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Technical Description

The ZLLRC is a remote control demonstrating the CC2530 chip from Texas Instruments used as a ZigBee Light Link (ZLL) control device. The board is powered by a CR2025 battery that delivers 3.0V to a DCDC, which in turn transforms this into a 2.1V supply voltage for the CC2530 radio SoC.

The wireless control protocol used is ZigBee Light Link, which employs an IEEE802.15.4 MAC at 2.4GHz. The frequency range is 2405MHz to 2480MHz, with 5MHz channel spacing. The PHY layer uses a DSSS technique with a chip rate of 2Mbps and a data rate of 250kbps. The modulation format is half sine shaped O-QPSK.

The CC2530 System on Chip has a differential RF output. On the ZLLRC board, this differential output is fed to an integrated Balun component, which transforms the differential RF signal into a 50 ohm single ended signal and feeds it to a 50 ohm inverted F PCB antenna. The antenna gain is 4.5dBi.