

XN297 Low Power 2.4GHz GFSK Transceiver

PRODUCT INTRODUCTION

(DRAFT VERSION V1.0)

Table of Contents

1. Product Description.....	2
2. Recommended Operating Conditions	2
3. Block Diagram.....	2
4. Main Parameters.....	2
5. Packages (QFN20).....	4
6. Typical applications	4
7. Precautions.....	6

1. Product Description

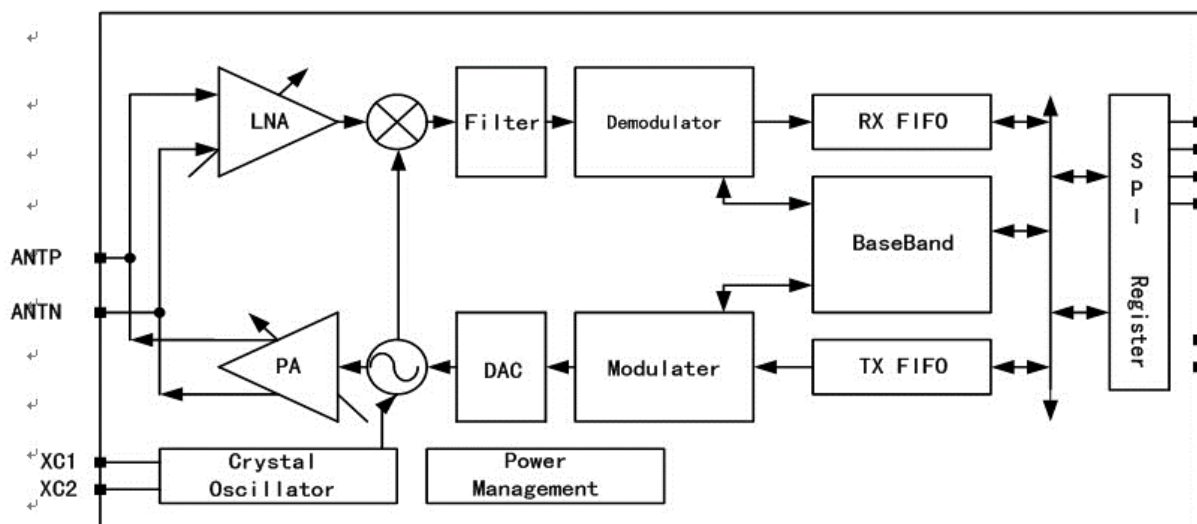
XN297 is a short-range transceiver chip, using GFSK modulation. Chip integrates an RF transceiver channels, GFSK modem and data links. Users only need to send / receive channel for simple setup, you can communicate. In Auto Transceiver mode, the chip can automatically determine the response information according to data delivery / reception was successful, so retransmission, packet loss, continue to send and wait for other operations, simplifying the use the user program.

- Communication features
- Integrated data process and state control
- Transfer up to 64-byte packets
- Multi-level FIFO data storage
- 8Mbps SPI Interface rate
- Burst and Enhanced communication
- Automatic answer and automatic retransmission
- GFSK modulation
- RSSI detection
- Address Identify and CRC Check
- Support Multiceiver
- 50 meters communication distance
- Support of Hardware and software
- PCB layout / microstrip antenna / cost reduction BOM
- Hopping algorithm / current optimization / enhanced mode

2. Recommended Operating Conditions

- Operating Voltage: 2.0~3.6V
- Operating temperature: -40°C~85°C

3. Block Diagram



4. Main Parameters

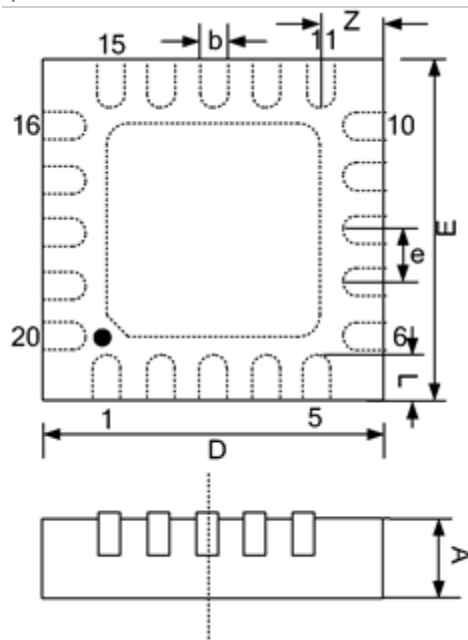
- Operating Frequency: 2400~2483MHz
- Frequency Channel: 1MHz@1Mbps 2MHz@2Mbps
- Data Rate: 1/2Mbps

