# Overview Of TI Transmitter Solutions

<table>
<thead>
<tr>
<th></th>
<th>bq500210</th>
<th>bq500212A</th>
<th>bq500412</th>
<th>bq500414Q</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Voltage In</strong></td>
<td>19V</td>
<td>5V</td>
<td>12V</td>
<td>12V</td>
</tr>
<tr>
<td><strong>Transmitter Type</strong></td>
<td>A1/A10</td>
<td>A5/A11</td>
<td>A6/A19</td>
<td>A6/A19/A21</td>
</tr>
<tr>
<td></td>
<td>(1 Coil)</td>
<td>(1 Coil)</td>
<td>(1, 2 or 3 Coil)</td>
<td>(1, 2 or 3 Coil)</td>
</tr>
<tr>
<td><strong>Output Power</strong></td>
<td>5W</td>
<td>5W</td>
<td>5W</td>
<td>5W</td>
</tr>
<tr>
<td><strong>Full/Half Bridge Drive</strong></td>
<td>HB</td>
<td>FB</td>
<td>HB</td>
<td>FB</td>
</tr>
<tr>
<td><strong>Dynamic Power Level</strong></td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td><strong>Charging Area</strong></td>
<td>18mm Diameter</td>
<td>18mm Diameter</td>
<td>70x20mm Diameter</td>
<td>~70x20mm Diameter</td>
</tr>
<tr>
<td><strong>WPC1.1</strong></td>
<td>No</td>
<td>Yes</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>(Contact Factory for 210A)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>2 Way comms</strong></td>
<td>No</td>
<td>No</td>
<td>No</td>
<td>No</td>
</tr>
<tr>
<td><strong>Released to Market</strong></td>
<td>Yes (210A Planned)</td>
<td>Yes</td>
<td>Yes</td>
<td>No (3/14)</td>
</tr>
<tr>
<td><strong>Samples/ EVM</strong></td>
<td>Yes (inc 210A)</td>
<td>Yes</td>
<td>Yes</td>
<td>Now</td>
</tr>
</tbody>
</table>
bq500212A
Simplified BOM, 5V Transmitter for A5/A11

Features

• **Simplified BOM reduces** system cost in 5V A5/A11 WPC1.1 Transmitters. Only 5 IC’s needed

• **Enhanced “Foreign Object Detection”** scheme simplifies Compliance to WPC1.1

• **Patented “Dynamic Power Limit™”** approach for robust operation from USB port/Low Power adapter

• **Simplified Standby Circuit** ensures compliance w/ CEC-100 Specification

• **Supports Hybrid Cap scheme** w/ X7R/OG Res Caps to reduce System Cost

<table>
<thead>
<tr>
<th>Standby Power</th>
<th>bq500211</th>
<th>bq500211A w/ MSP430</th>
<th>bq500212A</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Rx on Pad</td>
<td>&lt;210mW</td>
<td>&lt;90mW</td>
<td>&lt;100mW</td>
</tr>
<tr>
<td>Rx on Pad (Chg Comp)</td>
<td>&lt;210mW</td>
<td>&lt;90mW</td>
<td>&lt;50mW</td>
</tr>
</tbody>
</table>
bq500412
Reduced BOM Transmitter for 1-3Coil A6 Transmitters

Features

• Freepositioning Wireless Power Transmitter Solution

• Supports A6 and A19 Transmitter Types
  - 12V Input Voltage
  - 1, 2 or 3 Coils
  - Drives one coil at a time for highest efficiency

• No Holes in Charging Area
  - Even in transition between coils

• Simplified BOM
  - Number of IC’s reduced >30%
  - 1 Drive Stage instead of 3
  - No MSP430 Supervisor for CEC Compliance

• Enhanced “Foreign Object Detection” scheme simplifies Compliance to WPC1.1

• Implements “Dynamic Power Limit™” approach for robust operation from USB port/Low Power adapter, when 5V Boost Converter used
Highlighted Key Features

**Dynamic Power Limit™**

- Patented *Dynamic Power Limit™* Function
- Designed to simplify use with USB Port or Low Power Adapter
- bq500212A monitors input rail to ensure Power Supply stays in regulation.....limiting o/p power if required

**Sequential Charging**

- bq500412 allows for Sequential Sequencing of Multiple Receivers
- Once one RX has finished charging, ETP signal sent
- Transmitter then Pings Each coil
- Power delivered to new Receiver
Wireless Power Transmitters for Automotive Systems

- Solutions today for “Aftermarket” applications: bq500412A
  - 3 Coil Transmitter Type for Enhanced Spatial Freedom
  - Fully released, and supports latest WPC1.1 Standard
  - 3 Coil solution ensures High System Efficiencies of >70%

- New Products in Development for “In Car” systems: bq500414Q
  - Q100 version of bq500410A
  - Benefits from same features of High Efficiency and Spatial Freedom
  - Enhanced with access to I2C Interface for System Control/Feedback
  - Sample now, RTM 3Q’14