Following on TI’s first-to-market introduction of the ZigBee® stack, TI provides an industry-first complete wM-Bus ecosystem, including an optimized hardware platform for microcontrollers, sub-1GHz radio devices and high-efficiency battery management solutions.

Featuring TI’s new CC112x/120x RF Performance Line, the ultra-low-power MSP430™ microcontroller and the high-efficiency TPS62730 and TPS62740 DC/DC devices offer multiple evaluation platforms for testing and enabling wM-Bus (EN13757-x) communication for smart utility meters (gas, water, heat and e-meters), sub-metering (heat cost allocators) and data concentrators.

The popular S, T and C modes in the 868-MHz band as well as all narrow-band N-modes in the ETSI 169-MHz band are also fully supported with the new CC112x/120x RF Performance Line, which delivers the best sensitivity, selectivity and blocking. The 169MHz frequency combined with up to 500mW of transmit power, enables long-range and robust communication even in difficult environments and dense urban area deployments in Europe.

TI’s wM-Bus full system solution is a combination of easy-to-use development kits, featuring TI’s MSP430 ultra-low-power microcontroller and CC11xx/120x low-power wireless connectivity devices, a robust and field-proven wM-Bus stack and high-efficiency RF-friendly ultra-low-power DC/DC devices.

Hardware and software support for both 169-MHz and 868-MHz wM-Bus systems:

- Best blocking and selectivity performance for a robust and future-proof solution
- WaveMatch enables reliable packet reception and eliminates false packet detection
- “RX Sniff” mode maintains best RF performance in RX while reducing power consumption
- High efficiency battery management optimized for TI RF and MCU devices
- Complete development kit available for stack and RF performance evaluation

Learn more at www.ti.com/tool/wmbus

Block diagram of TI’s complete wM-Bus N-mode system, including a high-efficiency battery management solution.
TI’s wM-Bus solution offers reliable hardware + software for Smart Grid applications worldwide

Optimized for low-cost and robust RF communication between smart meters or sub-meters and data collectors, the TI wM-Bus platforms can be combined with dedicated TI high-efficiency power management devices, which have been designed to work with TI’s radios without performance penalties.

wM-Bus Hardware and Software Kits

<table>
<thead>
<tr>
<th>Frequency Band</th>
<th>Microcontroller</th>
<th>Radio</th>
<th>Software</th>
</tr>
</thead>
<tbody>
<tr>
<td>169 MHz</td>
<td>SimpleLink (CC1120): CC1120DK</td>
<td>CC1120EMK-169</td>
<td>SimpleLink (CC1120 + PA): CC112XSKY65367EM-RD +30 dBm</td>
</tr>
</tbody>
</table>

Power Management EVMs for wM-Bus

<table>
<thead>
<tr>
<th>Issue to Address</th>
<th>Solution</th>
<th>Evaluation Tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>Efficient power supply from primary batteries (Supports all MCU + RF kits listed above)</td>
<td>TPS62730</td>
<td>TPS62730EVM</td>
</tr>
<tr>
<td>High-power supply (RFPA)</td>
<td>TPS62065/67</td>
<td>TPS62065-67EVM</td>
</tr>
<tr>
<td>Capacitor-based battery assistance</td>
<td>TPS61251</td>
<td>TPS61251EVM</td>
</tr>
<tr>
<td>Ultra-low Iq step-down converter for wireless connectivity</td>
<td>TPS62740</td>
<td>TPS6240EVM</td>
</tr>
<tr>
<td>Li-Ion battery support</td>
<td>TPS63050</td>
<td>TPS63050EVM</td>
</tr>
</tbody>
</table>

Solution highlights:

• Designed with the metering and sub-metering markets in mind, these TI platforms deliver leading RF performance combined with lowest power consumption, a high transmit power option and proven wM-Bus software stack.

• Together these boards create the complete wM-Bus solution (hardware + software + power management) fully compliant with EN 13757-4 modes N, C, S and T.

• Wireless M-Bus support for RF transceivers (CC110x, CC112x and CC120x) as well as the CC430 SoC and families.

• CC430 and CC1200 come with AES-128 hardware encryption/decryption engine to meet low latency requirements in EN13757-4 and to reduce stack code size.

• Certified wM-Bus RF modules with integrated wM-Bus software stack available from multiple TI third parties.

• Using RF modules ensures interoperability and compliance, and significantly reduces time-to-market and development/certification costs.

Get online TI support and documentation at www.ti.com/tool/wmbus

- ETSI Cat. 1 Receiver-Capable wM-Bus 169MHz
- wM-Bus Smart Meter Subsystem at 868 MHz: http://www.ti.com/tool/TIDC-WMBUS-868MHZ

wM-Bus related documentation:

- TI AN121: “Wireless M-Bus Implementation with CC112x/CC120x High Performance Transceivers”
- TI report: “CC112x/CC120x RX Sniff Mode”
- TI DN039: “IPICPC for 868/915 MHz operation with the CC112x, CC117x and CC12xx”
- TI DN040: “Reduced Battery Current Using CC112x, CC1175 and CC1200 with TPS62730”
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