





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.

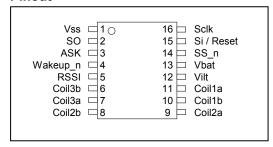
It integrates a high sensitivity low frequency AM receiver together with digital functions accessible through a Serial Standard Interface.

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



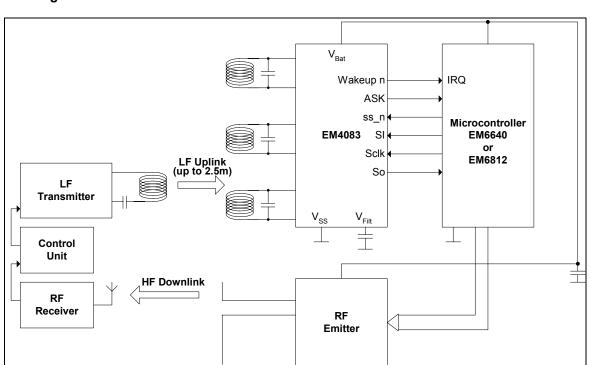
Typical Configuration

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



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