ZMD300

2.4 GHz RF COB Module

DATA SHEET

V1.3 2011.2.10

Quan

Introduction

ZMD300 is a low cost System in Package (SiP) module which incorporates a low power 2.4GHz RF transceiver and an 80C51 MCU. With all necessary passive components packaged inside, this COB module further reduces total system cost and is ready for quick developement.

Features

- Very low cost with minimal external components (Oscillator and crystal already inside).
- Quick to market with System in Package module (MCU and RF transceiver inside)
- Reliable RF modulation technology: Direct Sequence Spread Spectrum(DSSS) 2.4GHz RF Transceiver
- Low power RF power consumption:
  16mAH RX and 15mAH TX
  3.5uA at deep sleep mode
  1uA at power down mode
- Small Size: (17 mm x 12 mm), Surface Mountable
- Integrated Crystal and Matching Circuitry
- Up to 50 meters Range (outdoor, line-of-sight)

Applications:

Remote Controller

Wireless Interactive Toy and Game

Wireless Consumer Electronics

Wireless Keyboard/Mouse

MCU Characteristics:

- 8K bytes flash program memory with ISP capability
- 256 bytes scratch-pad RAM
- Utilizes internal RC oscillator running at 6MHz
- Operating Voltage: 2.4-3.6V (3.3V typical)
- Enhanced 80C51 Central Processing Unit
- Two 16-bit timer/counter
- 8-bit Analog-to-Digital Converter(ADC)
- Low-Current Consumption: Operating with internal RC oscillator at 6MHz, the current consumption is less than 9mAH.
- Storage and Working Temperature Range: 0°C to +65°C

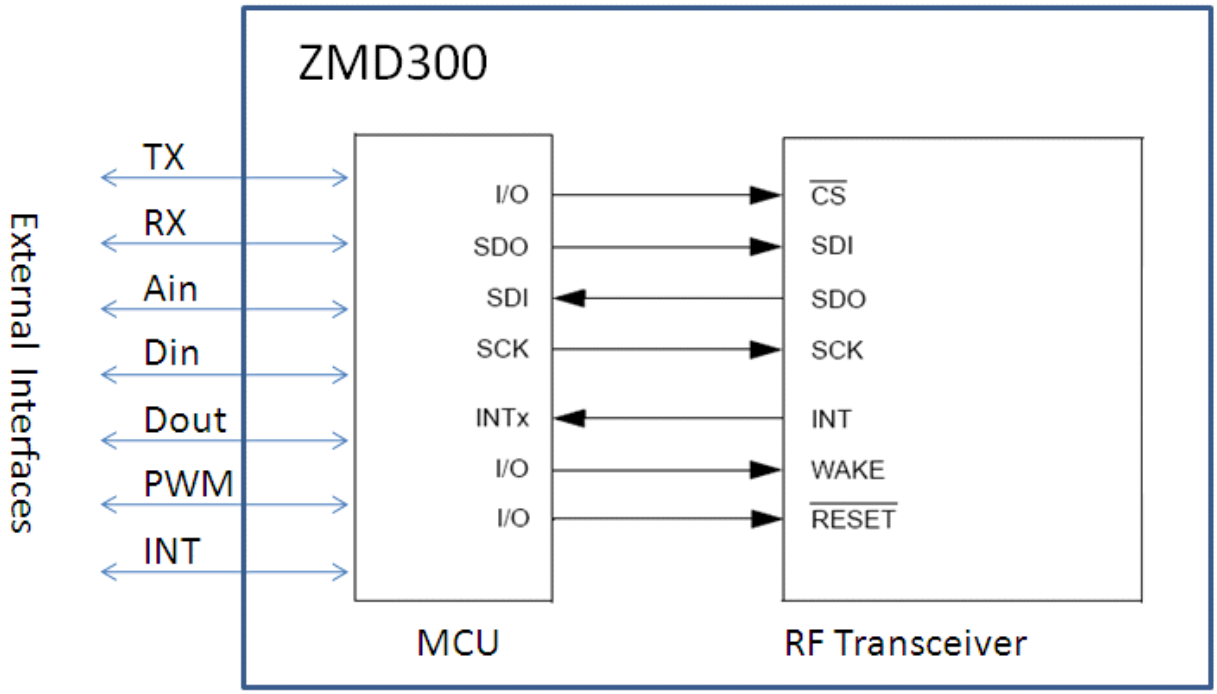
Important Warning: Do not solder this module with reflow process. Also avoid hot

air gun. Use soldering iron only.

