



RFWORLD

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无线模块

WM24L01 LP01

用户指南



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1:简介

WM24L01LP01 射频模块, 基于 Nordic nRF24L01 2.4G 数字无线收发一体FSK芯片, 以及功率放大芯片和LNA芯片, 接收灵敏度在 Nrf2401P 基础上增加10Dbm, 发射功率达到20DBM, 设计人员可以把整个无线模块作为一个嵌入式的元件, 从而不需要考虑无线的模拟部分: 例如阻抗匹配.



特点: 无需增加额外的管教控制 PA 和 LNA, 24L01 升级距离到 1KM, 无需改动软件.

频率:2.4G

速率: 250K, 1M, 2M

RF 输出功率: +20dBm , 100MW

接受灵敏度 :

-92dBm sensitivity at 2Mbps

-95dBm sensitivity at 1Mbps

-104dBm sensitivity at 250kbps

编程接口: SPI 数字接口

最大发射功耗 : 100MA

接收功耗: 17MA (LNA 开启)

POWER DOWN 功耗: 2ua

最大距离 : 1000 米/ 250Kbps/外置天线

天线 : PCB 板天线

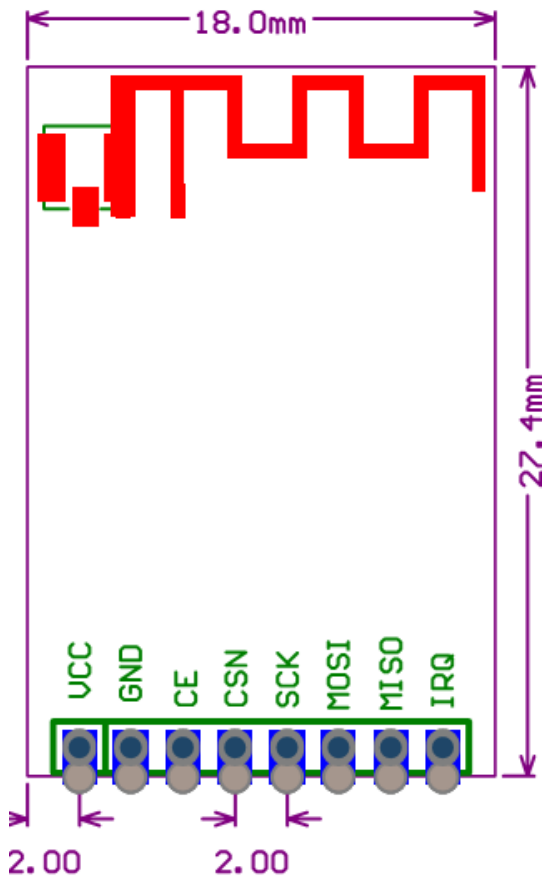
尺寸 : 18*27.4*3mm

通道数: 126

应用范围: 无线鼠标, 无线键盘, 2.4G 遥控, 有源电子标签, 无线玩具



2. 管脚配置



Pin	Symbol	Function
1	VCC	Power Supply (+3.3V DC)
2	GND	Ground
3	CE	Chip Enable Activates RX or TX mode
4	CSN	SPI Chip Select
5	SCK	SPI Clock
6	MOSI	SPI Data In
7	MISO	SPI Data Out
8	IRQ	Interrupt Input



3. 操作范围

Symbol	Condition	Function
VDD	Supply Voltage	2.7V-3.6V
TEMP	Operating Temperature	-40--+85

4. 电子参数

4.1 Power consumption

Symbol	Condition	Function
Supply Current in TX	20DBM Output Power	100MA
Supply Current in RX	(2M Data Rate)	17MA
Supply Current in POWER Down	CE	<2UA



4.2 General RF Condition

Symbol	Parameter (condition)	Notes	Min.	Typ.	Max.	Units
f_{OP}	Operating frequency	a	2400		2525	MHz
PLL_{res}	PLL Programming resolution			1		MHz
f_{XTAL}	Crystal frequency			16		MHz
Δf_{250}	Frequency deviation @ 250kbps			± 160		kHz
Δf_{1M}	Frequency deviation @ 1Mbps			± 160		kHz
Δf_{2M}	Frequency deviation @ 2Mbps			± 320		kHz
R_{GFSK}	Air Data rate	b	250		2000	kbps
$F_{CHANNEL\ 1M}$	Non-overlapping channel spacing @ 250kbps/ 1Mbps	c		1		MHz
$F_{CHANNEL\ 2M}$	Non-overlapping channel spacing @ 2Mbps	c		2		MHz

4.3 Transmit operation

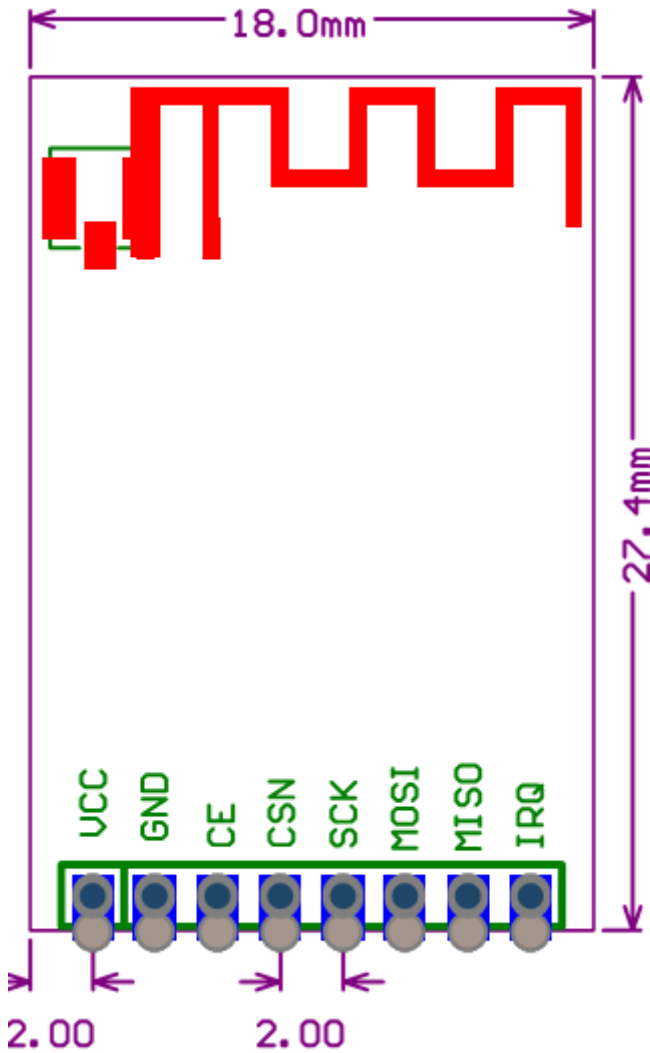
Symbol	Condition	Function
RF Max Output Power	20DBM	100MA

4.4 Receiver operation

Symbol	Condition	Function
Receive Sensitivity	(2M Data Rate)	-92dBm
Receive Sensitivity	(1M Data Rate)	-95dBm
Receive Sensitivity	(250K Data Rate)	-104dBm



5. 尺寸



6 Ordering Information

Part Number=module type—operation band—package type


WM24L01LP01-A

Module type

Antenna Type



Antenna Table:

NO	Package	Description
1	A (PCB 天线)	
2	B (外置天线)	

