



3D Active Long Range Front-End

Description

The EM4083 is a CMOS integrated circuit intended for hands-free or multidimensional wireless communication systems at 125kHz.

It integrates a high sensitivity low frequency AM receiver together with digital functions accessible through a Serial Standard Interface.

EM4083 provides a wake-up signal to an external microcontroller upon reception of a valid programmable header and then a high-speed data transfer and decoding for long range applications at 125kHz.

Typical Applications

- Keyless entry systems
- Tire pressure systems
- Intelligent sensors
- Intelligent access control

Pinout

Vss	□ 1	16	□ Sclk
SO	□ 2	15	□ Si / Reset
ASK	□ 3	14	□ SS_n
Wakeup_n	□ 4	13	□ Vbat
RSSI	□ 5	12	□ Vilt
Coil3b	□ 6	11	□ Coil1a
Coil3a	□ 7	10	□ Coil1b
Coil2b	□ 8	9	□ Coil2a

Features

- 115kHz –140kHz Frequency Bandwidth
- 3 antennas interface for 3D reception
- Ultra low current consumption < 3.5µA
- High sensitivity (1mVpp)
- More than 2.5m distance in typical applications.
- 32x16 bits EEPROM (432 bits user memory).
- On Chip capacitors for antenna tuning
- On Chip resistor for Antenna Quality Factor tuning
- 4 wires Microcontroller Serial interface (SPI).
- 8 bits (EEPROM programmable) Header detection.
- Manchester data decoder (data rate 4Kbd).
- Data transmission performed by 100% amplitude modulation (OOK) in Up-Link.
- 40°C to +85°C Temperature range.
- 3V power supply battery
- TSSOP16 package.

Benefits

- Long and accurate communication range
- Extended battery life of the system
- Accurate Antenna Tuning using the Receive Strength Signal Indicator function
- Minimal use of external components Keyless entry systems

Typical Configuration