RF Characteristics

- ISM Band 2.405-2.48 GHz Operation
- Data Rate: 250 kbps
- -95 dBm Typical Sensitivity with +5 dBm Maximum Input Level
- +0 dBm Typical Output Power
- Low power RF power consumption:
  16mAH RX and 15mAH TX
  3.5uA at deep sleep mode
  1uA at power down mode
- Modulation: Direct Sequence Spread Spectrum(DSSS)

System Block Diagram

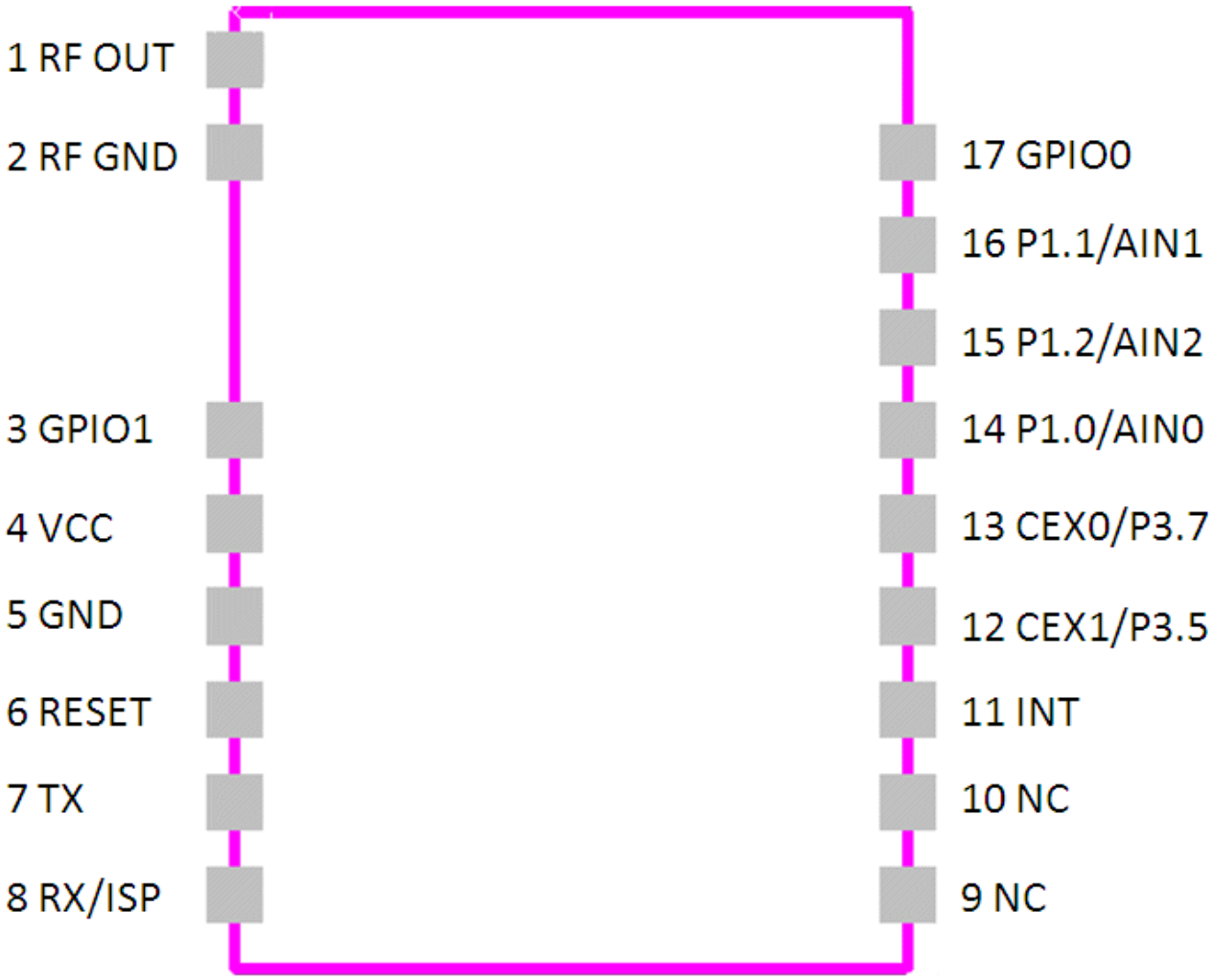


Note: Some of the pins have multiple functions. Programmers can decide which functions to use.

