



Analog Front End Integrated Circuit for 13.56MHz RFID Base Station

General Description

The EM4094 is an integrated analog system for 13.56MHz RFID reader system. It is highly versatile so it can be used in different reader systems having sub-carrier frequencies from 212KHz to 848KHz, hence covering ISO 14443 and ISO 15693 standards. The adaptability is achieved using a 3 wires serial interface to program the system option bits. The transmitter generates 200 mW output power into 50Ω load and is capable of OOK or ASK modulation.

Applications

- ❑ Low cost reader solution
- ❑ Hand held reader

Features

- ❑ ISO 15693 & ISO14443 compatibility
- ❑ Oscillator using 13.56MHz Quartz with selectable transconductance (gm).
- ❑ Antenna driver using OOK or ASK modulation using single antenna driver
- ❑ ASK modulation adjustable in range from 7% to 30%
- ❑ High output power 200mW from 5V supply
- ❑ Antenna short circuit protection
- ❑ Multiple receiver input for high communication reliability
- ❑ AM/PM demodulation with AGC signal amplifier
- ❑ 848KHz BPSK internal decoder (type B)
- ❑ Multiple sub-carrier receiving compatibility (212kHz, 424kHz and 848kHz)
- ❑ Multiple sub-carrier coding compatibility (Manchester, BPSK)
- ❑ Built-in receive low-pass filter cut-off frequency selectable between 400kHz and 1MHz
- ❑ Built-in receive high-pass filter cut-off frequency selectable between 100kHz, 200kHz and 300kHz
- ❑ Selectable receive gain
- ❑ Serial 3 pin interface for option selection
- ❑ Power down mode controlled by the 3 wires SPI
- ❑ Output Power: 200mW for a SO20w Package
100mW for a SO16w Package
- ❑ Operation temperature range -40°C to +85°C

Typical Application

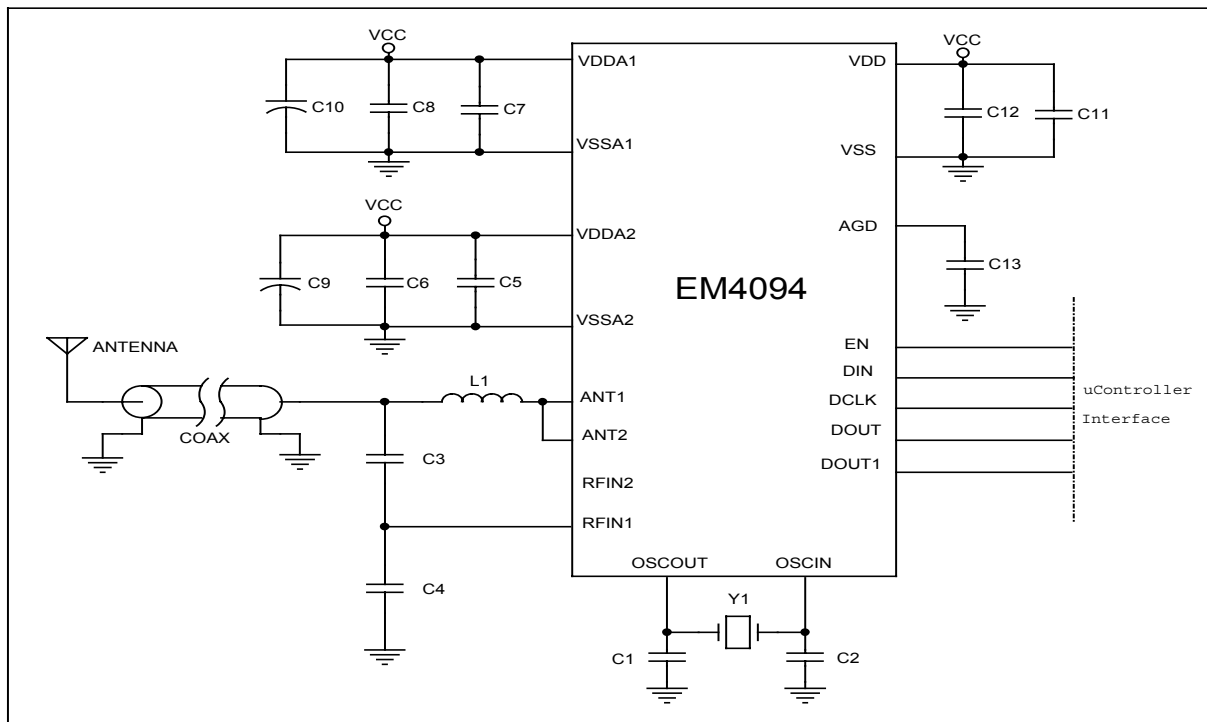


Figure 1