- Crystal frequency: 16MHz±60ppm
- StandbyI:50uA
- TX: 23mA@8dBm 15mA@1dBm
- RX: 14mA@1Mbps 15mA@2Mbps

(Unless otherwise specified, VCC = 3.3V, TA = 25°C)

Characteristics	Symbol	Conditions (Unless otherwise specified, VCC = 3.3 (1 ± 5 %) V, TA = 25°C, INOSC input signal frequency: 16 (1 ± 6X 10 ⁻⁵) MHz,	Limit			Unit
			Minimum	Typical	Maximum	
Power-down mode current	I _{CC-PD}	—	--	2.5	--	uA
Idle mode current	I _{CC-STD}	—	--	0.8	--	mA
Current emission mode	I _{CC-Tx}	Output power P _O = 0dBm	--	14.5	--	mA
Receive mode current	I _{CC-Rx}	—	--	17.5	--	mA
Available bandwidth f _{op}	f _{OP}	—	2400	--	2483	MHz
Phase-locked loop frequency hopping interval	f _{PLL-res}	—	1	--	83	MHz
Rate	R _{GFSK}	—	1	--	2	Mbps
Channel spacing	f _{CHANNEL}	---	1	--	--	1MHz
The maximum output power	P _{O-Max}	---	--	-	--	dBm
Output power	P _{OFC}	---	-9	--	10	dBm
The maximum amplitude of the received	RX _{max}	Class 9 pseudorandom code input error rate <0.1%	--	--	3	dBm
Receiver sensitivity @ 2Mbps	RX _{SENS2M}	Class 9 pseudorandom code input error rate <0.1%	--	-88	--	dBm
Receiver sensitivity @ 1Mbps	RX _{SENS1M}	Class 9 pseudorandom code input error rate <0.1%	--	-91	--	dBm

5. Packages (QFN20)



Note: 1) identification of terminals area. Millimeters

Symbol	Size			symbolic numerical values	Size		
	minimum	nominal	maximum		minimum	nominal	maximum
A	--	--	0.80	b	0.15	--	0.25
D	--	--	3.10	e	--	0.40	--
E	--	--	3.10	L	0.35	--	0.45
Z	--	--	0.78				

