



## 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

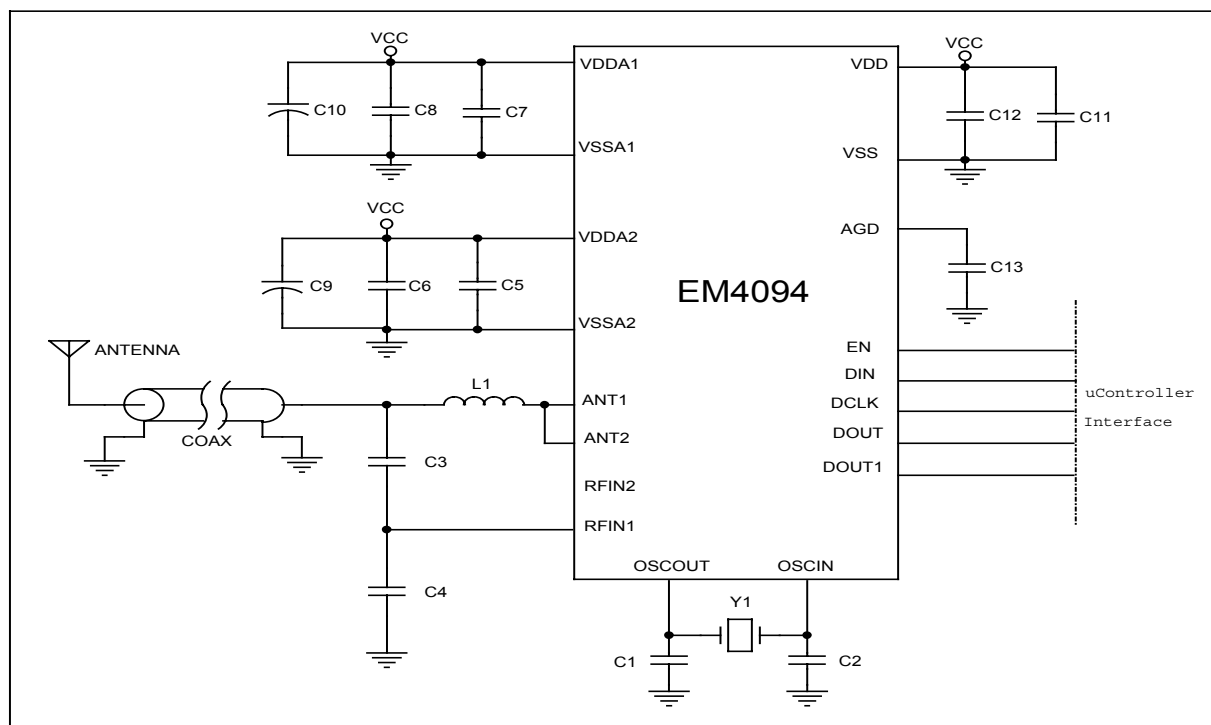


Figure 1