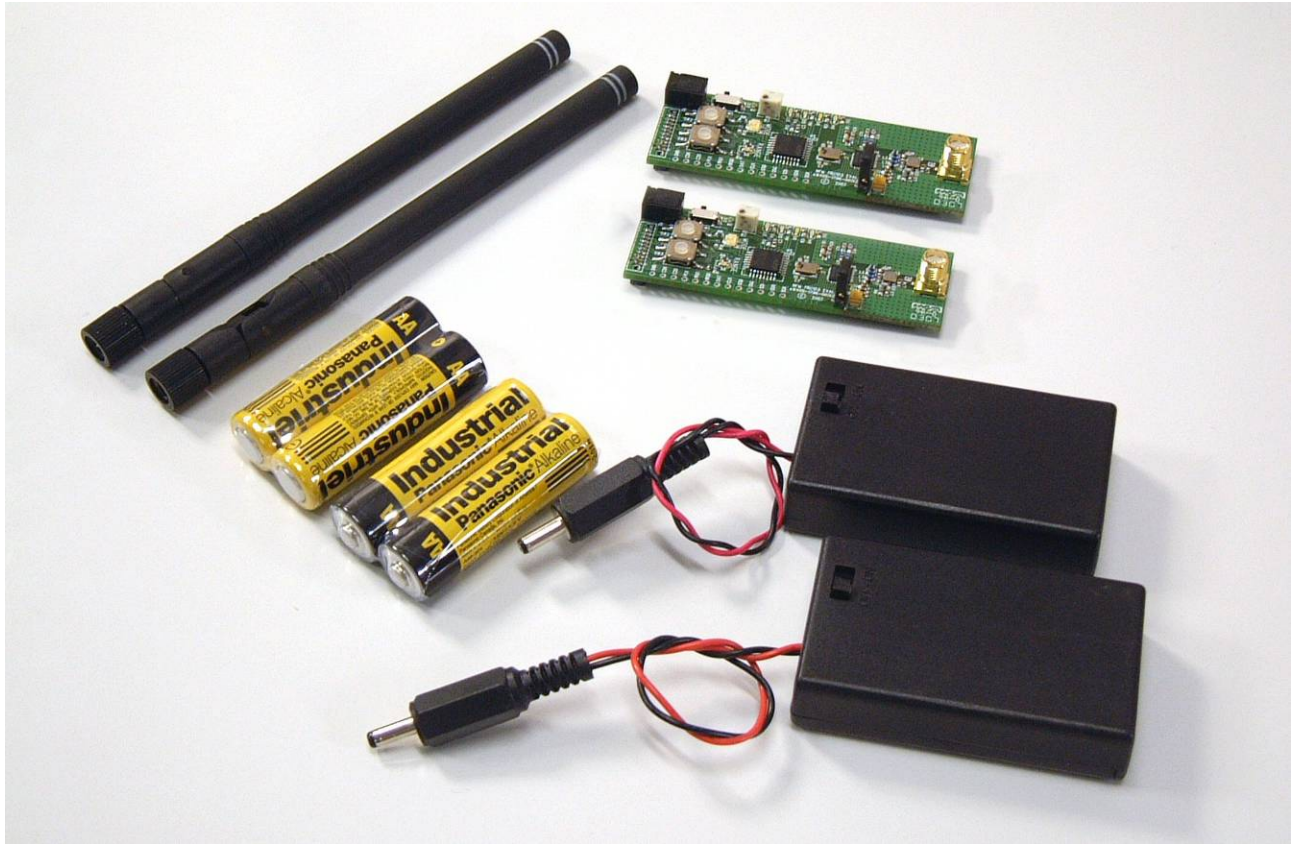


Quick Start Guide



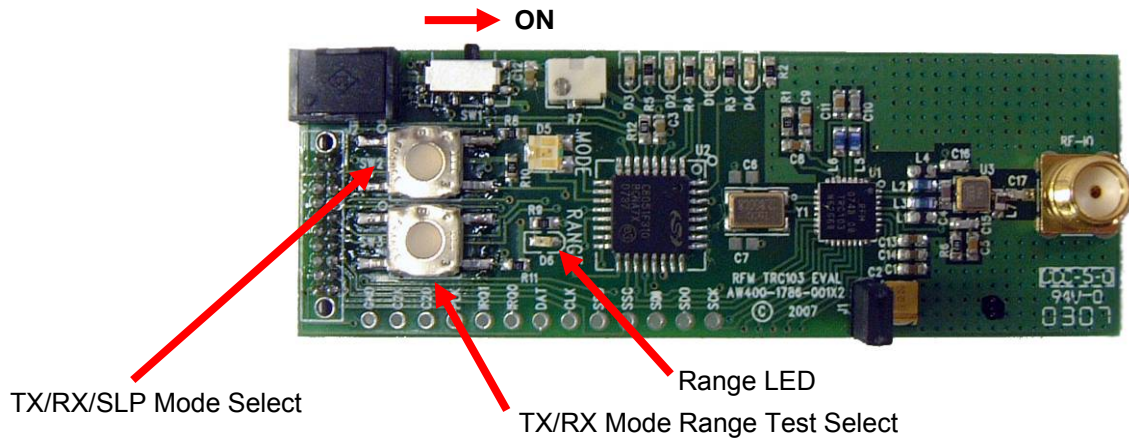
TRC103 Demo/Evaluation Kit

DR-TRC103-868EV (863-870 MHz)

DR-TRC103-915EV (902-928 MHz)

Kit Contents:

- 2 DR-TRC103-868EV Boards
- 2 AA Battery Packs
- 2 868 MHz Dipole Antennas
- 4 AA Batteries



Range Test Quick Start:

- 1- Insert AA batteries into battery case of both boards.
- 2- Turn on the boards by sliding the switch as indicated in Fig. 1 above. All LED's will flash and the "Mode" LED will be green.
- 3- On one board, briefly press and release the "TX/RX Mode Range Test Select" button. The "Range" LED should illuminate continuously. This is the "Receive" board.