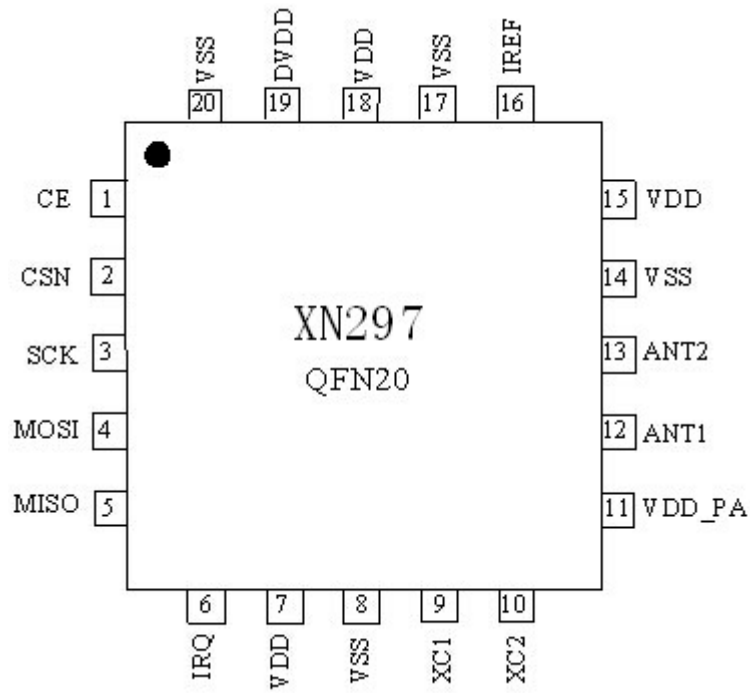
Figure 1 enclosure outlines

6. Typical applications

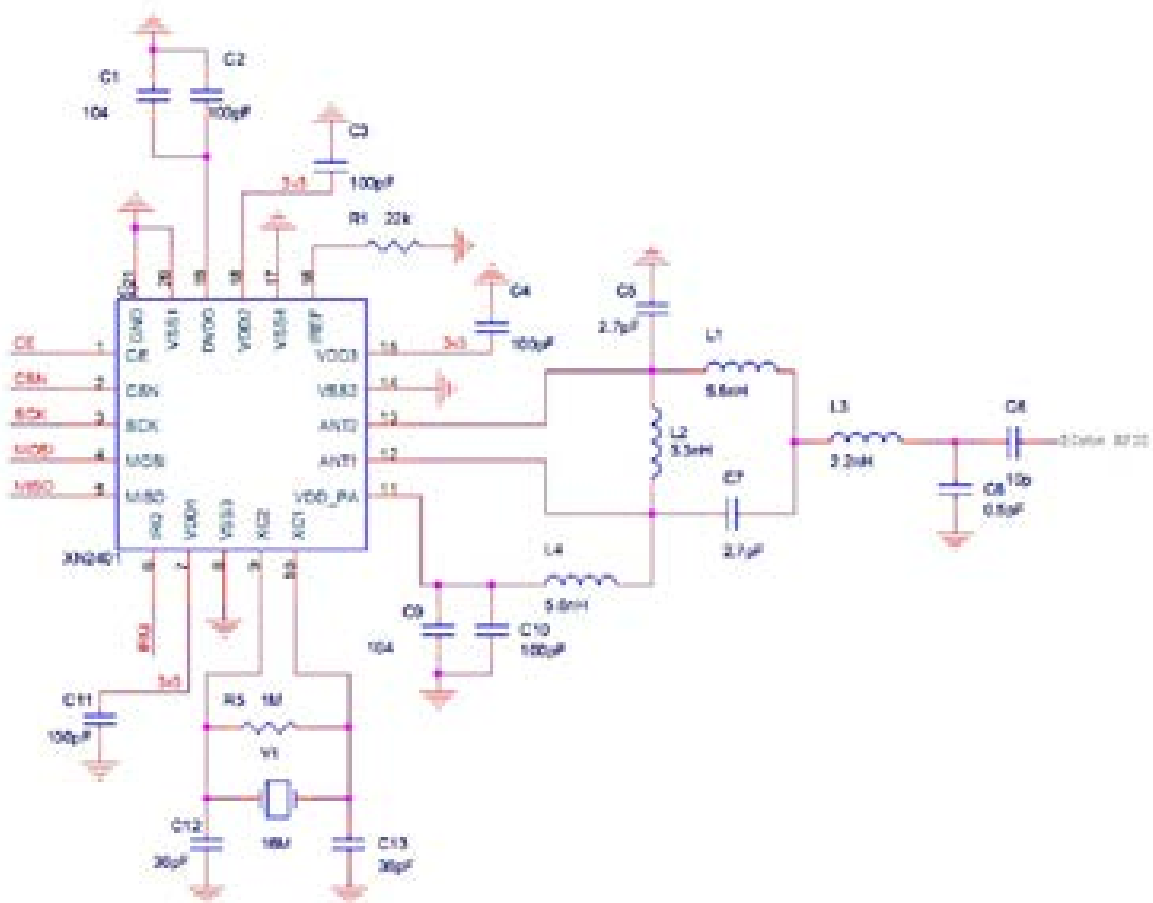
- Wireless mouse and keyboard
- Wireless gaming controller and toys
- Smart TV remote controller
- Active radio
- Smart Home and security systems
- Industrial sensors and wireless industrial equipment

7. Typical external components

Pin assignment



- Inductor 3 / capacitance 9 / Resistance 2
- 16MHz crystal oscillator 1



8. Precautions

- (1) The product is a CMOS device, storage, transport, use the process should pay attention to anti-static.
- (2) The device you want to use a good grounding.