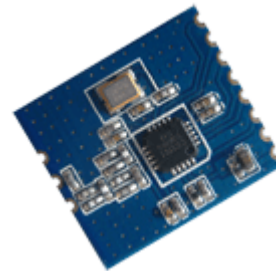

DRF1101F10
10dBm ISM RF Transceiver Module

V1.10

Features:

- Frequency Range: 433MHz
- Modulation: FSK/GFSK/OOK/MSK
- SPI Data Interface
- Sensitivity: -110Bm @2.4k bps
- Output Power: +10dBm
- Data Rate: 1.2~500 kbps
- Wake-on-Radio function
- Separate 64 bytes TX/RX FIFOs
- Digital RSSI output
- Programmable carrier sense indicator
- Optional Forward Error Correction
- Working Temperature: -20°C ~+70°C
- Standby current: $\leq 2\mu\text{A}$
- Supply voltage: 1.8~3.6V



Applications

- Automatic Meter Reading
- Home Automation
- Personal data logger
- Wireless sensor network
- Remote Keyless entry
- Wireless PC peripherals

DESCRIPTION

DRF1101F10 is a type of low cost RF front-end transceiver module based on CC1101 from Texas Instruments. It keeps all the advantages of RFIC CC1101 but simplifies the RF circuit design. DRF1101F10 module consists of RFIC CC1101, thin SMD crystal and antenna matching circuit. The antenna port is well matched to standard 50 Ohm impedance. Users don't need to spend time in RF circuit design and choose suitable antennas for different applications. DORJI also provides SMA connector and high gain antenna for longer communication distance. DRF1101F10 operates at 1.8~3.6V with extra low standby current which makes it suitable for battery powered-up applications.

PIN FUNCTIONS

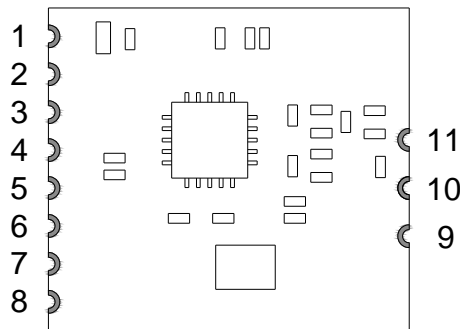


Figure 1: DRF1101F10 Pin Layout

PIN	Name	Function	Description
1	Power	Ground	DC 1.8~3.6V
2	GND	Ground	Ground (0V)
3	SDI	Input	SPI data input pin
4	SCLK	Input	SPI data clock pin
5	SDO	Output	SPI data output pin
6	GPIO2	Output	<ul style="list-style-type: none"> • Test signals • FIFO status signals • Clear Channel Indicator • Clock output, down-divided from XOSC • Serial output RX data
7	GPIO0	Input/Output	<ul style="list-style-type: none"> • Test signal • FIFO status signal • Clear Channel Indicator • Clock output, down-divided from XOSC • Serial output RX data • Serial input TX data
8	CSN	Input	Serial configuration interface, chip select
9	GND	Ground	Ground (0V)
10	ANT		50 Ohm Impedance
11	GND	Ground	Ground (0V)

Table 1: DRF1101F10 Pin Functions

ELECTRICAL SPECIFICATIONS

Symbol	Parameter (condition)	Min.	Typ.	Max.	Units
VCC	Supply Voltage	1.8	3.3	3.6	V
Temp	Operating temperature range	-20	25	70	°C
Freq	Frequency range	410	433	450	MHz
RES _{RSSI}	RSSI resolution		±0.5		dB
IDD _R	Current in receive mode @2.4k bps			20	mA
IDD _T	Current in transmit mode @10dBm			30	mA
IDD _S	Current in sleep mode.			2	uA
Pout	Max. output power			10	dBm
Sen.	Receiver sensitivity @2.4k bps @1.2k bps		-110 -112		dBm
DR	Data rate	1.2		500	Kbps
BW	Bandwidth @Crystal=26MHz	58		650	kHz
Z _{ANT}	Antenna Impedance		50		Ohm

