User Guides (1)

| Title | Abstract | Type | Size (KB) | Date | Views |
|---|---|---|---|---|---|
| Segment LCD Based Low End In-Home Display With Wireless RF Design Guide (Rev. A) | | PDF | 14123 | 24 Feb 2014 | 328 |

### Design Files (2)

| Title | Abstract | Type | Size (KB) | Date | Views |
|---|---|---|---|---|---|
| Segment LCD Based Low End In-Home Display With Wireless RF Schematic | | PDF | 134 | 24 Jan 2014 | 445 |
| Segment LCD Based Low End In-Home Display w/ Wireless RF Bill of Materials (BOM) | | ZIP | 26 | 24 Jan 2014 | 117 |

## Related Tools & Software

### Software (1)

Segment LCD Based Low End In-Home Display w/ Wireless RF Reference Design Files
(ZIP, 1185 KB)  312 views, 24 Jan 2014

## Applications

- Data Concentrator
- In-Home Display
- Smart E-Meter: AMR/AMI

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