- 4- On the other board, press and hold the "TX/RX Mode Range Test Select" button until the LED's begin flashing. This board is the "Transmitting" board.

If the devices are receiving good packets then the yellow and green LED's will be flashing alternately on each board.

To verify that the devices are properly operating, disable the "Receive" board by pressing and releasing the "TX/RX Mode Range Test Select" button twice (2x). The "Range" LED will turn off.

On the "Transmitting" board, you should observe the Yellow and Red LED's flashing. This indicates that the transmitter sent the packet but did not receive an acknowledge signal back from the receiver.

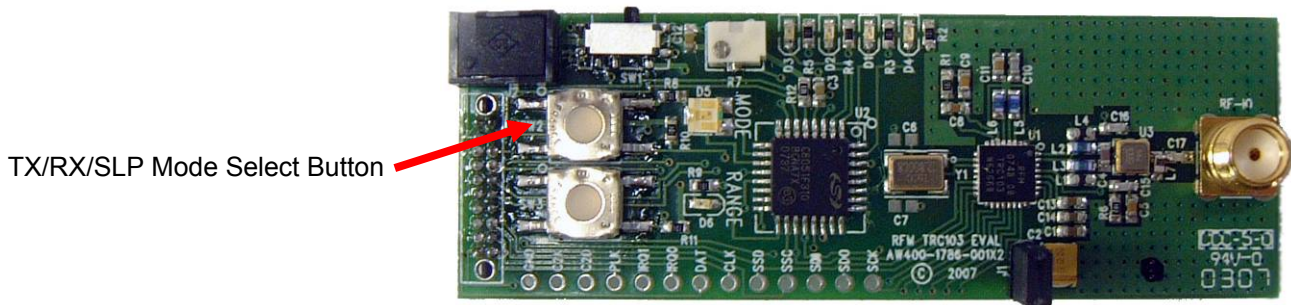
Power-up

Power-up Configuration:

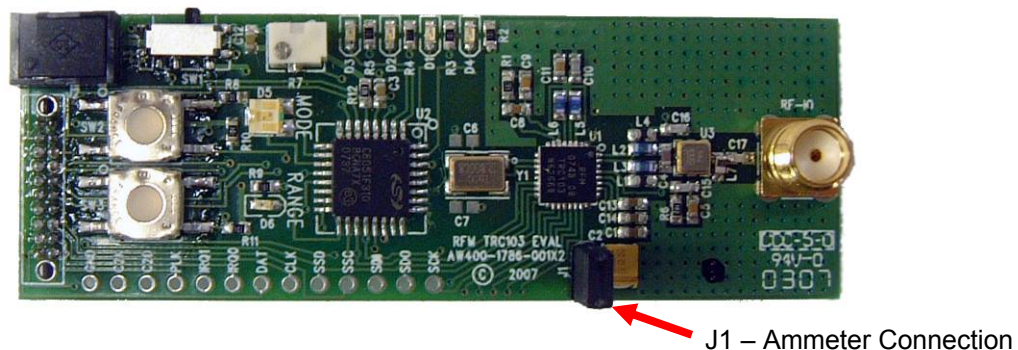
- Freq – 868.35 MHz
- Power - +10dBm
- Δf deviation – 50 kHz
- Data Rate – 2kbps
- RX Baseband BW – 100kHz

On power-up the board is initially configured to “Receive Continuous Mode”. See the TRC103 Datasheet for a detailed explanation of Continuous Mode vs Buffered (Packet) Mode. In this mode the Mode LED will be Green. Receive Continuous Mode allows the user to connect a modulated signal from a signal generator source onto the board through a short, coaxial cable and verify the demodulated signal with an oscilloscope through the DAT pin.

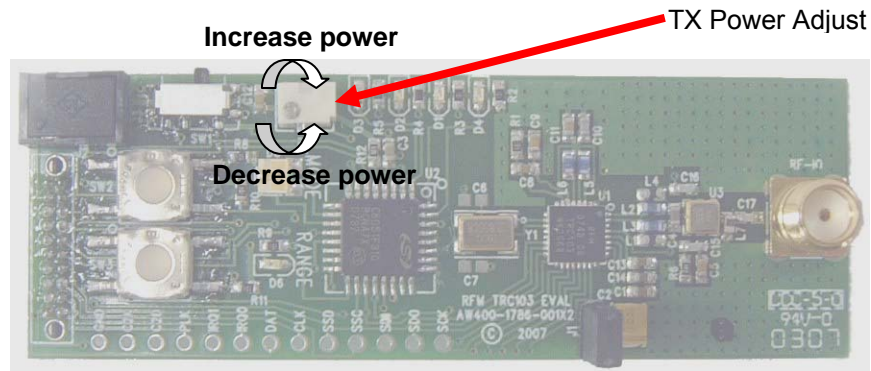
Briefly pressing the “TX/RX/SLP Mode Select” button once configures the board into “Transmit Continuous Mode”. The Mode LED will change color from Green to Yellow. This mode turns on the transmitter. The frequency and output power may be verified on a spectrum analyzer. A square-wave modulating signal may be applied to the DAT pin and modulation observed on the spectrum analyzer.



Briefly pressing the “TX/RX/SLP Mode Select” button once again configures the board into “Sleep Mode”. The Mode LED will turn off. Connecting an ammeter across the terminals of J1, with the jumper removed, the user can verify the extremely low current usage of the TRC103 device.



Transmit Power Adjust



The potentiometer (POT) is used to adjust the transmit power. To adjust the power, perform the following:

1. To **increase** the output power, rotate the slot clockwise with a small tuning tool.
2. To **decrease** the power, rotate the slot counter clockwise.

The transmit power is divided into 6 levels (See TRC103 datasheet TXCFG register). Rotating the POT adjusts the voltage level on the internal A-to-D converter (ADC) of the microprocessor. The ADC continuously samples the POT for a change and updates the TX power register if it detects a change in voltage level. Each time the microprocessor updates the TX register the CMD LED will flash indicating an SPI write.