Table 2: DRF1101F10 Electrical Specifications

ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Min.	Max.	Units
VCC	Supply Voltage	-0.3	3.6	V
Vo	Voltage on any digital pin	-0.3	VCC+0.3	V
Pi	Input RF level		+10	dBm
T _{ST}	Storage temperature	-50	125	°C

Table 3: DRF1101F10 Maximum Ratings

TYPICAL APPLICATION CIRCUIT

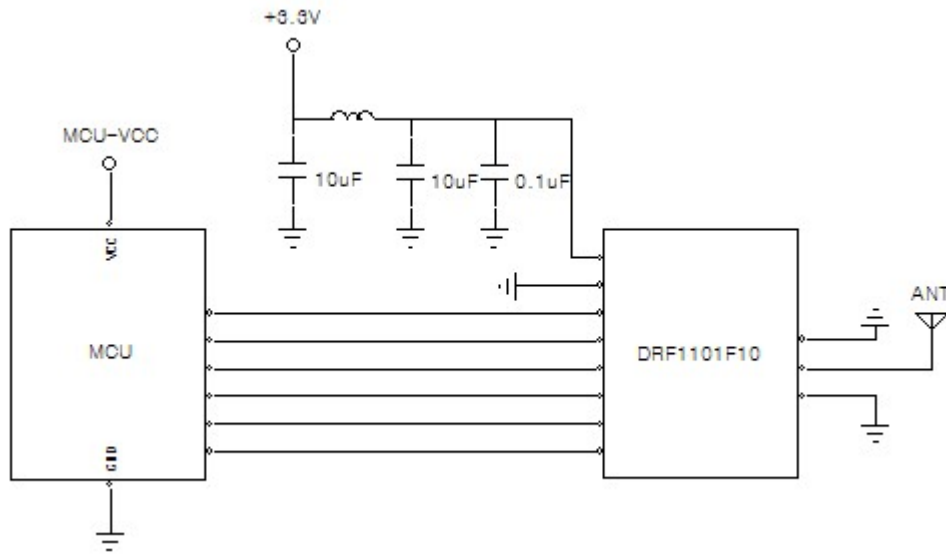


Figure 2: Application Circuit

MECHANICAL DATA

Unit: mm

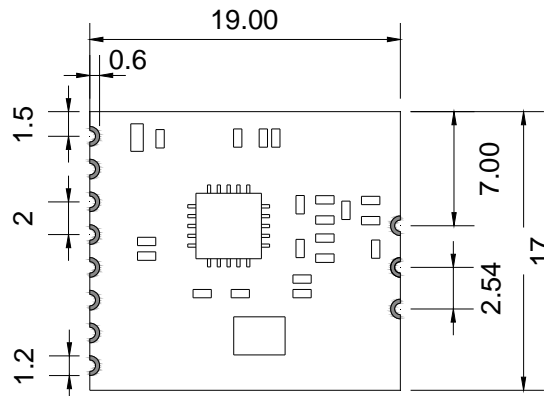


Figure 3: Mechanical Dimension

ORDERING INFORMATION

DRF 1101 F 10 — 043 S

① ② ③ ④ ⑤ ⑥

Num	Symbol	Meaning
①	RF module	RF FSK/GFSK module
②	IC Type	CC1101
③	Module Function	RF front-end module
④	Power	10dBm output power
⑤	Freq. Band	043: 433MHz
⑥	Package	S: SMD package

Table 4: Ordering Information

<p>Dorji Applied Technologies A division of <i>Dorji Industrial Group Co., Ltd</i></p> <p>Add.: Xinchenuayuan 2, Dalanganlu, Longhua, Baoan district, Shenzhen, China 518109</p> <p>Tel: 0086-755-28156122 Fax.: 0086-755-28156133 Email: sales@dorji.com Web: http://www.dorji.com</p>	<p>Dorji Industrial Group Co., Ltd reserves the right to make corrections, modifications, improvements and other changes to its products and services at any time and to discontinue any product or service without notice. Customers are expected to visit websites for getting newest product information before placing orders.</p> <p>These products are not designed for use in life support appliances, devices or other products where malfunction of these products might result in personal injury. Customers using these products in such applications do so at their own risk and agree to fully indemnify Dorji Industrial Group for any damages resulting from improper use.</p>
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