

## Introduction

LW203 is single chip AM transmitter system designed for ASK communication systems. It includes a Colpitts oscillator, an optional RF power amplifier. Targeted applications are in the frequency band from 300MHz to 900MHz. By using an appropriate SAW resonator, LW203 can support both 315/433MHz and 886/915MHz UHF bands for ASK communication at low cost without any tuning. It is a complementary chip to Lexiwave's LW103 ASK receiver chip to form a complete RF solution for ASK communication.

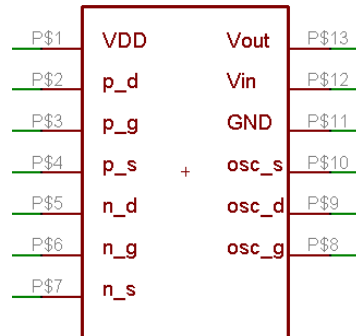
## Features

- Frequency range from 300 MHz to 900 MHz
- Optional RF power amplifier
- Low power consumption
- Operate from -20°C to 85 °C
- Only require a few inexpensive external components
- No tuning and no programming
- Low cost
- QFN-16L package or die form for PCB bonding

## Applications

- 315/433MHz or 886/915MHz Band Systems
- Remote controllers
- Security systems such as car alarm
- Wireless door bell
- Garage opener
- radio controlled toys
- Monitoring systems
- Local Oscillator Source
- Remote Fan/Light Control

## Block Diagram



## Pin Description

Pin no.	Symbol	Description
1	VDD	Power Supply
2	P_D	Bias in
3	P_G	Bias control
4	P_S	Bias out
5	N_D	Osc out
6	N_G	SAW in
7	N_S	Osc in
8	OSC_G	Power amplifier in
9	OSC_D	Power amplifier out
10	OSC_S	PA ground
11	GND	Ground
12	VIN	Data in
13	VOUT	Data out

**LW203 300-900MHz ASK Transmitter  
 Preliminary DataSheet**

Subject to change without prior notice

Rev 0.2, December, 2008

## Electrical Characteristics

### Maximum ratings

Rating	Symbol	Value	Unit
Power Supply Voltage	$V_{BATT}$	6	Vdc
Junction Temperature	$T_J$	125	°C
Storage Temperature Range	$T_{STg}$	-55 to 125	°C

### Recommended Operating Conditions

Characteristics	Value	Unit
Supply voltage	3 – 5	V
RF frequency range	300 – 900	MHz

### DC Electrical Characteristics

Characteristics	Minimum	Typical	Maximum	Unit
Operating current				
With PA	12	-	20	mA
Without PA	3	-	7	

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### AC Electrical Characteristics

Characteristics	Minimum	Typical	Maximum	Unit
Output power (at 50 ohm)				
With PA	-	3	-	dBm
Without PA	-	-2	-	

### Functional Descriptions

LW203 includes an RF oscillator and an optional RF power amplifier. With using an appropriate SAW resonator, the RF oscillator can be configured as a Colpitts oscillator to form a tuning-free and highly stable RF oscillator at 315/433/886/915 MHz. The output power of the Colpitts oscillator is about -2 dBm at 50-ohm load. ASK modulation can be accomplished by applying digital data at the oscillator input. For higher output power, the RF power amplifier can be connected to the Colpitts oscillator output. The power amplifier also serves as an isolation buffer to minimize frequency pulling or oscillation ceasing due to the near-object effect caused by the antenna.

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## Application Example

315/433/886/915 MHz ASK Transmitter with power amplifier

