CC-Antenna-DK2 Quick Start Guide

1. Kit Contents

- 1 x CC-ANTENNA-DK2
- 1 x JSC - SMA cable (MXFR01JA1500)
- 1 x JSC - JSC cable (MXJA01JA1200)
- 1 x Documentation

This guide will show how to connect the CC-Antenna-DK2 to a LaunchPad, SensorTag or an Evaluation Module (EM). It will also point to additional resources.

2. Snap a board from the panel

The CC-Antenna-DK contains 13 boards; 3 calibration boards and 13 antenna boards.

Each CC-Antenna-DK has been scribed (v-cut) so a specific board can easily be snapped out of the panel. Connectivity to each antenna board is achieved via a JSC (uSMA) connector.

3. Board Overview

<table>
<thead>
<tr>
<th>#</th>
<th>Board Description</th>
<th>Freq. (MHz)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>CR2032 PCB Antenna</td>
<td>868 or 915/920 &amp; 2440¹</td>
</tr>
<tr>
<td>2</td>
<td>Compact PCB Antenna (AN043)</td>
<td>&amp; 2440</td>
</tr>
<tr>
<td>3</td>
<td>Fractus Chip Antenna</td>
<td>868 or 915/920 &amp; 2440</td>
</tr>
<tr>
<td>4</td>
<td>PCB Helical Antenna</td>
<td>433 or 470-510</td>
</tr>
<tr>
<td>5</td>
<td>Antenna Diversity</td>
<td>2440</td>
</tr>
<tr>
<td>6</td>
<td>Compact PCB Helical Antenna (DN038)</td>
<td>868 or 915/920</td>
</tr>
<tr>
<td>7</td>
<td>ProKit Antenna</td>
<td>169</td>
</tr>
<tr>
<td>8</td>
<td>Antenna Diversity</td>
<td>868 or 915/920</td>
</tr>
<tr>
<td>9</td>
<td>Dual-band PCB Antenna¹</td>
<td>868 / 915/920 &amp; 2440</td>
</tr>
<tr>
<td>10</td>
<td>PCB Helical Antenna</td>
<td>433 or 868</td>
</tr>
<tr>
<td>11</td>
<td>PCB Antenna (DN007)</td>
<td>868 / 2440</td>
</tr>
<tr>
<td>12</td>
<td>Single-sided Compact PCB Antenna</td>
<td>868 or 915/920</td>
</tr>
<tr>
<td>13</td>
<td>SHORT Calibration</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>LOAD Calibration</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>OPEN Calibration</td>
<td>-</td>
</tr>
<tr>
<td>16</td>
<td>Helical Wire</td>
<td>169 / 315</td>
</tr>
</tbody>
</table>

Dual-band option

All Low Power RF bands are covered by the antenna kit.

4. Connection to a SensorTag

Antenna board #9 has been snapped out from the CC-Antenna-DK2 panel and is connected to a SensorTag via the JSC to JSC cable².

5. Connection to a LaunchPad

Antenna board #8 has been snapped out from the CC-Antenna-DK2 panel and is connected to a LaunchPad via the JSC to JSC cable².

6. Connection to EM or test equipment

If the antenna board shall be connected to EM or test equipment then the JSC to SMA cable can be used. The JSC to SMA cable is a low cost cable with significant insertion loss at 2.4 GHz. Alternative cables (MXH-Q287XB3000) with lower insertion loss can be used. Different cable lengths are also available and this is visible in the part number.

For example: 15 cm (MXFR01JA1500), 12 cm (MXJA01JA1200) and 30 cm (MXH-Q287XB3000). The antenna resonance can vary slightly pending on the cable length.

¹ the 0 ohm resistor must be positioned towards the JSC connector on the SensorTag/LaunchPad instead of the integrated antenna.

² The 0 ohm resistor must be positioned towards the JSC connector on the SensorTag/LaunchPad instead of the integrated antenna.

These are the key points from the quick start guide. It provides a comprehensive overview of the kit contents, how to snap a board from the panel, the board overview, and instructions for connecting to various devices like a SensorTag, LaunchPad, or evaluation equipment. The guide also includes a table listing the different boards available, their frequencies, and a note on cable options for test equipment.
7. Packet Error Rate (PER)

When the antenna is connected then the Packet Error Rate test can be performed.

The exact format of the PER test will depend on the HW platform choice (EM / LaunchPad / SensorTag) and SW test suite (IAR, CCS, SmartRF Studio).

A. More information

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We hope that the CC-Antenna-DK2 will help with the choice of antenna for your final application.

B. References

www.ti.com/lit/swra351

[2] CC-Antenna-DK2 Documentation
www.ti.com/lit/swra496

[3] Low Power RF ICs web page
www.ti.com/lsds/ti/wireless_connectivity/overview.page

www.e2e.ti.com/support/wireless_connectivity/proprietary_sub_1_ghz_simplification/156f0375f556
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- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
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