

Antenna Evaluation Kit Quick Start Guide

1. Kit Contents



1 x Antenna panel
1 x SMA male/male adapter
5 x SMA female through-hole connectors
Documentation

This guide will show how to connect the antenna board to an RF Evaluation Module (EM) connected to any of the SmartRF Evaluation Boards. It will also point to additional resources.

2. Snap a Board from the Panel



The antenna evaluation kit contains 16 boards (assembled in one panel); 3 calibration boards and 13 antenna boards.

Each board has been scribed (v-cut) so a specific antenna board can easily be snapped out of the panel.

3. Board Overview

Nr.	Board Description	Freq. (MHz)
1	"SHORT" Calibration	-
2	"LOAD" Calibration	-
3	Mitsubishi Chip	868
4	Pulse Chip	868
5	Loaded Stud PCB (L)	868
6	Dual band Meander PCB Antenna	868 & 2440
7	Inverted F PCB	2440
8	Pulse Helical Wire	433
9	"OPEN" Calibration	-
10	Loaded Stud PCB (S)	868
11	Helical Wire	915
12	Mitsubishi Chip	433
13	Helical Wire	433
14	Helical Wire	169
15	Meander PCB	2440
16	Pulse Helical Wire	315

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

4. Connection to the SmartRF Evaluation Board



Snap the antenna board out from the antenna panel. Solder on the SMA female connector. Connect the antenna board to an RF Evaluation Module via the SMA Male/Male Adapter.

Finally, connect the EM board with the antenna to the SmartRF EB.

5. Packet Error Rate (PER)

When the antenna is connected, any RF performance test can be performed. For instance, the Packet Error Rate test, which is preprogrammed on most of the TI RF development kits, can be performed.



The exact format of the PER test will depend on the choice of EM and SmartRF EB version.

6. SmartRF Studio

After running the PER test, the next recommended step is to install SmartRF Studio and to connect the evaluation board to the PC.



When installing SmartRF Studio, you will also install the USB drivers required for the evaluation board.

SmartRF Studio can be used for RF testing and evaluation.

SmartRF Studio can be downloaded from www.ti.com/smartrfstudio

7. Stand-alone Antenna Boards

The antenna board does not have to be connected to an EM board. This can be the case when the antenna performance shall be evaluated for a smaller GND size.



If the board is used as stand-alone then for the sub 1GHz boards; the matching network should be reviewed.

A. More Information

On Texas Instruments' Low-Power RF web site you will find all our latest products, application and design notes, events updates, and much more. Just go to www.ti.com/lprf

The Low Power RF Online Community has forums, blogs and videos. Use the forums to find information, discuss and get help with your design. Join us at www.ti.com/lprf-forum

The TI LPRF eNews letter keeps you up to date on e.g. new products, application notes, software and events. Sign up at www.ti.com/lprfnewsletter

B. References

- [1] **CC-ANTENNA-DK web page**
www.ti.com/tool/cc-antenna-dk
- [2] **Low Power RF ICs web page**
www.ti.com/lprf
- [3] **LPRF Developer's Network**
<http://focus.ti.com/general/docs/gencontent.tsp?contentId=29028>

We hope that the Antenna Evaluation Kit will help you with the choice of antenna for your final application.

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