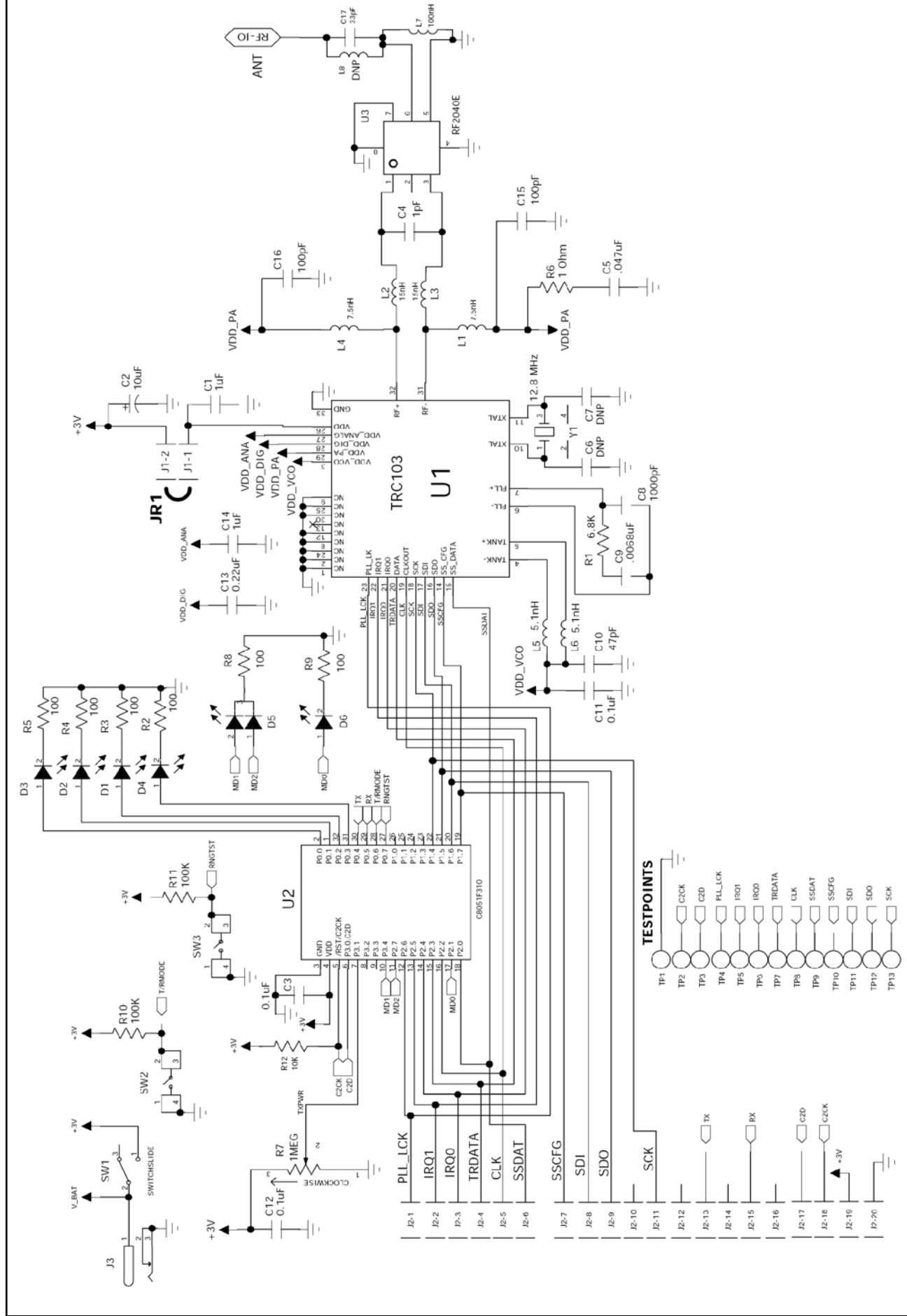


Figure 21. 915 MHz Schematic

