

Custom Radio Module using CC1101

Miniature 868MHz Transceiver Module with integrated Microcontroller, Antenna and flexible FPC Connection

«MINIATURE, LOW POWER, FLEXIBLE»

- IK Elektronik has developed a miniature radio module for Keyless Entry Systems (RKE).
- The module is suitable for short range data transmission with special power saving and mechanical flexibility requirements.
- The module is R&TTE approved and usable in Europe without any additional radio approval and fees.

«FEATURES»

- Coded serial transmission with „wake“-signals for low power modes,
- Flexibility in low power modes for different applications (battery driven, self powered or stationary driven),
- Reliable over-the-air packet transmission with CRC and FEC,
- Addressable P2P and P2M communication protocol,
- Other meshed network protocols are possible,
- Permanent info flash for common working parameters,
- Integrated antenna, optional coaxial connector.

«TECHNICAL DATA»

- Radio transceiver: CC1101
 - Microcontroller: MSP430F2132
 - Dimensions: 16.5x13x4mm³
plus flexible connection for standard FPC connector
 - 4 frequency channels: 868.0 ... 868.6MHz
868.7 ... 869.2MHz
869.4 ... 869.65MHz
869.7 ... 870.0MHz
 - Modulation: GFSK (FSK, ASK, OOK also possible)
 - Over-the-air Datarate: 76.8kbps *
 - Serial Datarate: 38.4kbps *
 - Transmit power: +10dBm
 - Sensitivity: -97dBm
 - Transmission range: 100m typ. LOS
(depends on radio and transceiver parameters)
 - Supply voltage: 2.5 ... 3.5V
 - Current consumption in RX mode: 20mA typ.
down to 10µA in Wake-on-radio (polling) mode
 - Current consumption in sleep mode: 2µA typ.
 - Current consumption in TX mode: 23mA typ.
 - Operating temperature range: -20 ... +70°C
 - Only 8 pins on flexible interface, which can be used with standard FPC connectors:
 - Serial RX / Serial TX
 - VCC / GND / Reset / Program
 - 2 I/O's normally used for "wake" signals
- * Higher data rates are possible on request
(Over the air up to 500kbps possible, serial up to 115.2kbps)

«APPLICATIONS»

- The module is intended for use in space limited applications, which require integrated wireless functions.
- The robust integrated antenna allows the use in metallic environments.
- Examples:
Wireless sensors, remote controls, keyless entry systems

© 10/2008, IK Elektronik GmbH, André Volkmar, Alexander Pletz