Device Pinout

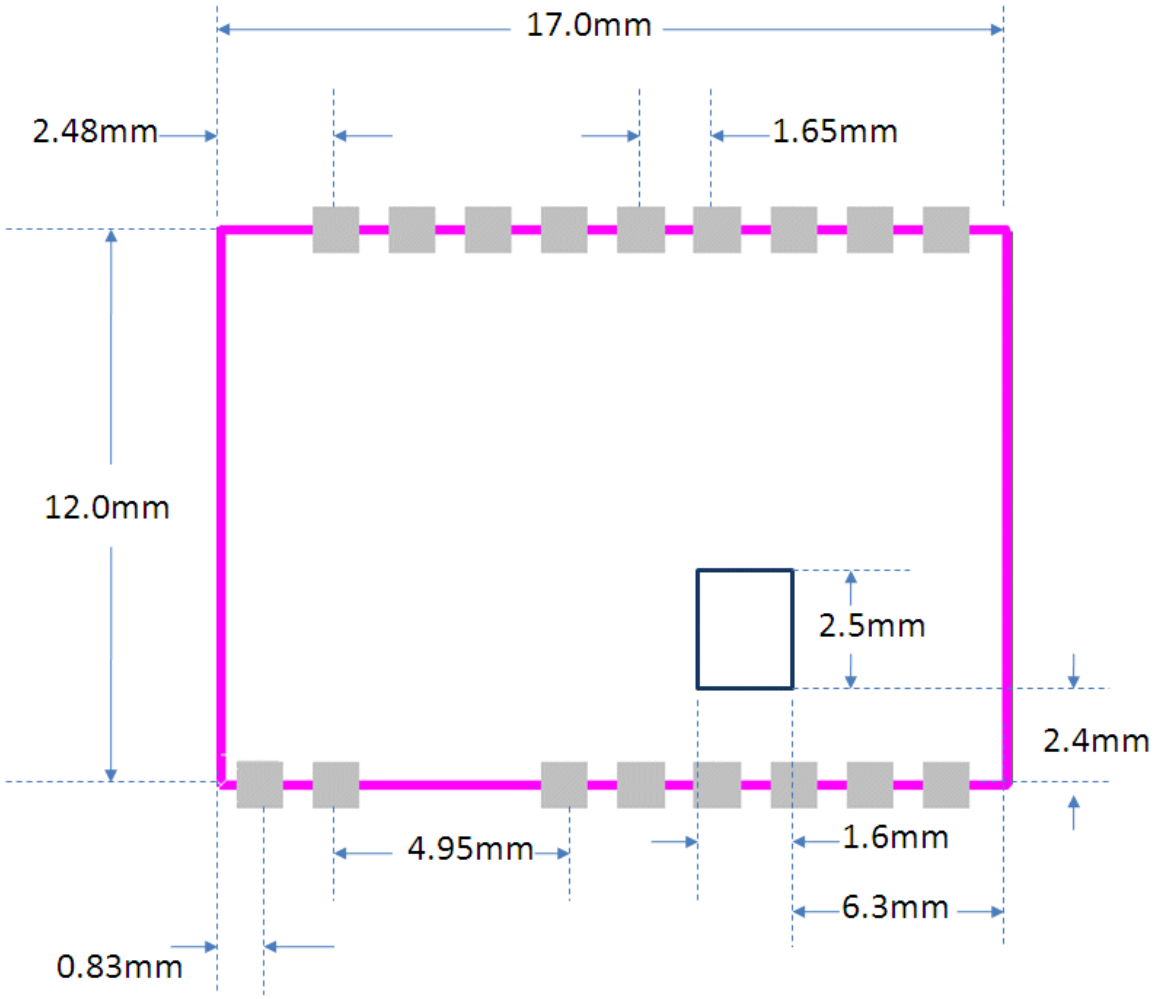
Pin #	Pin Name	Description
1	RF Output	RF signal output
2	RF GND	RF Ground
3	GPIO1	GPIO1 of RF Transceiver
4	VDD	Power Supply(2.4~3.6V)
5	GND	Ground
6	RESET	Hardware reset pin. A high duty on this pins for 10us plus 36 oscillation cycle will reset the device.
7	RX/P3.0	UART data receiving pin/GPIO P3.0
8	TX/ISP/P3.1	UART data transmitting pin/In System Programming/ GPIO P3.1
9	NC	No Connection
10	NC	No Connection
11	INT	Interrupt pin to microcontroller
12	CEX1/P3.5	PWM output 1/GPIO P3.5
13	CEX0/P3.7	PWM output 0/GPIO P3.7
14	P1.0/AIN0	GPIO P1.0/ ADC input pin0
15	P1.2/AIN2	GPIO P1.2/ ADC input pin3
16	P1.1/AIN1	GPIO P1.1/ ADC input pin2
17	GPIO0	GPIO0 of RF Transceiver

Device Diagram



Dimensions:

Length/Width/Height: 17 mm X 12 mm X 2.0mm



Note: The rectangular inside the module indicates a hole for DIP pins on board. Please reserve this hole area on your functional PCB board, otherwise the module cannot stick closely with the PCB board.

Manufacturer Information:

Quan International Co., Ltd.,