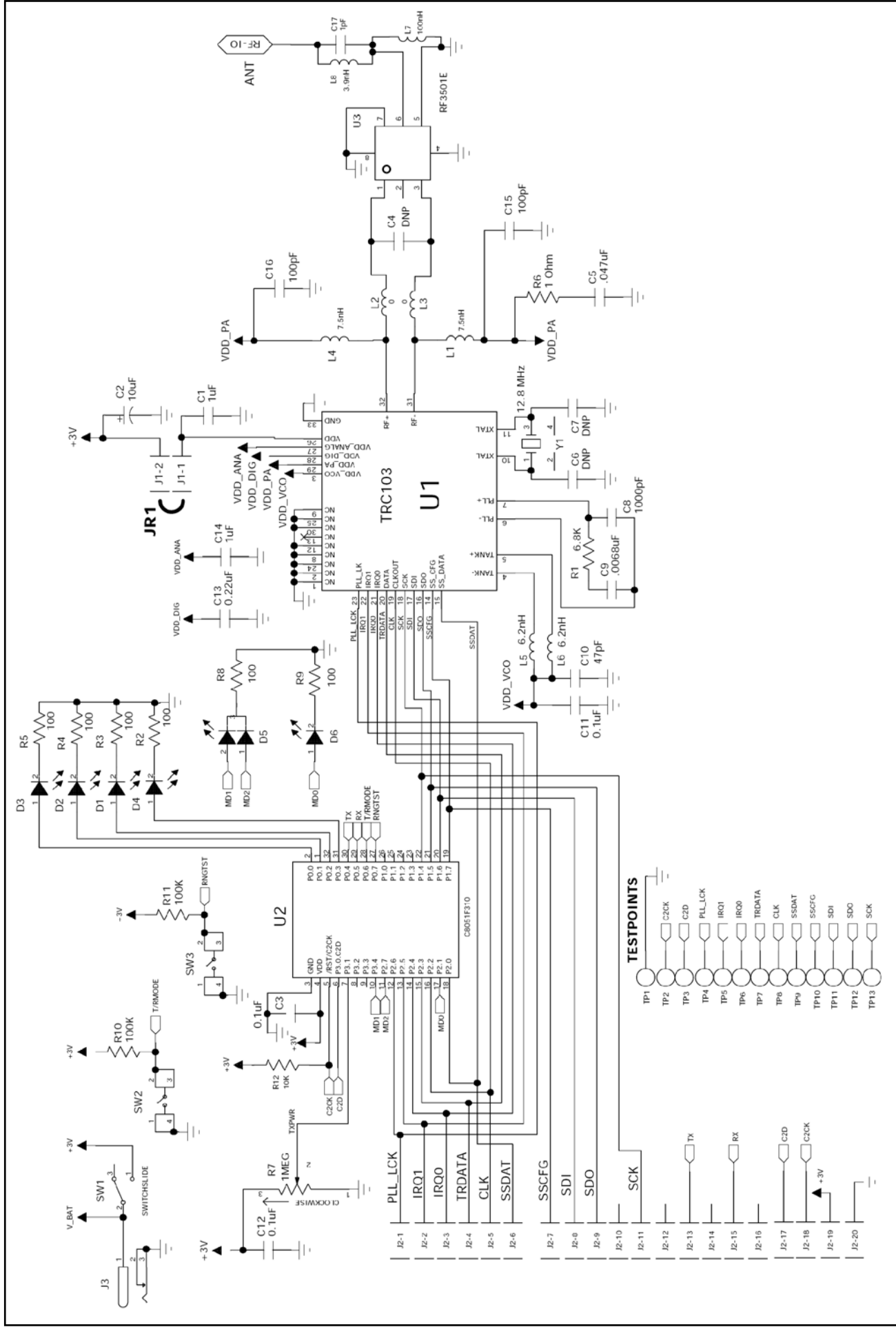


Figure 21. 868 MHz Schematic